

New York University In Shanghai



Undergraduate Bulletin 2014-2015

The policies, requirements, course offerings, schedules, activities, tuition, fees, and calendar of the school and its departments and programs set forth in this bulletin are subject to change without notice at any time at the sole discretion of the administration. Such changes may be of any nature, including, but not limited to, the elimination of the school or college, programs, classes, or activities; the relocation of or modification of the content of any of the foregoing; and the cancellation of scheduled classes or other academic activities.

Payment of tuition or attendance at any classes shall constitute a student's acceptance of the administration's rights as set forth in the above paragraph.

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Minors:

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- Genomics and Bioinformatics
- Business
- Chemistry
- Chinese
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Part One: Introduction and Overview

1. Who We Are

NYU Shanghai is the third degree-granting campus in NYU's global network, joining NYU in New York and NYU Abu Dhabi. It is a world-class, comprehensive liberal arts and sciences research university in the heart of Shanghai, and unlike any other university in the world.

Since 1831, NYU has proudly been in and of the city of New York, unencumbered by gates, intimately woven into the identity and landscape of one of the great idea capitals of the world. In the heart of Greenwich Village, the NYU community has flourished, gaining as much from the city as it has contributed.

Just as NYU is proudly in and of the city of New York, NYU is also proudly in and of the city of Shanghai, another great idea capital and a magnet for the best of intellect, culture, and inquiry from all over the world. But Shanghai is like no other place: a city of the future, it also has its own history and traditions, which are a vital part of its fabric. With its diverse resources—the educational foundation of NYU and the vibrancy and relevance of Shanghai—NYU Shanghai is where your classroom education intersects with a life's education.

The NYU Shanghai Vision

NYU Shanghai exemplifies the highest ideals of contemporary higher education by uniting the intellectual resources of New York University's global network with the multidimensional greatness of China. It guides students toward academic and moral excellence, preparing them for leadership in all walks of life, and it contributes to the endless quest for new insights into the human condition and the natural world.

Values

NYU Shanghai operates in accord with the values of curiosity, rigor, integrity, respect, harmony, responsibility, and deep engagement with all humanity.

Mission

In teaching, NYU Shanghai aspires to prepare its students for lives of discovery, satisfaction and contribution. They will study with superb teachers who nurture their capacity for original, rigorous, and critical thinking, and with diverse and intellectually gifted classmates. They will pursue a liberal education in the humanities, social sciences, natural sciences, and mathematics. They will immerse themselves in English, the language of international communication. They will master the skills of cross-cultural effectiveness in a community where half are from China and half are from other lands. They will reflect upon the role that great cities play in human progress, and upon the interdependent relationship between China and the rest of the world.

In research, NYU Shanghai aspires to produce original, rigorous, and important insights across a broad set of academic domains. Such insights do more than extend existing knowledge in predictable ways; they provide fresh understanding that is fully consistent with our observations and at the same time promise to have a significant influence on the thinking of others.

In public service, NYU Shanghai aspires to promote healthy development within the many communities it inhabits. It strives to be a responsible actor in the individual lives of students, teachers, and staff; in the local neighborhoods that surround its campus; in the district of Pudong, the city of Shanghai, and the nation of China; in East China Normal University; in New York University; in the interdependent society of humankind; and in a fully global ecosystem.

Research at NYU Shanghai

NYU Shanghai will continue in the great tradition of universities that combine world-class research with exceptional teaching. Research centers will be focused on Mathematics, Computational Chemistry, Neuroscience, and Social Development. Both graduate and undergraduate students at NYU Shanghai will have the opportunity to participate in research opportunities.

2. Overview

The NYU Shanghai academic experience is characterized by rigor, a global perspective, and a strong foundation in the liberal arts and sciences. Three distinct features define the NYU Shanghai approach and make it unique:

A Truly Innovative Core Curriculum

As our world evolves, education needs to evolve to meet the needs of 21st century students. The NYU Shanghai core curriculum is defined by integration. Students explore our social and cultural foundations through courses that are global in scope, with writing instruction woven in throughout, rather than delivered in discrete, unrelated courses. Mathematics and science are a part of every student's education, and those who specialize in the sciences will begin their studies with an innovative foundational course that brings together the basic sciences.

Playing to Our Strengths

NYU Shanghai has carefully developed a set of majors and specializations that capitalize not just on the world-class strength of NYU faculty, departments, and programs, but also on the limitless possibilities that Shanghai provides.

Global in Nature

As a member of NYU's global network, you literally have the world at your fingertips; why not reach out and incorporate it into your coursework? The study-away opportunities available to you as an NYU Shanghai student are unparalleled in higher education and are easily integrated into your program of study.

3. Partners

East China Normal University

ECNU is a high level normal university founded in October 1951. The university is made up of 19 full-time schools and colleges, two unconventional (nontraditional distance learning and continuing education) colleges and five advanced research institutes, with 58 departments offering 70 undergraduate programs. It has over 4,000 faculty and staff and more than 28,000 students.

Shanghai Municipal Education Commission

The SMEC is responsible for determining the local policies and direction of the educational system in Shanghai.

Pudong New Area Government

Since the beginning of its development in 1990 when plans were first announced, Pudong has become a major economic development zone and has emerged as China's financial and commercial hub. The NYU Shanghai academic building and residence halls are being built along Century Avenue in Pudong, a location as central to Shanghai as Fifth Ave is to Manhattan.

4. Where We Are

Academic Building

The brand new NYU Shanghai academic building located on Century Avenue in Pudong, it is surrounded by bustling activity, a lively community, and some of the most iconic buildings in the world—all right in the heart of a thriving economy and Shanghai's commercial center.

Fifteen stories tall, with two additional levels underground, the academic building contains 55,000 square meters (550,000 square feet) of usable space. It includes an expansive library, which will house an extensive physical and electronic collection with access to NYU's global library resources; a 300-seat auditorium; a 150-person colloquium space; a theater, music, and arts hall; and kitchen and dining facilities. Also generously equipped with classrooms capable of accommodating varying class sizes, dedicated floors for teaching and practical laboratories for various sciences, intimate study spaces, and faculty and administrative offices, the building functions as a campus unto itself and as the center of a thriving academic community. Wireless IT services and a robust IT infrastructure ensure that the building, and by extension, the students and faculty, remain fully connected to the NYU global network.

Residence Hall

In fall 2014, NYU Shanghai students will move into residence halls that will be as wired, integrated, and diverse as the classrooms and as the city itself. By living alongside fellow students and Residential Advisors, students will form intimate communities and the walls of the classroom will be broken down, allowing for education and an exchange of ideas to continue and flourish, unfettered by class schedules.

Location

At NYU Shanghai, students receive the support, engage in the activities, and participate in the community that they would expect from any other university in the world—except they'll have China as their canvas.

Just minutes away from the Century Avenue academic building, students will find a fully equipped athletics center that all NYU Shanghai students can use.

Beyond the walls of the residence hall are neighborhoods begging to be explored: the dazzling lights of the Bund, the winding labyrinthine passages of Taikang Lu, and the picturesque solitude of the Lujiazui Boardwalk are just some of the places students can while away an afternoon, eat xiaolongbao, and take in the sights and sounds.

And beyond the city limits of Shanghai, the country of China is available: the Great Wall, the Lingyin Temple, the Forbidden City, the Chengdu Panda Reserve, and more. China is, after all, a country with a vast, varying geography and demography, and a history no longer confined to just the pages of a book, but completely within reach of all NYU Shanghai students.

Part Two: Enrollment

1. Admission

ADMISSIONS

NYU Shanghai Office of Admissions in Shanghai (9am – 5pm China Standard Time)
Tel: +86 21-6223-5037

NYU Office of Admissions in New York (9am – 5pm Eastern Standard Time) **Tel: +1 212-998-4500**

<mailto:shanghai.admissions@nyu.edu>

Admission to NYU Shanghai is highly selective. Students are admitted based on the overall strength of their application, including academic excellence, extracurricular activities, teacher and counselor evaluations, and a demonstrated interest in global citizenship, service, and leadership.

Recommended High School Preparation

All applicants should pursue the most challenging curriculum available to them, as the rigor of a student's coursework will weigh heavily in the admissions process. NYU Shanghai considers a record of Honors, Advanced Placement (AP), International Baccalaureate (IB), A-Level or other high-level coursework to be an essential component of a successful application. In addition to advanced level courses, most successful applicants include many of the following areas of study in their high school programs:

- English—four years of English with a heavy emphasis on writing
- Math—three to four years
- History/Social Studies—three to four years
- Science—three to four years
- Foreign Language—two to three years

Please note that NYUSH's language of instruction is English, therefore it is required that all applicants have a high level of fluency in both written and spoken English.

Applying to NYU Shanghai and Other NYU Campuses

Students can indicate their interest in being considered for admission to NYU Shanghai in addition to programs at NYU's campuses in New York City and Abu Dhabi on the NYU Supplement to the Common Application.

Financial Support

NYU Shanghai is committed to providing educational opportunities to all talented students. It is NYU Shanghai's principle and core value to ensure that students' educations are not limited by financial hardship. As such, we invite all applicants, regardless of citizenship, to apply for financial aid through NYU Shanghai.

Transfer Applicants

NYU Shanghai is not currently accepting transfer applications from students external to NYU.

Transfer Applicants Within the University

Students who wish to transfer from one major to another within NYU Shanghai or from one of the other Portal campuses must file an Internal Transfer Application prior to the application deadline (November 1 for the spring term and March 1 for the summer or fall term).

Study Away Students

New York University students from the New York and Abu Dhabi portal campuses may attend NYU Shanghai as full time students for one or more semesters through the Study Away program run through NYU's office of Global Programs.

Special (Visiting Students)

NYU Shanghai is not currently accepting visiting students.

Readmission of Former Students

Any former student who has been out of attendance for more than two consecutive terms and who wishes to return to NYU Shanghai must apply for readmission. Applications for readmission are available online. (See admission application filing deadlines above.)

Requests for readmission should be received by the following dates: April 1 for the Summer and Fall terms, and November 1 for the Spring term.

Students who have attended another college or university since their last attendance at New York University must submit an official transcript from all schools attended though they will not receive credit for the courses.

Special (Postgraduate) Students

NYU Shanghai is not currently accepting special students.

NYU January Term

New York University's January Term allows students more flexibility and new scheduling options. NYU Shanghai students have the opportunity to earn course credit or explore a new interest. During this time, students can take advantage of intensive study at one of the Portal or global SAS sites and enjoy being in a major metropolitan area during a bustling and exciting time of year.

Oftentimes, the fall and spring semesters can be overly hectic for students, considering a full-time course load, student club responsibilities, work, internship commitments, and social obligations. This busy time forces students to focus mainly on their academic progress, which doesn't always allow the freedom to explore a new interest or take advantage of the many cultural resources that originally drew them to Shanghai. Further information is available at www.nyu.edu/winter..

Students should be aware that there are additional tuition fees for January term outside of the fall and spring semesters. Typically financial aid is not available for the January term.

Advanced Standing

NYU Shanghai does not award credit for work completed at another college or university.

Credit by Examination

NYU Shanghai does not assign credit for the Advanced Placement (AP) Program (College Entrance Examination Board), the International Baccalaureate (IB) Program, or the results of foreign maturity certificate examinations. In some cases students may be able to substitute a higher level course for an introductory course based on their performance on one of these tests.

How to Apply

USA/International

US/International students applying to NYU Shanghai may follow the same procedures for applying to any of NYU’s degree-granting campuses:

- Apply to NYU Shanghai via the [Common App](#)
- You must complete the NYU Supplement to the Common App
- Submit test scores per our [testing requirements](#) (NYU Shanghai’s US and International Standardized Testing Policy is the same as that of all of NYU’s degree-granting campuses)
- Submit requested academic records and school reports
- Submit requested teacher and counselor recommendation letters
- Apply for Financial Assistance
- Please apply in accordance with the following deadlines:

Milestone	Date
<i>Early Decision I</i>	
Application Deadline	November 1, 2013
Notification Deadline	December 15, 2013
Response to an offer of admission	January 15, 2014
<i>Early Decision II</i>	
Application Deadline	January 1, 2014
Notification Deadline	February 15, 2014
Response to an offer of admission	March 15, 2014

<i>Regular Decision</i>	
Application Deadline	January 1, 2014
Notification Deadline	April 1, 2014
Response to an offer of admission	May 1, 2014

How to Apply for Financial Aid:

All applicants (regardless of citizenship) will need to submit the CSS/Financial Aid PROFILE application (and Noncustodial PROFILE, if applicable) for NYU SH need-based grant consideration by:

Early Decision I: November 15 (to receive a financial aid estimate in mid-December)

Early Decision II: January 15th (to receive a financial aid estimate in mid-February)

Regular Decision: February 15th (to receive a financial aid award in April)

All U.S. Citizens and/or permanent residents must complete the Free Application for Federal Student Aid to be considered for U.S. federal financial aid by:

All Freshman Applicants: February 15 (to receive a final financial aid award in April)

Chinese Applicants

Admissions Regulations

上海纽约大学 2014 年招生方案

(中国学生)

融合中美两国教育精华的上海纽约大学，将为优秀学生提供在全球化背景下全新的、全英语的高等教育模式。上海纽约大学实行博雅通识教育。学生进校后，前两年学习通识核心课程，然后自由选择专业并学习专业课程。

根据教育部的有关规定，借鉴纽约大学招生的特色和经验，上海纽约大学将全面审视每位申请学生的综合素质、而不是仅仅基于高考成绩的模式，通过“校园日活动”，选拔一批具备强烈的求知欲以及开拓创新精神、热爱尝试新事物、拥有“世界公民”素质的优秀学生。

一、招生对象

能适应国际大都市竞争环境、向往走向世界、渴求新知识、勇于挑战新事物，学习成绩优异的高中毕业生。

上海纽约大学主要在“校园日活动”基础上，结合高考、高中学业水平考试、综合素质评价等，通过高校招生综合评价体系录取学生。少数高考成绩特别优秀的学生，在填报高考志愿前经过上海纽约大学专家面试合格，也可以录取。

二、招生计划

上海纽约大学 2014 年面向全国招生（港澳台地区除外），招生人数共计 151 名，不进行分省安排计划。

三、“校园日活动”

符合 2014 年高考报名条件并参加 2014 年高考报名的学生均可申请报考上海纽约大学，学校对申请材料进行审核后，将邀请其中优秀的申请人参加“校园日活动”。

对符合以下条件之一的学生，学校将予以优先考虑。

1. 在省级示范性高中成绩排名年级前 30 名的学生，或高中学业水平考试（已完成科目）成绩全 A，且具备良好综合素质的学生；
2. 在高中阶段参加数学、物理、化学、生物和信息学全国中学生奥林匹克竞赛，并获得省级二等奖及以上的学生；
3. 由部分高中校长推荐的学生（推荐表由上海纽约大学送达相关中学校长）。

四、申请方式

1. 所有申请报考上海纽约大学的学生，必须在 2014 年 1 月 1 日前登录美国高校本科入学在线申请系统（www.commonapp.org），填写并提交通用申请（Common Application），同时完成相关付款手续，才视为网上申请成功。

2. 完成网上申请后，学生请下载、填写并打印《2014 年上海纽约大学校园日活动申请表》。并用通用申请（Common Application）注册时登记的电子邮箱，于 2014 年 1 月 1 日前将申请表以电子邮件附件形式发送至上海纽约大学招生办公室：shanghai.admissions@nyu.edu，邮件名称为：省份 + 姓名 + Common Application ID。

3. 寄送报名材料

学生还需提交以下纸质材料（所有材料必须注明申请人的 Common Application ID），用标准 A4 纸打印或复印，按下列次序装订递交：（纸质材料请用订书机装订左上角，不要加装各类封面、封底、装订夹等，以免我们剔除这些额外包装物时误损申请材料）

（1）《2014 年上海纽约大学校园日活动申请表》

（2）高中一年级至三年级学习成绩（须注明每科满分是多少）、年级排名（按文理排名）、以及高中学业水平考试（会考）成绩的复印件，均需加盖公章。

如有发现成绩不实，一经查实，一律取消考试资格和录取资格，并将所在中学纳入非诚信学校，取消下年度推荐资格。

（3）主要获奖证书复印件和其他证明自己特长和优势的材料（非必须）。

（4）《校长推荐表》（非必须）。

申请材料请于 2014 年 1 月 1 日前以快递方式邮寄至上海纽约大学招生办公室（以当地寄出邮戳为准）。

学校地址：上海市中山北路 3663 号理科大楼 A316 室；邮编：200062；联系人：赵老师；联系电话：021-62235037。

五、选拔程序

1. 审核

学校组织专家组对学生的申请材料进行初审，并于 2014 年 1 月 30 日前，确定并公布参加“校园日活动”学生名单。

2. “校园日活动”

通过材料审核资格的考生，按要求参加上海纽约大学“校园日活动”，学校将通过公开演讲、写作、团队合作、模拟课堂以及面谈等方式考察考生的求知欲、亲和力、学习能力、适应能力、交流能力、心理素质、团队精神、表达能力、行为道德等。特别提醒：校园日活动全程用英语进行。

“校园日活动”时间：春节后，具体时间和地点将另行通知。

六、录取原则与优惠政策

上海纽约大学招生团队将根据面试专家的反馈，对每位考生进行严格的评价和讨论，并给予部分学生一定的录取优惠政策。

1. A 档：学生需参加 2014 年普通高考，高考成绩达到生源所在省本科第一批录取控制线，上海纽约大学即予以录取。

2. B 档：学生需参加 2014 年普通高考，高考成绩达到生源所在省本科第一批录取控制线，上海纽约大学将结合高考成绩、学校面试评价、高中学业水平考试成绩、学生综合素质评价等，通过本校招生综合评价体系，择优录取。

如考生所在省级招生办公室另有规定的，则按省招办规定的办理。

七、奖助学金

上海纽约大学录取的学生，如在高考中成绩优异，学校将提供新生奖学金。

上海纽约大学录取的学生，如家庭经济条件困难，学校将根据学生的实际情况提供助学金，确保被本校录取的学生不因家庭经济困难而辍学。

八、监督机制

上海纽约大学的招生过程将坚持公平、公开、公正的原则，保证不同经济背景、种族、性别或宗教信仰的学生都有机会申请学习，接受考生及其家长与社会各界的监督。

监督电话：86-21-62233276

监督邮箱：shanghai.jiandu@nyu.edu

九、咨询方式

学校网址：www.shanghai.nyu.edu

学校官方微博：<http://weibo.com/nyushanghai>

招办官方微博：<http://weibo.com/nyushadmissions>

咨询电话：86-21-62235037

咨询邮箱：shanghai.admissions@nyu.edu

2. Tuition, Fees, and Financial Aid

Tuition, Fees, and Financial Aid

When estimating the net cost to the family of a university education, a student should consider two factors: (1) the total cost of tuition, fees, and materials related to a particular program, plus costs directly related to the choice of living style (dormitory, apartment, and commuting costs) and (2) financial aid that may be available from a variety of sources. This section provides information on both of these distinct but related topics.

Tuition and Fees: 2014-2015

Following is the schedule of fees established by NYU Shanghai for the year 2014-2015. The University reserves the right to alter this schedule without notice. Tuition, fees, and expenses may be expected to increase in subsequent years and will be listed in online updates to this Bulletin.

Note that the registration and services fee covers membership, dues, etc., to the student's class organization and entitles the student to membership in such University activities as are supported by this allocation and to receive regularly those University and College publications that are supported in whole or in part by the student activities fund. It also includes the University's health services, emergency and accident coverage, and technology fees.

Note: Deposits may be required for laboratory courses. Students should consult the respective departments for information.

All fees are payable at the time of registration. The Office of the Bursar is located in room 1062. Checks, Online Payment and Wire transfer are to be drawn to the order of Shanghai New York University for the exact amount of the tuition and fees required. In the case of overpayment, the balance is refunded in a month after each semester starts by the Office of the Bursar.

A fee will be charged if payment is not made by the due date indicated on the student's statement.

Cost of Attendance

As part of NYU's global network, tuition at NYU Shanghai is consistent with that of NYU New York, which is approximately 45,000 USD per year (excluding miscellaneous fees and living expenses); however, Chinese students admitted through Gaokao will be granted special financial aid and their tuition will be approximately 100,000 RMB per year. NYU Shanghai will also make financial aid available for international students. In addition, merit scholarships will also be available for top students.

NYU Shanghai Estimated Cost of Attendance in US dollars for 2014-2015

Direct Costs: Costs that you will be charged by the University	Cost
Tuition, Registration and Services Fees	\$46,170
Health Insurance*	\$3,084
Room	\$3,400
Estimated Books	\$896
Estimated Indirect Costs: Other educational costs incurred	Cost
Board (Meals)	\$2,400
Estimated Supplies	\$300
Estimated Personal Expenses	\$1,000
Estimated Travel	\$3,750
Total Cost of Attendance (Estimated)	\$61,000

**Health Insurance charges vary. The estimated maximum is \$3,084 for 2014-2015. Your direct charges may vary.*

This preliminary budget represents the estimated annual cost of education for full-time undergraduate students at NYU Shanghai in US dollars for the 2014-2015 academic year. It includes tuition, room and board (which may vary based on a student's room selection), health insurance, personal expenses, books, and many student life activities. The cost above is estimated for the 2014-2015 academic year only. Annual adjustments to the costs and fees at NYU Shanghai may be necessary. The yearly tuition and residence costs include only fulltime fall and spring enrollment, course overloads incur additional tuition and book fees. Students that take summer or J-term courses will incur additional tuition, book, and residence costs.

Indirect costs, such as estimated travel, books and supplies, and personal expenses are costs that you may incur during the academic year, which will vary for each student. These indirect costs are not charged through NYU Shanghai. Estimated travel cost is based on two round trips between home and NYU Shanghai per year. Actual costs will vary based on your home location and other factors. Student health insurance is an estimate based on current information and is subject to change. Estimated cost of travel is included in the estimated Cost of Attendance for planning purposes. These costs will vary for each student.

Special Programs

The Tuition paid to NYU Shanghai covers the cost of tuition for a semester abroad in the Global Network. For other expenses for study in the NYU Study Away programs and in NYU International Exchange Programs, contact NYU Office of Global Programs, 110 East 14th Street, Lower Level, New York, NY 10003-4170; 212-998-4433 Also see www.nyu.edu/global.html.

Deferred Payment Plan (For U.S. students only)

The Deferred Payment Plan allows students to pay 50 percent of their net balance due for the current term on the payment due date and defer the remaining 50 percent until later in the semester. This plan is available to students who meet the following eligibility requirements:

- Matriculated and registered for 6 or more points
- Without a previously unsatisfactory University credit record
- Not in arrears (past due) for any University charge or loan

The plan includes a nonrefundable application fee of \$50, which is to be included with the initial payment on the payment due date.

A separate deferred payment plan application and agreement is required for each semester this plan is used. The Deferred Payment Plan will be available at www.nyu.edu/bursar/forms in July for the fall semester and in December for the spring semester.

For additional information, please visit the website of the Office of the Bursar at www.nyu.edu/bursar/paymentplans or call 212-998-2806

Arrears Policy

The University reserves the right to deny registration and withhold all information regarding the record of any student who is in arrears in the payment of tuition, fees, loans, or other charges (including charges for housing, dining, or other activities or services) for as long as any arrears remain.

Diploma Arrears Policy

Diplomas of students in arrears will be held until their financial obligations to the University are fulfilled and they have been cleared by the Bursar. Graduates with a diploma hold may contact the Office of the Bursar at +86 21 20596666 to clear arrears or to discuss their financial status at the University.

Withdrawal and Refund of Tuition

A student who, for any reason, finds it impossible to complete one or more courses for which he or she has registered should consult with an academic advisor. An official withdrawal must be filed either on Albert (through the first three weeks of the term only) or in writing on a completed Request for Withdrawal form with the Office of the NYUSH Registrar. (Note: An official withdrawal must be filed if a course has been canceled, and, in this case, the student is entitled to a refund of tuition and registration fees paid.)

Withdrawal does not necessarily entitle the student to a refund of tuition paid or a cancellation of tuition still due. A refund of tuition will be made provided such withdrawal is filed within the scheduled refund period for the term. (See the schedules below.)

Merely ceasing to attend a class does not constitute official withdrawal, nor does notification to the instructor. A stop payment of a check presented for tuition does not constitute withdrawal, nor does it reduce the indebtedness to the University.

The date on which the Request for Withdrawal form is filed, not the last date of attendance in class, is considered the official date of the student's withdrawal. It is this date that serves as the basis for computing any refund granted the student. The processing of refunds takes approximately two weeks.

There are two distinct refund schedules (see below):

1. For students withdrawing from some courses, but not all;
2. For students withdrawing from all courses.

Undergraduate Refund Schedule, Withdrawing from Some Courses (Fall and Spring Only)

Courses dropped during the first two weeks of the term: 100% (100% of tuition and fees)*

Courses dropped after the first two weeks of the term: NONE

Note: All fees (including school-related fees) are nonreturnable after the second calendar week of the semester.

Note: A student may not withdraw from a class after the ninth week of the fall or spring semester or in the last two weeks of each six-week summer session.

Undergraduate Refund Schedule, Withdrawing From All Courses (Fall and Spring Only)

This schedule is based on the total applicable charge for tuition, excluding nonreturnable fees and deposits.

Withdrawal on or before the official opening date of the term: 100% (100% of tuition and fees) *Withdrawal on the second day after the official opening date of the term through the end of the first calendar week: 100%* (100% of tuition only)

Note: The first calendar week consists of the first seven (7) calendar days beginning with the official opening date of the term (not the first day of the class meeting).

Withdrawal within the second calendar week of the term: 70% (tuition only)

Withdrawal within the third calendar week of the term: 55% (tuition only)

Withdrawal within the fourth calendar week of the term: 25% (tuition only)

Withdrawal after completion of the fourth calendar week of the term: None

Note: All fees (including school-related fees) are nonreturnable after the official first day of the semester.

The above refund schedule is not applicable to students whose registration remains within the flat-fee range.

For summer and January terms the above schedules apply but is accelerated with summer using two day increments and January term one day increments—example the end of two week refund deadline for partial withdrawal from a full semester course translates to four days in summer and two days in a January Term.

Note: A student may not withdraw from a class after the ninth week of the fall or spring semester or in the last two weeks of each six-week summer session.

Exceptions to the published refund schedule may be appealed in writing to Associate Dean for Academic Affairs and should be supported by appropriate documentation regarding the circumstances that warrant consideration of an exception. Exceptions are rarely granted. Students who withdraw should review the "Refunds" page on the Office of the Bursar's website, <http://shanghai.nyu.edu/academics/tuition>.

Federal regulations require adjustments reducing financial aid if a student withdraws even after the NYU refund period. Financial aid amounts will be adjusted for students who withdraw through the ninth week of the semester and have received any federal grants or loans. This adjustment may result in the student's bill not being fully paid. NYU will bill the student for this difference. The student will be responsible for payment of this bill before returning to NYU and will remain responsible for payment even if he or she does not return to NYU.

For any semester a student receives any aid, that semester will be counted in the satisfactory academic progress standard. This may require the student to make up credits before receiving any further aid. Please review the "satisfactory academic progress" standard so you do not jeopardize future semesters of aid.

Eligibility for Financial Aid

To be considered for financial aid, students must be officially admitted to NYU Shanghai or matriculated in a degree program and making satisfactory academic progress toward degree requirements. Financial aid awards are not automatically renewed each year. Continuing students must apply for financial aid each year, continue to demonstrate financial need, make satisfactory progress toward degree requirements, and be in good academic standing.

Please consult <http://shanghai.nyu.edu/admissions/returning> for current details.

Students applying to NYU Shanghai from outside of China must follow the instructions below if they wish to be considered for financial aid.

The College Scholarship Service/Financial Aid PROFILE

The [CSS PROFILE](#) is required of all applicants, regardless of citizenship, who would like to be considered for financial aid, including any scholarships/grants from NYU Shanghai. Note: students with divorced, separated, or unmarried biological parents will also need to submit the CSS Non-Custodial Parent PROFILE (or the CSS Non-Custodial Parent PROFILE waiver request with supporting documentation) by the deadlines specified below to be considered for institutional scholarships/grants. Chinese nationals applying to NYU Shanghai (using the Gaokao to qualify for admission) should **not** complete the CSS PROFILE.

- [Click here](#) to begin and submit the CSS/Financial Aid PROFILE
- [Click here](#) to begin and submit the CSS Non-Custodial Parent PROFILE (if applicable)
- Students needing a Non-Custodial Parent PROFILE Waiver Request should contact shanghai.financial.support@nyu.edu .
- The New York University CSS school code number is **2785**.

Freshman Applicants CSS/PROFILE Deadlines:

	Early Decision I	Early Decision II	Regular Decision
CSS Profile	November 15	January 15	February 15
Non-Custodial Profile (if applicable)	November 20	January 20	February 20
Estimated Notification	mid-December	mid-February	April

The Free Application for Federal Student Aid (FAFSA)

NYU Shanghai is approved by the U.S. Department of Education to provide federal financial aid to eligible students who are U.S. citizens or official permanent residents of the U.S. Therefore, all U.S. Citizens or official Permanent Resident applicants who would like to be considered for financial aid must submit the FAFSA in addition to the CSS/Profile Form.

- [Click here](#) to begin and submit the FAFSA.
- You must list "New York University" as a recipient and include our federal school code number (**002785**) when completing your FAFSA.
- Do not complete the FAFSA until after January 1st if you are applying for Fall admission.

Freshman Applicants FAFSA Deadline:

- Early Decision I: FAFSA: February 15
- Early Decision II: FAFSA: February 15
- Regular Decision: FAFSA: February 15

Financial Aid Notification: April to receive a final financial aid award.

Student Responsibilities

- You must apply for financial aid each year to receive any and all types of financial aid we award at NYU, including all need-based and merit-based scholarships.
- Consult www.nyu.edu/financial.aid for all financial aid application deadlines. Failure to meet the NYU Shanghai deadline may result in a reduction of your aid eligibility.
- Use NYU Albert at albert.nyu.edu to accept your financial aid awards.
- If you submit documents to the Office of Financial Aid, please put your University I.D. number on each page and keep a copy for yourself. Do not submit originals.
- Be certain that you understand the conditions of the awards you accept. Contact the Office of Financial Aid if you have any questions.
- You must adhere to satisfactory academic progress standards to remain eligible for financial aid. The Office of Financial Aid will send reminders, but it is the student's responsibility to know and heed the requirements.
- You must notify the Office of Financial Aid immediately if you receive an award or financial aid from any additional source. A change in your resources may affect your eligibility for student aid.
- You must respond immediately to all requests from the Office of Financial Aid. Failure to comply may result in the cancellation of your aid.
- Consult with the Office of Financial Aid immediately if you reduce your academic program to fewer points, or if you are enrolled full-time (at least 12 points) but intend to begin part-time (less than 12 points). Also contact the Office of Financial Aid if there is a change in your housing status. A change in enrollment or housing status may affect the financial aid you receive.
- Be sure to notify the Office of the University Registrar if you move by updating your contact information via NYU Albert at albert.nyu.edu. We use the records of the Office of the University Registrar to administer financial aid.

3. Registration, Advisement, and Counseling

Registration

The Registrar's office provides academic services and information on registration throughout the year. Any student with a question or problem is invited to come to the Registrar's office for assistance. Office hours are weekdays from 9 a.m. to 5 p.m.

Students can complete their initial registration through Albert, the University's Web registration system, at www.home.nyu.edu. Students can also use Albert to make later adjustments to their schedule.

Continuing Students

Students currently enrolled in NYU Shanghai register early for the following semester—in November for the spring term and in mid-April for the fall term. Students who are currently enrolled or on an official leave of absence receive notification of the date and time when they can register. Before registering, students plan a provisional schedule and put it in the "shopping cart" function of Albert. They also discuss their program and courses with their advisor, who then clears them for registration. At the appointed time or thereafter, students access Albert to finalize the course enrollment process. Students should complete registration by paying their tuition and fees. Online tuition statements and payment options are available through the [Office of the Bursar](#).

New Students

Newly admitted students receive detailed registration information a few weeks prior to orientation. New students meet with an academic advisor during orientation to discuss their class schedule and other academic questions.

Health Insurance and Immunization Policy

All full-time students must be in compliance with NYU Shanghai's health insurance and immunization requirements. For preregistration immunization requirements, please see: <http://shanghai.nyu.edu/campus-life/health-wellness/immunization>. If a student fails to comply, the student will not be allowed to register for classes until he or she is in full compliance. If the student does not receive clearance to register before the registration deadline for the semester, he or she will not be able to register and take classes until the next semester that they are in compliance. This policy includes first semester freshmen entering NYU Shanghai.

The health insurance and immunization requirements of some study away sites and portal campuses may vary from those at NYU Shanghai. Students must be in compliance with those requirements during their semester abroad in order to be eligible for studying away at that site or campus.

Advising

Academic advising is the process through which NYU Shanghai provides the necessary resources for students to make good choices. The primary purpose of academic advising

is to assist students as they develop meaningful educational plans compatible with their life goals. Although the NYU Shanghai curriculum is well defined, there will be opportunities, both within and beyond curricular constraints, for students to participate in courses and activities that support their academic and personal development.

While the ultimate responsibility for making decisions about life and educational plans rest with each individual student, an academic advisor assists them by suggesting options and by discussing possible outcomes of the choices they make. Students can expect that their academic advisor will help them:

- define academic, career and life goals;
- evaluate progress toward goals;
- understand curricular requirements, provide guidance during course selection, and help them identify other meaningful educational experiences;
- determine whether or not they need assistance with study skills (time management, organizing course information, stress management, etc.), and, if necessary, refer them to institutional and community support services;
- monitor their progress as they move through the undergraduate program.

Students are required to meet with their advisor at least once each semester to review their registration plan for the following semester and ensure that they are making normal progress towards their degree. Students will not be able to register until after this meeting. It is the individual student's responsibility to make certain that he or she fulfills the requirements for graduation.

Advisors offer a wide range of services and programs designed to meet the needs of a diverse student body. The advisors serve as a basic source of information about the degree requirements, policies, and procedures of the Campus. Students are able to get advice as well as secure tutorial support. Academic workshops are sponsored to assist students in planning academic programs, choosing a major, and negotiating registration.

A freshman advising program provides individual advising for new students entering in September. Each student is assigned an advisor who can provide information and support during the transition to college and with whom the student meets throughout his or her first year to discuss academic as well as career and other issues. Students needing additional assistance may, throughout the year, make an individual appointment with the Assistant Dean for Academic Affairs.

Advisors also meet individually with students who want to discuss concerns or questions they may be having about the University. The advisors serve as a liaison with other offices and can make referrals when appropriate. The advisor then is the best source for students to visit when they are unsure of where to go for help.

Office hours for advisors are maintained in the Assistant Dean for Academic Affairs office and the web based Albert advising scheduling system.

Major Advisement

Students who have declared a major have a major advisor who can be consulted throughout the academic year about discipline specific issues, graduate study, and career opportunities.

The Academic Resource Center

The mission of the Academic Resource Center (ARC) is to assist students in developing the skills, strategies, and behaviors needed to perform as confident, independent, and active learners. The ARC offers a wide variety of free services including academic counseling in study skills and peer tutoring as well as supplemental instruction and study groups for select courses.

ARC services are designed to help both students who are having academic difficulties and those who just want to improve their performance. It represents an important partnership between Academic Affairs and the Division of Student Affairs and serves to link the academic and residential lives of students. Services offered by the Center include the following:

- Individual and group tutoring sessions for math, writing, and reading
- Core Curriculum study groups
- Examination review sessions
- Study skills assessment
- Workshops on academic effectiveness and time management
- Computer-assisted tutoring

Internships

One defining characteristic of the New York University educational experience is the opportunity students have to apply their classroom learning to real-life experiences in a variety of professional and community-service settings. Shanghai provides such opportunities in abundance, and NYU Shanghai takes full advantage of our location in one of the financial, cultural, scientific, and media capital of the world.

A recent survey by the University's Wasserman Center for Career Development showed that 83 percent of graduating seniors in the College of Arts and Sciences held a job or internship related to their field of interest during their undergraduate years. Many different types of opportunities are available to students; some are paid, some involve volunteerism on the part of a student, and some carry academic credit—and all of these can be valuable. For the purpose of securing and making the most of such opportunities, students should consider the following criteria as a guide.

Paid Internships

Chinese visa law does not allow international students to hold off-campus part-time jobs or paid internships.

Voluntary or Community Service

Certain organizations encourage students to work on a volunteer basis to gain experience and to provide needed assistance to the organization. This type of arrangement is common, for example, in government and not-for-profit organizations. Such internships are valued, sometimes even required, for admission to some professional schools, but the College awards no credit for them.

Credit-Bearing Internships

A few departments offer academic internships that directly advance a student's knowledge in the academic discipline and thus earn course credit. Such academic internships must be sponsored by an appropriate faculty member through an academic department and normally require close faculty supervision, significant research in addition to the practical work experience, a reporting of findings, and a formal assessment of the student's work. All such internships require permission of the department or program, and registration for them must be within the regular deadlines. Majors offering credit-bearing internships may restrict them to declared majors, since those students have the requisite background. Internship courses can be counted toward some majors but not toward others. Students should check with their major to see if they have this option.

Independent Study

In some majors, independent study that draws on the activity or environment of the internship may be a possibility. Like a credit-bearing internship, independent study requires a proposal by the student, careful guidance from a faculty member, and a body of work that can be evaluated for course credit.

Preprofessional Programs

Pre-Medical and Health Studies Program

NYU Shanghai Premedical and Health Studies program fully prepares students to apply to US medical schools in the health field. The health professions provide many challenging and rewarding opportunities.

In order to apply to health-related professional schools, students typically need to complete courses in introductory biology, chemistry, and physics. At NYU Shanghai, these subjects comprise *Foundations of Science*, which is a rigorous three-semester, integrated course that covers the fundamentals of basic science. NYU Shanghai transcripts clearly note biology, chemistry and physics as distinct parts of *Foundations of Science*. In addition to introductory science courses, professional medical schools often require two semesters of math, one of which must be calculus, two semesters of organic chemistry, and two semesters of English, including writing. It is also recommended that students take a course in statistics, biochemistry, sociology and psychology. Students are encouraged to gain some practical experience by volunteering in a clinical setting and to demonstrate a commitment to service and humanistic endeavors.

It is important to understand that pre-professional training does not require students to major in science or math. Students may elect to major in any discipline and complete the Premedical and Health Studies program in parallel. You should choose a disciplinary major that you will enjoy and in which you will excel. If you enjoy the sciences, choosing a major in those areas is the right decision for you. If, however, you have other interests or talents, you will demonstrate your versatility and increase your chances of excelling by pursuing a major in the humanities or social sciences along with the prehealth curriculum.

NYU Shanghai, like many American colleges and universities, does not offer a premedical, pre dental, or prehealth major. In fact, the best professional schools want, above all, students with a broad education who can think clearly, read critically, and write well.

Your advisor will help you to explore your options, advise you about programs and appropriate course selection, and help you to present the best possible application to professional schools. Students should be aware that it is extremely difficult for applicants who are not U.S. citizens or permanent U.S. residents to gain admission to medical school in the U.S. Other health professional schools in the U.S. have more hospitable admissions policies, such as schools of dentistry and M.D./Ph.D. programs.

The following are the basic set requirements most medical schools in the U.S. request; however, specific medical schools might have additional requirements or modifications to those listed here. You should consult with the premedical advisor for more information.

SUGGESTED COURSES FOR APPLICATION TO MEDICAL SCHOOL

CCSC-SH 101-114 **Foundations of Science 1–6** (*Note: This covers the pre-med requirements of one year of general biology, one year of general chemistry, one year of general physics, and one year of lab work in each of those areas.*)

CHEM-SH 201-250 **Organic Chemistry 1 and 2**

MATH-SH 110-112 **Calculus and Multivariate Calculus and Differential Equations**

In addition:

Intro to Psychology

A sociology course that surveys individual and social patterns of behavior and determinants of health

Statistics

2 semesters of an upper level Expository Writing courses are recommended. These courses cannot be Creative Writing but need to focus on writing or interpreting advanced texts.

1 semester of Biochemistry

Pre-Law Program

Prospective law students are free to choose from the wide variety of courses offered at NYU Shanghai. NYU endorses the position of the Association of American Law Schools that a single "best" preparation for law school cannot be recommended. As a result, there is no prescribed prelaw curriculum.

Purpose of Prelaw Study

While NYU Shanghai considers the prescription of particular courses unwise, it does advise taking courses that require extensive reading, research, and writing. The Core Curriculum is an excellent beginning for prelaw students, as it offers a rigorous and multidisciplinary foundation for advanced study in the humanities, social sciences, and natural sciences. The honors programs offered by some majors provide opportunities to do extensive written work during the junior and senior years. No matter what one majors in, law schools value a well-rounded liberal arts education, so students should choose their electives wisely. For example, the precision of methodology and thought required of students in mathematics, computer science, logic, and the natural sciences will aid in the development of analytic skills, while a background in the behavioral sciences and the humanities (such as politics, economics, history, literature, philosophy, anthropology, and sociology) will offer a deeper understanding of human institutions and values, as well as opportunities for critical thinking and writing.

Counseling and Behavioral Health Services

Counseling and Behavioral Health Services (CBH) are available for all students and no appointment is necessary. Counseling services are free on a voluntary basis for any full- or part-time student enrolled in NYU Shanghai. When necessary, medication and outside referrals are available. All conversations are kept strictly confidential. CBH counseling staff members provide assistance in workshops, as well as in group and individual psychotherapy.

The social and emotional conflicts that occur in a person's life occasionally prevent him or her from functioning optimally. Concerns about interpersonal relationships, poor grades or other academic problems, feelings of inadequacy, anxiety, loneliness, sexual problems, eating disorders, substance abuse, and family and/or marriage conflicts are difficulties any individual might encounter. CBH counselors provide an atmosphere where personal concerns can be examined and discussed freely and confidentially.

Learning Disorders and Physical Disabilities

New York University is committed to providing equal educational opportunity and participation for students with disabilities. It is the University's policy that no qualified student with a disability be excluded from participating in any University program or activity, denied the benefits of any University program or activity, or otherwise subjected to discrimination with regard to any University program or activity.

The Henry and Lucy Moses Center for Students with Disabilities (CSD) determines qualified disability status and assists students in obtaining appropriate accommodations and services. CSD operates according to an *Independent Living Philosophy* and strives in its policies and practices to empower each student to become as independent as possible. Their services are designed to encourage independence, backed by a strong system of supports.

Any student who needs a reasonable accommodation based on a qualified disability is required to register with the CSD for assistance. They should contact the Director of the Academic Resource Center for assistance in registering.

4. Degree Requirements

NYU Shanghai confers the following degrees on candidates recommended by the faculty of the majors and approved by the trustees of New York University:

Bachelor of Arts (B.A.)

B.A. programs include Global China Studies, Economics, and Humanities.

Bachelor of Science (B.S.)

B.S. programs include Biology, Business and Finance, Chemistry, Computer Engineering, Computer Science, Electrical Engineering, Interactive Media, Honors Mathematics, Mathematics, Neural Science, and Physics.

The general degree requirements are the same for the B.A. and the B.S.

To be eligible for the bachelor's degree, students must complete 128 points with a cumulative grade point average of at least 2.0. Within these points, students must fulfill the requirements of both a major and the Core Curriculum.

The degree requirements to be fulfilled are those in effect during the term of the student's first registration in the College. Registration in another division of New York University does not constitute a registration in NYU Shanghai.

Readmitted students must fulfill the requirements as listed in the NYU Shanghai Bulletin published during the year of their readmission, unless their readmission letter states otherwise.

In very exceptional cases, a student may petition the Committee on Undergraduate Academic Standards for approval of a change in the requirements as stated in the Bulletin.

Conferring of Degrees

Degrees are conferred in September, January, and May. The NYU Shanghai graduation ceremony occurs in May and the formal conferring of degrees by the president of the University takes place annually at Commencement in May.

Students receive three confirmations of their graduation: a New York University Diploma, a Chinese diploma, and a Chinese graduation certificate.

The Major

Major requirements, varying from subject to subject, are specified in the sections devoted to the course listings of individual majors. Generally, one-third to one half of the total points are earned in the major concentration.

Every student must complete a major with a cumulative grade point average in the major of at least 2.0. At least one-half of the courses as well as one-half of the points used to complete the major must be taken in the disciplinary area. A student may not register for courses in the major outside of NYU. The student must be approved as a major and must review his or her program with a major advisor each term.

Declaration

Students may declare a major prior to registration for the next semester if they are registered for enough credits in the current semester so that at the end of it they will have completed at least 32 credits (typically registering for fall of their second year). They must have a final grade of C, or current semester midterm grade of B, or higher in a designated prerequisite course for that major.

Students must declare a major prior to registration for the next semester if they are registered for enough credits in the current semester so that at the end of it they will have completed 64 credits (typically registering for fall of their third year). They must have a final grade of C, or current semester midterm grade of B, or higher in a designated prerequisite course for that major

The prerequisite courses for each major are:

Humanities – Final grade of C, or current semester midterm grade of B, or higher in Global Perspective on Society II

Global China Studies – Final grade of C, or current semester midterm grade of B, or higher in Concept of China

Biology – Final grade of C, or current semester midterm grade of B, or higher in Foundations of Science 3&4

Neural Science – Final grade of C, or current semester midterm grade of B, or higher in Foundations of Science 3&4

Chemistry – Final grade of C, or current semester midterm grade of B, or higher in Foundations of Science 3&4

Physics – Final grade of C, or current semester midterm grade of B, or higher in Foundations of Science 3&4

Honors Mathematics – Final grade of C, or current semester midterm grade of B, or higher in Analysis I

Mathematics – Final grade of C, or current semester midterm grade of B, or higher in Multivariate Calculus

Computer Science – Final grade of C, or current semester midterm grade of B, or higher in introduction to computer science

Computer Engineering – Final grade of C, or current semester midterm grade of B, or higher in introduction to computer science

Electrical Engineering – Final grade of C, or current semester midterm grade of B, or higher in introduction to computer science

Interactive Media Arts - Final grade of C, or current semester midterm grade of B, or higher in Computational Media or Communications Lab

Business and Finance – Final grade of C, or current semester midterm grade of B, or higher in
Statistics for Business and Economics
Economics - Final grade of C, or current semester midterm grade of B, or higher in
Microeconomics

Double Major

Students may attempt a double (second) major. The same requirements, including the maintenance of a minimum grade point average of 2.0, apply to the second major as to the first. In some cases, courses may be applicable to both majors. Students must then obtain the written approval for the shared course(s) from the Associate Dean for Academic Affairs. No more than two courses may be approved for double counting. The second major is declared in the same way as the first (see above) but not until fall of senior year.

Students should consult with their advisor before attempting a double major as the requirements of the first major and the second limit the options for students to complete two majors in the standard 128 credits. In addition, in some cases the Chinese language requirement, which consists of the equivalent of four semesters (the “Chinese Language Requirement”), further limits the ability to complete two majors. Requirements for completing a major as a double major are detailed in the same section as the major requirements.

The ability to satisfy the requirements for an additional major cannot be guaranteed for any student and will be based upon course availability and the time the student is willing to invest to satisfy all of the requirements of the additional major. In some cases this might require more than 8 semesters of undergraduate study. In most cases pursuing a double major will cause a delay in graduation and limit study abroad opportunities.

Regulations Pertaining to both Major and Minor

The major and minor requirements to be followed are those stated in the major sections of the Bulletin in effect during the semester of the student's first registration in the College. No credit toward the major or minor is granted for grades of C- or lower, although such grades will be computed into the grade point average of the major or the minor, as well as into the overall grade point average.

No course to be counted toward the major or minor may be taken on a pass/fail basis. (See "Pass/Fail Option" under Academic Policies in this Bulletin.)

Time Limit

All requirements for a degree at NYU Shanghai must be met within a period of eight years from the date of matriculation. For students who are readmitted to NYU Shanghai, the length of time is proportionately reduced.

Residence Requirement

All course work used to satisfy the 128-credit degree requirement must be completed at NYU. The courses used to complete the major or the minor must be taken in that disciplinary area.

Part Three: Standards and Policies

1. Academic Policies

Academic Program

The programs and courses offered at NYU Shanghai are designed for students who attend classes offered during the day on a full-time basis. A full-time schedule normally consists of 16 points per term, or 32 points per year, which enables a student to complete the entire program of 128 points in four years. Minimal full-time status entails completing at least 12 points per term, or 24 points per year. Students who wish to attend part time should obtain permission from the Office of the Associate Dean for Academic Affairs. Such status will be granted only when there is good and sufficient reason for part-time study. Failure to complete a minimum of 24 points per year jeopardizes a student's full-time status and his or her eligibility to receive financial aid.

Students in good academic standing may register for more than 18 points per term after their freshman year with the clearance of their academic advisor and approval of the Assistant Dean for Academic Affairs. Students on academic probation, however, who wish to register for more than 18 points per term must obtain the prior approval of the NYU Shanghai Committee on Academic Standards, as must any student wishing to register for more than 20 points.

There are additional per credit costs for each point above 18 as well as an additional registration fee and added costs for textbooks in a given semester.

Availability of Courses

In order to ensure that students do not have to compete for access to their required courses, registration priority is given to students who are registering for courses in their primary major. Excess demand will not lead to creation of additional space in major elective courses or for students seeking to take a required major course earlier than the semester it is listed in the recommended course sequence.

Although the University encourages the exploration of other disciplines, access to courses outside a student's primary major (including those courses that fulfill requirements for an additional major, minor, etc.) is on a space-available basis and is not guaranteed.

Change of Program

To make any changes in their program, including dropping or adding courses given in other divisions of the University, students must access Albert via NYUHome at home.nyu.edu or file a Change Course Enrollment form in the Registrar's Office.

Adding Courses

The deadline for the adding of a course or a section is the end of the second week of the semester. The deadline applies to any course added by an NYU Shanghai student and to any NYU Shanghai course added by students from other divisions. The adding of any course or section after the end of the second week is generally allowed only when the student is changing levels within a discipline—for example, from a Chinese or mathematics course to a higher- or lower-level course in the same discipline. The changing of levels is permitted only with the written approval of both the instructor and the student's advisor.

Dropping or Withdrawing From Courses

Students are expected to maintain a full-time program as described above. Occasionally, they may drop or withdraw from a course if, because of reasons beyond their control, they cannot continue. Withdrawing from a course during the first two weeks of the term is treated as a drop and will not appear on the transcript. Those withdrawn from during the fourth week through the ninth week of the term will be recorded with a grade of W. After the ninth week, no one may withdraw from a course. Students who are ill or have a serious personal problem should see, call, or write their advisor.

Complete Withdrawals

Students who wish to withdraw from all their courses must meet and discuss their plans with their advisor, complete the required form, and get the approval of the Associate Dean for Academic Affairs.

A student who withdraws officially from all courses in a term may register for the following term, if four calendar months will have passed since the start of the withdrawal, and subject to any limitations attached to their withdrawal approval. If the student is unable to attend NYU Shanghai during the term following the withdrawal, he or she should request a leave of absence from their advisor. For more information, see "Attendance," below.

Auditing

Matriculated students in NYU Shanghai may audit (i.e., attend lectures without intending to receive credit) any course in NYU Shanghai with the consent of, and under the conditions established by, the instructor and the major. Auditors may not preempt space required for registered students. Courses cannot be audited as a means of satisfying requirements for an incomplete grade or as a means of changing a previous grade. Language classes may not be audited. Students may not audit classes during their first year of enrollment at NYU Shanghai.

Students must register as an auditor but audited courses will not appear on the student's official transcript. Special (nondegree) students may not audit courses.

Attendance

Although the administration of NYU Shanghai does not supervise attendance of classes, it supports the standards imposed by instructors.

When students are ill, they are expected to notify professors in advance of class, if at all possible. If the instructor determines that it is an excused absence then the student should negotiate with the professor the time and place for make-up of assignments, tests and/or examinations missed. Students who are seriously ill, should contact the Office of Health and Wellness for assistance and the Assistant Dean for Academic Affairs so that the student's professors may be contacted.

Students may present, and faculty may choose to ask for, verification of an illness but providing verification of illness does not supersede a course policy that does not allow excused absences for illness or overrule an instructor's judgment that the illness does not meet the standards for an excused absence.

Students who, in the judgment of the instructor, have not substantially met the requirements of the course or who have been excessively absent may be considered to have withdrawn unofficially and may be given the final grade of F. See "Withdrawing From Courses," above.

Religious Holidays and Attendance

New York University, as a nonsectarian institution, adheres to the general policy of including in its official calendar only certain legal holidays. However, it has also long been University policy that members of any religious group may, without penalty, absent themselves from classes when compliance with their religious obligations requires it. In 1988, the University Senate affirmed this policy and passed a resolution that elaborated on it as follows:

1. Students who anticipate being absent because of any religious observance should, whenever possible, notify faculty in advance of such anticipated absence.
2. Whenever feasible, examinations and assignment deadlines should not be scheduled on religious holidays. Any student absent from class because of religious beliefs shall not be penalized for any class, examination, or assignment deadline missed on that day or days.
3. If examinations or assignment deadlines are scheduled, any student who is unable to attend class because of religious beliefs shall be given the opportunity to make up that day or days.
4. No adverse or prejudicial effects shall result to any student who avails himself or herself of the above provisions.

Policy on Class Conduct

Students are expected to attend all scheduled classes unless the instructor explicitly informs the class that other ways of doing the work are acceptable. The action to be taken in regard to tardiness, absence from class or making up late work is the responsibility of the individual instructor; the instructor should consult with the students' Academic

Advisor and the Assistant Dean for Academic Affairs if major action, such as dropping the student from the course, is being considered.

All classes will be held at their scheduled hour on days immediately before and after all holidays and recesses. Both faculty and students are expected to be present.

Students are permitted to be absent from classes to participate in authorized contests, conferences, and presentations, either at home or out of town, provided the following conditions are met:

- All work missed must be made up to the satisfaction of the instructor(s) concerned;
- No trip shall involve an absence of more than two days, excluding days when classes are not scheduled;
- The total number of days of absence shall not exceed six per sport or per organization annually;
- Each student will obtain an absence authorization signed by the Assistant Dean for Academic Affairs. The student will present this authorization to the instructor. This is not an excuse for work missed.
- Students who, because of religious beliefs, cannot attend class may arrange in advance on an individual basis to be absent, provided the work missed is made up in a manner satisfactory to the instructor(s) of the class(es) missed.

Technology affords many students access to portable devices including cell phones, PDAs, and laptops. It is expected that students will respect the wishes of faculty with regard to the use of electronic devices within the academic environment.

No student shall leave a scheduled exercise because of the absence of the instructor until a reasonable time has passed. By tradition and as a matter of courtesy, a student should wait 10 minutes before leaving.

Authorized Contests, Conferences, and Presentations

Authorized contests, conferences, and presentations are those approved by the Associate Dean for Academic Affairs. Authorized contests are limited to athletic games and matches involving official NYU Shanghai sports teams and to students on the active team roster; and academic competitions sponsored by an NYU Shanghai Academic Dean and to students selected to represent NYU Shanghai at the competition. Authorized conferences are limited to conferences sponsored by an NYU Shanghai Academic Dean and to students selected by NYU Shanghai to attend the conference (this is in addition to any selection process that the conference might have). In some cases limited funding will be available to students selected to attend a conference. Funding is not available to attend conferences to which all qualified NYU Shanghai students did not have an opportunity to apply for selection. Academic Affairs only provides funding for academic conferences; non-academic conferences, including those focusing on leadership, are sponsored through Student Life and do not allow students approved absences from classes. Authorized presentations are limited to those at forums sponsored by an NYU Shanghai Academic

Dean and presenters to those approved by NYU Shanghai. In some cases limited funding will be available to students selected for a presentation.

Credit

Credit for Advanced Placement Examinations

NYU Shanghai does not assign credit for the Advanced Placement (AP) Program (College Entrance Examination Board), the International Baccalaureate (IB) Program, or the results of foreign maturity certificate examinations. In some cases students may be able to substitute a higher level course for an introductory course based on their performance on one of these tests.

Credit for Courses at NYU Shanghai

To receive credit for a course, the student must register before attending, meet the requirements for attendance, and creditably complete all examinations and assignments prescribed by the instructor. For exceptional students, most majors also offer independent study. NYU Shanghai does not permit students to register as auditors.

Students receive credit for any course passed with at least a D or a P grade. Courses may not be used to meet major or minor requirements or as prerequisites for more advanced classes unless a grade of C or higher is earned. This means that grades of P or C- and lower may not be used to meet major or minor requirements or as a prerequisite for more advanced courses.

Restrictions on Receiving Credit (Including Course Repeat Policy)

A student who has taken a course for credit or who has obtained a W in a course is permitted to repeat that course once. Students may not repeat more than two courses during their undergraduate careers. Students may not repeat courses in a designated sequence after taking more advanced courses. The majors determine the sequencing of courses. Students with questions regarding the repetition of courses or course sequences must consult with the particular major offering the course. When a student repeats a course, no additional credit is awarded. Both grades appear on the transcript and are computed in the grade point average.

Students may not be registered at another university at the same time that they are registered in NYU Shanghai.

Credit for Courses at Other Schools and Divisions of New York University

New York University 1000-level graduate courses may be taken with approval of the graduate program and following the practices of that bulletin, and 2000-level graduate courses may be taken with written approval of the instructor. If graduate courses are applied toward the completion of requirements for the baccalaureate degree, no advanced credit is allowed for them in the Graduate School.

It is also possible for students to take courses in other undergraduate divisions of New York University and to have credits for these courses applied to the degree in NYU Shanghai.

Students may take a total of 16 points in other divisions, including any courses for particular minors approved by NYU Shanghai. Students seeking additional non-Core credits beyond the 16-point limit must file a petition with the NYU Shanghai Academic Standards Committee in the Office of Academic Affairs. This requirement applies to students seeking a second or third semester away within the Global Network University. In this case the student would submit a plan for their semester(s) abroad for approval.

Please note that restrictions apply. Courses in other divisions that duplicate the contents of a NYU Shanghai course may not count toward the NYU Shanghai degree. For details, students must check with their advisor before registering for any courses in other divisions. If a course is not approved in advance, students will not receive credit for it. Independent study or internship courses taken in other divisions of the University do not count toward the NYU Shanghai degree. If such courses are taken at schools outside the University, the credit will not transfer to NYU Shanghai.

Also excluded from credit toward the degree are any courses taken in the School of Continuing and Professional Studies.

Credit for Internet and online courses will not be counted toward the baccalaureate degree.

Credit for Transfer Students

NYU Shanghai does not presently accept transfer applicants.

Credit for Non-NYU Study Abroad

Once admitted to NYU Shanghai, students must take all courses on campus or during an approved study abroad semester at one of the University's Global Academic Centers or exchange partners, including those they need or wish to take during the summer. Exceptions are granted only rarely and only for good academic reasons. Requests for a waiver should be made by submitting a petition to the NYU Shanghai Committee on Academic Standards.

Summer Session

Students who elect to take summer courses must take them on campus or at one of the University's Global Academic Centers including NYU New York, NYU Abu Dhabi, or one of the University's study away sites. Exceptions are granted only rarely and only for good academic reasons. Requests for a waiver should be made by submitting a petition to the NYU Shanghai Committee on Academic Standards.

Information about NYU Shanghai summer course offerings is available during the preceding fall and spring terms, as is information about dormitory facilities available to students.

Examinations and Grades

Policies on Examinations

Preamble

The following policies represent an understanding between faculty and student concerning an important but often stressful period, especially at the conclusion of each academic semester and at mid-semester. There should be no expectation that the following points will cover every conceivable situation. The student should anticipate the demands of the exam schedule, plan accordingly and early, and be prepared. The faculty should recognize that the student is encumbered with many tightly orchestrated and intensive obligations during this period over which he or she has no control: expectations should be reasonably consistent with the number of course units and, of course, should be made known to the student well in advance of the final examination period, preferably as part of the course syllabus.

In order to help students plan their time and study optimally for examinations, this document lays out in some detail the policies regarding final and in-term examinations. Instructors are requested to provide notification of the major in-term examinations in the course syllabus. The final examination date is posted early in the semester. It is the responsibility of the student to give his or her instructor sufficient notice and to work with the instructor to reschedule examinations if this is needed.

Definitions

- The university's official final examination period begins on the Monday immediately following the last day of classes and continues through the last day of scheduled final examinations, with the exception of reading day(s).
- Scheduled final examinations are those scheduled by the registrar. An instructor may choose not to fix a schedule for final examination, but instead allow each student to choose the examination time; such exams are called self-scheduled examinations.
- Final examinations can either be comprehensive, covering all course materials, or noncomprehensive, covering only a part of the course.
- Major examinations during the semester are referred to here as in-term examinations.

In-term Examinations

In-semester exams may only occur during regularly scheduled class hours. This means that exams may not run longer than the 75-minute class period for the course and that instructors may not schedule alternative exam times. It is possible to administer an exam

that takes longer than scheduled class times if the instructor divides the test into two parts and students take them over different class dates.

The only exception to the in-semester testing policy is for students with identified learning disabilities that cause them to need additional time for tests.

Student may not be required to take more than two full-period in-class or out-of-class examinations on the same day. It is the responsibility of the student to notify the instructors in a timely manner of his/her circumstance so that appropriate accommodations can be made.

Final Examinations

1. All scheduled final examinations are held at the end of the semester during the University's official final examination period. The last day of a class is not normally used for a final examination. Comprehensive final examinations are not required for each course, but are given at the option of the instructor. The reading day and weekend preceding the examination days are not used for examination purposes of any kind, unless a student chooses (and the instructor agrees) to take a self-scheduled examination during this time. Non-comprehensive final examinations or final projects (but not both) are allowed during this final examination period only in courses that do not give a final comprehensive examination.
2. Instructors return all work assigned no later than the last regular day of classes in courses for which there is a final examination. In cases when this is not possible, an answer key, solution sets or equivalent feedback should be provided unless the final examination will not cover material in work that has not been returned.
3. No other coursework, including laboratory or studio work, will be due during the final examination period unless it is assigned in advance and in lieu of the course's final examination. Regardless of whether there is a final examination in the course, no classes other than review sessions are held during the final examination period. Review sessions are scheduled for optimal attendance, and a serious effort should be made to accommodate students who cannot attend. In appreciation of the time required to prepare for final examinations, no other examinations, portfolio reviews, critiques or juries shall be scheduled for the last class day of a course with a final examination.
4. Instructors do not exert or submit to pressures to move an examination so that people can leave earlier nor pressure students to take an examination on a reading day or weekend preceding examinations.
5. No student is required to take more than two scheduled examinations that start within a 25-hour period. A student who has more than two examinations

- scheduled within a 25-hour period or has two examinations scheduled at the same time should first contact the instructors of the courses for assistance in resolving conflicts. If the problem cannot be resolved by that means, the student should contact the Associate Dean for Academic Affairs.
6. Take-home final examinations shall be given for any 24-hour period of the student's choosing during the final examination period.
 7. Students are expected to present themselves at the place assigned at the start of the examination; late arrival will reduce the total time a student has to complete the examination, unless the instructor's course policy indicates otherwise. Instructors reserve the right to require attendance within a specific time period. Students who miss an examination with a reasonable excuse and wish to petition for a make-up final examination should check with the instructor.
 8. Any student may review his or her corrected, graded final examination in the presence of an instructor or a teaching assistant. Any controversy arising from this review is dealt with in accordance with the University procedure for the appeal of grades and academic actions. A final examination that is not returned to a student will be kept available until the end of the next semester for review. In the event that the instructor or teaching assistant is not available for the review, the responsibility shall rest with the major leader of the instructor offering the course or his or her designee. Since instructors return all work assigned before the final examinations, they are not responsible for retaining unclaimed coursework.
 9. Concerns related to final examination, complaints about violations of the final examination policy or alterations of the final examination schedule should be directed to the students' Academic Advisor or to the Associate Dean for Academic Affairs.

NYU Shanghai Student Guidelines for Taking Exams

NYU Shanghai has developed the guidelines below for in-class tests worth 10% or more of the final grade in a class so that students will share a uniform test taking experience that creates a quiet, less stressful, fair test site.

1. Tests that are worth more than 10% of the final grade will be held in a room or rooms that provide at least twice as many seats as students enrolled in the class.
2. Students follow an assigned seating chart for the test that randomizes the classroom and seating assignments for students. Students are seated in *every other seat* so they are not in close proximity to others taking the same exam.
3. The tests are pre-marked with each student's name and assigned seat.
4. Students should arrive at the classroom *at least 5 minutes* before the exam starts.
5. Students have to leave their backpacks/purses/bags/laptops at the front of the room – taking with them to their seat only something to write with (no pencil cases are allowed). (*If other materials are permitted, the instructor will inform the proctors of specifically what is allowed.*)

6. Students must leave all hats, coats, and jackets at the front of the room as well. Students that normally wear scarfs for faith or cultural reasons may do so but must alter to expose ears.
7. A bottle of water is permissible; food/gum/candy is not.
8. Any student who is NOT taking the exam should not be in the test room.
9. Proctors are not responsible for supplying any test-taking materials (pencils, calculators, etc.) to students who have arrived unprepared for the exam.
10. All mobile phones should be switched off and left at the front of the room, so that students do not have access to them during the exam. *If a student is found with their mobile phone with them during the exam, this will be considered a violation of the exam guidelines.*
11. A quiet test environment must be maintained. Students are not allowed to speak to each other (even to request to borrow a pencil from another student.) If students need to speak, they should raise their hand and wait for the proctor to come over to them and help them with whatever question or problem they have.
12. The start time and finish time will be written on the board at the front of the room. Updating the time remaining (in 15 minutes intervals) throughout the exam on the board, so that students can gauge their progress and manage their time during the exam.
13. Any student arriving late will be permitted to take the exam, but they will finish at the pre-arranged time and will not be given any extra time.
14. Students must sit in their assigned seat with their named test. They have to show a proctor their NYU ID if asked.
15. Students in the wrong test room must go to the correct test room even if that means they start the test late.
16. Students cannot move their seat. There needs to be enough space between seats so that the purpose of the *every other seat* protocol is met.
17. Bathroom breaks are permitted only in what the proctor deems is an emergency. When permitted, the back-up/relief proctor will escort the student to and from the bathroom. When this is not possible, the proctor will note the time that the student left the exam room, and when they returned.
18. If a student finishes an exam early, they may leave the room once they have turned in their exam papers. They will not be readmitted once this occurs.
19. In the last 15 minutes of the exam, the remaining time left will be updated in 5 minute intervals.
20. Once time is up, the exam is finished and students must stop working. *The proctor will make a note of individuals who did not stop working when told to and report this to the instructor.*
21. All exam materials (answer sheets, scratch paper, test question paper) are to be collected by the proctor. Students should not leave the room with any test materials.

Penalties for Students Violating the Protocols

- The penalty for the first violation of test protocols (sitting in wrong seat, in possession of non-approved test taking materials, talking, failure to show their NYU ID when requested, etc.) is a letter grade reduction on exam.
- Additional violations or refusal to comply with protocols will lead to additional penalties.
- Test protocol penalties are independent of and in addition to penalties for academic integrity violations. Both types of penalties are applied in as confidential a manner as circumstances permit.

Makeup Examinations

When final examinations are missed because of illness, a doctor's note must be presented to the instructor, who decides if a request for a grade of Incomplete is warranted. See below for an outline of procedures for taking makeup examinations.

As noted under "Grades," below, a student who cannot take the final examination in a course at the regularly scheduled time may be given the grade of Incomplete. The student must discuss the reasons for missing the examination with the instructor and, in the case of illness, must submit a doctor's note to the instructor. The student must ask the instructor to give a grade of Incomplete. Incompletes are not awarded automatically. The time and place of any makeup examinations are set by the instructor or the major leader.

Incomplete grades received because of a missed final examination must be removed within the semester following the one in which the Incomplete was received. In the case of students who are out of attendance, such grades must be removed within one year after the end of the course concerned. An Incomplete is a temporary grade, if it is not replaced within the time limit by a grade submitted by the course instructor it becomes an F or the default grade indicated by the instructor and is computed in the grade point average. (Regarding the removal of Incompletes received for missed work other than final examinations, see under "Grades" and "Incompletes," below.)

Grades

Students may obtain their final grades for each semester on Albert via NYUHome at home.nyu.edu. The parents or guardian of a student who is a minor (under 18 years of age) may, on a written request to the Office of the University Registrar, obtain the student's grades at any time.

The following symbols indicating grades are used: A, B, C, D, P, F, and W. The following symbol indicates incomplete work: I. Only grades of A, B, C, D, or F earned in any New York University course while matriculated in NYU Shanghai, or earned in any of NYU Shanghai's courses (courses suffixed by "-SH") while matriculated in another division of the University, are computed in the average. The following grades may be awarded: A, A-, B+, B, B-, C+, C, C-, D+, D, F. In general, A indicates excellent work, B indicates good work, C indicates satisfactory work, and D indicates passable work and is

the lowest passing grade. F indicates failure. The weights assigned in computing the grade point average are as follows:

A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
F	0.0

Computing the Grade Point Average

The grade point average can be obtained by determining the total of all grade points earned (quality points) and dividing that figure by the total number of credit hours completed (quality hours). For example: A student who has completed 8 points of A (4.0), 4 points of B (3.0), and 4 points of C (2.0) has a grade point average of 3.25. This is obtained by adding 8 (points of A) x 4.0 (point value of A), 4 (points of B) x 3.0 (point value of B), and 4 (points of C) x 2.0 (point value of C), which totals 52 (the total of all grade points earned), and then by dividing 52 by 16 (the total number of credit hours completed). This gives the grade point average of 3.25.

Policies on Assigned Grades

Once a final grade has been submitted by the instructor and recorded on the transcript, the final grade cannot be changed by turning in additional course work.

To appeal an assigned grade (only final semester grades are assigned grades, mid-term and individual assignment and paper grades are not appealable) the student should first consult with the instructor who assigned the grade to discuss the grading requirements for the course and how the grade was determined. If the student is not satisfied with the outcome of the discussion and wishes to appeal the grade further, a formal written appeal should be submitted to the Associate Dean for Academic Affairs within one month of the date the grade was posted. An independent review of the grade will be undertaken. All of the student's work will be reviewed to clarify how the grade was determined and to ensure the grade is consistent with academic guidelines and policies. The result of the appeal may be that the grade is lowered, raised, or stays the same. The decision of the Associate Dean for Academic Affairs in matters related to a course grade is final.

In the case of a course that has been repeated, both grades are recorded on the transcript but only the second is computed in the grade point average.

The grades for courses taken abroad in one of New York University's programs or at one of the exchange sites are recorded on the transcript and are also included in the grade point average. The grades for graduate and professional courses taken at other divisions in the University are included in the grade point average, provided that permission to enroll is obtained prior to registration for the courses.

Not included in the undergraduate grade point average are grades for work done at institutions outside NYU's Global Network.

Grade of P

The grade of P (Pass) indicates a passing grade (A, B, C, or D) in a course taken under the pass/fail option. It is also used to indicate nongraded courses. The grade of P is not computed in the average. The grade of F under the pass/fail option is computed in the average. For more information and procedures to obtain the pass/fail option, see the section "Pass/Fail Option," below.

Grade of W

The grade of W indicates an official withdrawal of the student from a course in good academic standing. Please see "Change of Program" and "Withdrawing from Courses," above, for information on the regulations and procedures for withdrawing officially from courses.

Grade of I

The grade of I (Incomplete) is a temporary grade that indicates that the student has, for good reason, not completed a single requirement or a small amount of the course work, and that there is the possibility that the student will eventually pass the course when all of the requirements have been completed. A student must ask the instructor for a grade of I, present documented evidence of illness or the equivalent, clarify the remaining course requirements with the instructor, and receive approval from the Associate Dean for Academic Affairs.

The incomplete grade is not awarded automatically. It is not used when there is no possibility that the student will eventually pass the course. If the course work is not completed and a grade submitted by the course instructor before the statutory time for making up incompletes has elapsed, the temporary grade of I becomes an F or the default grade indicated by the instructor and is computed in the student's grade point average.

Incompletes

All work missed in the fall term must be made up by the end of the following spring term. All work missed in the spring term or in a summer session must be made up by the end of the following fall term. Students who are out of attendance in the semester following the one in which the course was taken have one year to complete the work.

Students should contact their advisor for an Extension of Incomplete Form, which must be approved by the instructor. Extensions of these time limits are rarely granted.

Independent Study

Most majors offer independent study courses for students with exceptional qualifications. In these courses, the work is planned specifically for each student. Independent studies should build on previous course work, not replace existing courses, and may not substitute for major core requirements. They may count for general elective, minor, or major elective requirements.

Independent study courses allow the student to work independently with faculty supervision and counsel. The courses typically carry variable credit of 2 or 4 points each term. They are normally limited to upper-class majors but may be open to other well-qualified upper-class students. To register for independent study, a student must have written approval of the Associate Dean for Academic Affairs.

The result of the independent study course should be a paper or other objective, tangible evidence of completion of the work. The individual majors may grant credit for not more than 8 points of independent study for work approved in advance. In general, students are not permitted to take more than 12 points of independent study and/or internship, and no more than 8 points may be taken in any one major. Internships and/or independent study courses taken in other divisions of the University or at other universities do not count toward the College degree. More specific information can be found under the individual major descriptions.

Leave of Absence

General Leave

If a student and their advisor agree that a leave of absence is the best way to proceed given the student's situation, the advisor will assist in the withdrawal from the semester and extended time for a leave of absence. A student needs to make an appointment with their advisor to discuss his or her particular situation and review the terms of the leave of absence.

A student may request a leave of absence for the fall/spring semester, and must make his or her request prior to the end of the third week of the semester he or she wishes to be on leave. A student who requests a leave after that deadline or who has been out of attendance without first being granted a leave must apply for readmission. Also note that leaves are not granted retroactively for past semesters.

There are no leaves of absence for the summer and January terms, as enrollment during these terms is not required to maintain matriculation in NYU Shanghai.

A student granted a leave within the deadline does not have to make a formal application for readmission as long as he or she returns to the College within the agreed-upon time (a

maximum of two semesters during a student's academic career). Students who attend another college during the leave may not transfer the credit to NYU Shanghai.

Students are advised to inquire how the leave of absence may affect their scholarship and financial aid award and should contact the Financial Aid Office. If students are on probation when the leave is granted, they will return on probation. Students out of attendance who did not apply for a leave and who wish to return to the College must apply for readmission. (See the Admission section of this Bulletin.)

Students on leave are expected to absent themselves from campus during their leave of absence. They may not audit classes, hold a campus job, participate with a student club or organization, attend University events, and may only visit campus for scheduled appointments with University faculty or staff.

Psychological and Medical Leave

If a student and a counselor or a physician agree that a psychological or medical leave of absence is the best way to proceed given the situation, the counselor or physician should make a recommendation to the Associate Dean for Academic Affairs. A student needs to complete the Leave of Absence Petition form, which can be obtained at the Office of Academic Affairs. Leave of absence petitions are accepted and reviewed on a rolling basis throughout the academic year.

A Certification of Readiness to Return to School from a Leave of Absence form should be completed by the counselor/therapist or physician, who needs to state clearly that the student is ready to return and that NYU Shanghai is a suitable environment in which to continue his or her academic work. The student must also schedule an appointment with a counselor/therapist or physician at the NYU Shanghai Student Health Center prior to receiving approval to return. A student granted a leave does not have to make a formal application for readmission as long as he or she returns to NYU Shanghai within the agreed-upon time (a maximum of two semesters during a student's academic career). Students who attend another college during the leave may not transfer the credit to NYU Shanghai.

Students are advised to inquire how the leave of absence may affect their scholarship and financial aid award and should contact the Office of Financial Aid. If students are on probation when the leave is granted, they will return on probation. Students out of attendance who did not apply for a leave and who wish to return to the College must apply for readmission. (See the Admission section of this Bulletin.)

Students on leave are expected to absent themselves from campus during their leave of absence. They may not audit classes, hold a campus job, participate with a student club or organization, attend University events, and may only visit campus for scheduled appointments with University faculty or staff.

Pass/Fail Option

Students may elect one pass/fail option each term, including the summer sessions, for a total of not more than 32 points during their college career. The choice must be made before the completion of the 9th week of the term (fourth week of a six-week summer session); after that time, the decision cannot be initiated or changed. No grade other than P or F will be recorded for those students choosing this option. P includes the grades of A, B, C, and D and is not counted in the average. F is counted in the average.

The pass/fail option is not acceptable in the major, the minor, or any of the courses taken in fulfillment of the Core Curriculum requirements. Students considering the pass/fail option in their area of study or in required preprofessional courses should consult with their advisor about the effect of such grades on admission to graduate and professional schools. Students who change their majors may not be able to use courses taken under the pass/fail option to satisfy the requirements of their new majors. The form for declaring the pass/fail option may be obtained from the student's advisor.

Petitions

The NYU Shanghai Academic Standards Committee will consider petitions of students to waive requirements or modify policies and regulations of NYU Shanghai. Students should be aware that only very exceptional cases, supported by valid and documented reasons, will be considered. After deliberation, the Committee's decisions on such matters are final. Petition forms may be obtained in the Office of Academic Affairs.

2. Placement Examinations, Degree Progress, and Transcripts

Placement Examination for Chinese Language

Testing and Placement

Entering students that are not native speakers of Mandarin take a written proficiency/placement examination test in Mandarin Chinese prior to their first registration in the College. Tests can result either in an exemption from the Chinese-language requirement or in placement into the appropriate-level course. Placement into a lower-level course means that the student must continue his or her studies of Chinese until completion of the intermediate two level of that language or achievement of equivalent competency. In some cases, adjustments in placement may be made during the first weeks of class. Information on placement testing can be obtained from the Academic Resource Center.

Testing Exemptions

The proficiency/placement test is required of all entering students with the following exceptions: students who have not previously studied Chinese and students whose secondary schooling was in Mandarin.

Placement Examination for English Language

Testing and Placement

Entering students that are not native speakers of English take a written proficiency/placement examination test in English prior to their first registration in the College. Tests can result either in an exemption from the English language courses or in placement into the appropriate-level course. Placement into the lower level course means that the student must complete that course and the other English language course in their first year. In some cases, adjustments in placement may be made during the first weeks of class. Information on placement testing is communicated to matriculating students prior to freshmen orientation.

Testing Exemptions

The proficiency/placement test is required of all entering non-native English speakers with the following exceptions: students whose schooling was entirely in English.

Quantitative Reasoning

All students will take a math course based on placement from evaluating their quantitative background. A student who wish to place into a higher level math class will have the opportunity to take a math placement examination during undergraduate orientation.

Degree Progress

All students have access to their Degree Progress Report, as generated by the Office of the University Registrar, on Albert via NYUHome at home.nyu.edu. The Degree

Progress Report is a Student Information System (SIS) accounting of completed and remaining degree requirements.

Transcripts of Record (subject to change based on new electronic transcript)

Unofficial transcripts are available on Albert, NYU's Web-based registration and information system. Albert can be accessed via [NYUHome](#).

Students requiring a stamped and sealed copy of their New York University records should request an official copy of their University transcript from the Office of the University Registrar. Requests for official transcripts require the signature of the student/alumnus requesting the transcript, unless the student/alumnus has a valid NetId.

Current students and graduates with a valid NYU NetId (able to access NYUHome/Albert) who attended NYU in or after 1990 can request an official transcript from the Albert Student Center. The Official Transcript form can be found under the My Academics section of the Student Center.

Before completing their transcript request, current students should check to ensure that all their grades have been posted. Recent graduates should check to ensure that their degree has been recorded.

Any transcript request that requires any special handling must go through the Secure Online Transcript Request Form (see above) and cannot be requested on Albert. Special handling includes: (1) sending transcripts by express mail; (2) transcripts sent to the student or alumnus in separate sealed envelopes addressed to admissions offices of other universities; (3) including additional documents to be sent along with the NYU transcript.

There is never any charge for academic transcripts. Transcripts cannot be produced for anyone whose record has been put on hold for an outstanding University obligation.

Rank in Class

NYU Shanghai neither records nor reports students' class, college, or department rank. In an institution where students' educational experiences are so varied, class rank is not a meaningful way to measure achievement. An explanatory note to that effect is attached to the transcript.

Requesting Enrollment Verification

Students can view/print their own enrollment certification directly from Albert using the integrated National Student Clearinghouse student portal. This feature can be accessed from the "request enrollment verification" link in the My Academics section of the Student Center. Eligible students are also able to view/print a Good Student Discount Certificate, which can be mailed to an auto insurer or any other company that requests proof of status as a good student (based on the cumulative GPA).

Verification of enrollment or graduation may also be requested by submitting a signed letter with the following information:

- University ID number
- Current name and any name under which the student or graduate attended NYU
- Current address
- Date of birth
- School of the University attended
- Dates attended
- Date of graduation
- The full name and address of the person or institution to which the verification is to be sent

The Registrar accepts requests for certification by e-mail from the student's NYU account at shanghai.registrar@nyu.edu.

Arrears Policy

The University reserves the right to deny registration and withhold all information regarding the record of any student who is in arrears in the payment of tuition, fees, loans, or other charges (including charges for housing, dining, or other activities or services) for as long as any arrears remain.

Diploma Arrears Policy

Diplomas of students in arrears will be held until their financial obligations to NYU Shanghai are fulfilled and they have been cleared by the Bursar. Graduates with a diploma hold may contact the Office of the Bursar to clear arrears or to discuss their financial status at NYU Shanghai.

Diploma Application

Students may officially graduate in September, January, or May. The all-University Commencement ceremony is held in May. NYU Shanghai holds a baccalaureate ceremony in May. Students must apply for graduation on Albert, and they must be enrolled for either course work, leave of absence, or maintenance of matriculation during their final semester.

To graduate in a specific semester, students must apply for graduation within the application deadline period indicated on the calendar available at the [Office of the University Registrar's Web page](#). It is recommended that students apply for graduation no later than the beginning of the semester in which they plan to complete all program requirements. Students who do not successfully complete all academic requirements by the end of that semester must reapply for graduation for the following cycle.

3. Academic Standards and Discipline

Academic Standards

The NYU Shanghai Academic Standards Committee reviews student records throughout the academic year. All of its actions are based on the grades to date at the end of the term.

Academic Warning

Students with cumulative grade point averages of 2.0 to 2.25 will receive an academic warning letter reflecting the committee's specific recommendations for achieving an appropriate standard for academic performance. Students who are on academic warning are invited and encouraged to participate in the Academic Support Program to support them in improving their GPA.

Academic Probation

Any student whose record is deemed unsatisfactory will be placed on academic probation and will be so informed by letter. A record will be deemed unsatisfactory if, in any semester, the cumulative or semester grade point average falls below 2.0 or if it fails to show steady and substantial progress toward the degree. Steady and substantial progress toward the degree entails the completion, with satisfactory grades, of more than half of the courses (and points) for which a student registers in any semester. In addition, it entails satisfactory progress in the student's major.

Failure to satisfy the conditions of probation will result in further academic sanctions and possibly dismissal from the University. The conditions usually require that the student (a) achieve a grade point average of at least 2.0 during the term he or she is on probation, (b) not receive any grade below a C or any grade of I, and (c) not withdraw from any course without securing the permission of the NYU Shanghai Academic Standards Committee prior to the withdrawal. Students on academic probation are also required to have a special probation interview with their advisor to receive registration clearance for the next semester. More specific requirements may be imposed.

The NYU Shanghai Academic Standards Committee may summon students with unsatisfactory records to discuss their problems and to determine whether and under what conditions they may continue at NYU Shanghai. In special circumstances, the committee may recommend to the Dean that students may be granted or placed on leave for a period not to exceed two semesters.

Students on academic probation may not engage in any co-curricular activities and may not hold office in these clubs without the approval of the NYU Shanghai Academic Standards Committee.

Students on academic probation should be aware that they are usually ineligible for financial aid.

Students who are on academic probation are required to participate in the Academic Support Program.

Academic Dismissal

Students dismissed from the University for poor academic performance will be informed via e-mail two to three weeks after their most recent grades are posted for the enrolled semester. Students who have paid tuition for the next term at the time of dismissal will receive a full refund of tuition and fees.

Academic Integrity

NYU is a "community of the mind." Its students, faculty, and staff all share the goal of pursuing truth through free and open inquiry, and we support one another's endeavors in this regard. As in any community, membership comes with certain rights and responsibilities. Foremost among these is academic integrity. Cheating on an exam, falsifying data, or having someone else write a paper undermines others who are "doing it on their own"; it makes it difficult or impossible to assess fairly a student's interest, aptitude, and achievement; and it diminishes the cheater, depriving him or her of an education. Most important, academic dishonesty is a violation of the very principles upon which the academy is founded. For this reason, violations of these principles are treated with the utmost seriousness.

This policy sets forth core principles and standards with respect to academic integrity for students at New York University. Each school at New York University may establish its own detailed supplemental guidelines for academic integrity, consistent with its own culture, and consistent with the University-wide general guidelines described in this document.

At NYU, a commitment to excellence, fairness, honesty, and respect within and outside the classroom is essential to maintaining the integrity of our community. By accepting membership in this community, students take responsibility for demonstrating these values in their own conduct and for recognizing and supporting these values in others. In turn, these values will create a campus climate that encourages the free exchange of ideas, promotes scholarly excellence through active and creative thought, and allows community members to achieve and be recognized for achieving their highest potential.

In pursuing these goals, NYU expects and requires its students to adhere to the highest standards of scholarship, research and academic conduct. Essential to the process of teaching and learning is the periodic assessment of students' academic progress through measures such as papers, examinations, presentations, and other projects. Academic dishonesty compromises the validity of these assessments as well as the relationship of trust within the community. Students who engage in such behavior will be subject to review and the possible imposition of penalties in accordance with the standards, practices, and procedures of NYU and its colleges and schools. Violations may result in failure on a particular assignment, failure in a course, suspension or expulsion from the University, or other penalties.

Faculty are expected to guide students in understanding other people's ideas, in developing and clarifying their own thinking, and in using and conscientiously acknowledging resources - an increasingly complex endeavor given the current environment of widely available and continually emerging electronic resources. In addition, students come to NYU from diverse educational contexts and may have understandings regarding academic expectations that differ from those at NYU. NYU values and respects all academic traditions; however, while at NYU, students are expected to adhere to the norms and standards of academic integrity espoused by the NYU community and will be assessed in accordance with these standards. Students should ask their professors for guidance regarding these standards as well as style guide preferences for citation of sources for assignments in their courses.

Following are examples of behaviors that compromise the academic and intellectual community of NYU and are unacceptable.

1. Plagiarism: presenting others' work without adequate acknowledgement of its source, as though it were one's own. Plagiarism is a form of fraud. We all stand on the shoulders of others, and we must give credit to the creators of the works that we incorporate into products that we call our own. Some examples of plagiarism:

- a sequence of words incorporated without quotation marks
- an unacknowledged passage paraphrased from another's work
- the use of ideas, sound recordings, computer data or images created by others as though it were one's own

2. Cheating: deceiving a faculty member or other individual who assess student performance into believing that one's mastery of a subject or discipline is greater than it is by a range of dishonest methods, including but not limited to:

- bringing or accessing unauthorized materials during an examination (e.g., notes, books, or other information accessed via cell phones, computers, other technology or any other means)
- providing assistance to acts of academic misconduct/dishonesty (e.g., sharing copies of exams via cell phones, computers, other technology or any other means, allowing others to copy answers on an exam)
- submitting the same or substantially similar work in multiple courses, either in the same semester or in a different semester, without the express approval of all instructors
- submitting work (papers, homework assignments, computer programs, experimental results, artwork, etc.) that was created by another, substantially or in whole, as one's own
- submitting answers on an exam that were obtained from the work of another person or providing answers or assistance to others during an exam when not explicitly permitted by the instructor
- submitting evaluations of group members' work for an assigned group project which misrepresent the work that was performed by another group member
- altering or forging academic documents, including but not limited to admissions materials, academic records, grade reports, add/drop forms, course registration forms, etc.

3. Any behavior that violates the academic policies set forth by the student's NYU school, department, or division.

New York University Shanghai Honor Code (adopted from the CAS Honor Code)

As a student in New York University Shanghai, you belong to a community of scholars who value free and open inquiry. Honest assessment of ideas and their sources is the foundation of what we do.

Our University is a community of mutual trust and respect in which personal prejudice has no part in the critical evaluation of ideas. It is a place where differences of opinion can be subjected to deliberate and reasonable examination without animus.

As scholars, it is therefore as a matter of honor and good repute that we each commit ourselves to assuring the integrity of our academic community and of the educational pursuits we undertake together.

As a student in NYU Shanghai, I pledge that:

- I will perform honestly all my academic obligations. I will not represent the words, works, or ideas of others as my own; will not cheat; and will not seek to mislead faculty or other academic officers in their evaluation of my course work or in any other academic affairs.
- I will behave with decorum and civility, and with respectful regard for all members of the University—faculty, staff, and fellow students—our guests, and members of our wider communities.
- I will abide by NYU Shanghai and by the University rules of conduct and policies on academic integrity and by the special requirements of any individual course of study or other academic activity.
- I will endeavor earnestly to uphold the values, standards, and ideals on which our University community depends and call on others to do so.

Procedures and Sanctions

The penalty for academic dishonesty is severe. The following are the procedures followed at NYU Shanghai:

1. If a student cheats on an examination or in laboratory work or engages in plagiarism, appropriate disciplinary action should be taken. The following actions may be taken:
 - a. The faculty member, with the approval of the Associate Dean for Academic Affairs, may reduce the student's grade or give the student an F in the course.
 - b. If after lowering the grade or assigning an "F", the faculty member or the Associate Dean for Academic Affairs believes a more severe penalty (i.e., probation,

suspension, or expulsion) is warranted, they can refer the case to the Dean of Arts and Sciences or his or her representative for further action.

2. In all cases of either (a) or (b), the Associate Dean for Academic Affairs will inform the student of any action in writing and send a copy of this letter to the Dean of Arts and Sciences. The letter will include the nature of the offense, the penalty, and the right of the student to appeal such penalty. A copy of the letter will be kept in a confidential file and not in the student's major file. The Dean of Arts and Sciences' office copy will also be kept in a confidential file. (The professor and/or the Associate Dean for Academic Affairs will meet with the student and discuss the nature of the offense and the action taken.)
3. For cases involving a first offense at NYU Shanghai, the Associate Dean for Academic Affairs will send the student by e-mail a notice that a second offense will result in a one-semester suspension or a more severe penalty. (The student is also called in to discuss the offense and review the consequences of the disciplinary action.)
4. For cases involving a second offense, the Dean of Arts and Sciences will proceed as follows:
 - a. Upon receiving a second Associate Dean for Academic Affairs letter concerning a given student, the Dean will convene a three-member ad hoc committee, with no member being from the major involved, to examine the evidence. This ad hoc committee will consider if there are reasonable grounds to believe that cheating/plagiarism has occurred and if so, will affirm the suspension penalty. It will report its conclusion to the Dean within three business days.
 - b. If the committee affirms the suspension, the Dean will send the student by e-mail a suspension letter within two business days of receiving the report. The letter will advise the student of his or her right to appeal. The student will have two business days from the letter's delivery to request an appeal of the suspension as provided in Section 5 (below). The suspension will ordinarily be stayed during the pendency of appeal.
 - c. If the committee does not affirm the suspension, the report will be kept on file for a one-year period.
5. The student in all cases has the right to appeal to the Dean of Arts and Sciences. In the event of an appeal, the Dean will elicit a written complaint from the faculty member and proceed as described above.

Discipline

Students are expected to familiarize themselves and to comply with the rules of conduct, academic regulations, and established practices of the University, NYU Shanghai, and any study away site or portal campus as stated in the Discipline Procedures available [here](#). If, pursuant to such rules, regulations, or practices, the withdrawal of a student is required before the end of the term for which tuition has been paid, a refund will be made according to the standard schedule for refunds. Below is a summary of the offenses for which students may be subject to disciplinary charges by the NYU Shanghai Committee on Student Discipline:

1. False representation or forgery of academic documents
2. Deliberate destruction, theft, or unauthorized use of laboratory data, research materials, computer resources, or university property
3. Disruption of an academic event
4. Actual or threatened violence or harassment

Depending on the seriousness of the offense, the following penalties may be imposed after a hearing by the NYU Shanghai Committee on Student Discipline:

Censure

Written reprimand for violation of a specified regulation, including the possibility of more severe disciplinary sanction in the event of a subsequent violation of any University regulation within a period of time stated in the letter of reprimand.

Disciplinary Probation

Suspension of privileges or exclusion from participating in extra-curricular University activities as set forth by the NYU Shanghai Committee on Student Discipline for a specified period of time.

Suspension

Exclusion from classes, as well as suspension of privileges and exclusion from other activities, as set forth in the notice of suspension for a definite period of time. A student who has been suspended and who is found "not guilty" shall be allowed full opportunity to make up whatever work was missed because of the suspension.

Dismissal

Termination of student status for an indefinite period. The conditions for readmission, if any are permitted, shall be stated by the committee in the order of dismissal.

If, as a result of disciplinary action, the withdrawal of a student is required before the end of the term for which tuition has been paid, a refund will be made according to the standard schedule for refunds.

Student Grievance

Students in NYU Shanghai are referred to the "Student Grievance Procedure" applicable to all the schools of New York University as found in the NYU Student's Guide. NYU Shanghai adheres to all articles of the Student Grievance Procedure.

4. University Policies and Campus Safety

A. Privacy of Student Records

NYU Shanghai is fully committed to the protection of the privacy of student records. To assist with the guarding of this privacy, the University complies with the United States Family Educational Rights and Privacy Act (FERPA). This specifically means that any education records maintained by the University and directly related to students — such as grades, transcripts, and test scores — will not be released to others, *including parents or guardians*, without the student's consent, except as provided by United States federal regulations.

Education records refers to any record or document containing information directly related to a student (including computerized and electronic files, audio and video tape, photographic images, film, email, etc.) and is not limited to hard-copy documents or to a file with a student's name on it.

Family Educational Rights and Privacy Act

The Family Educational Rights and Privacy Act (FERPA) was enacted by the United States Congress to protect the privacy of students' education records, to establish the rights of students to inspect and review their education records, and to provide students with an opportunity to have information in their records corrected which is inaccurate, misleading, or otherwise in violation of their rights of privacy. FERPA also permits the disclosure by an institution without a student's prior consent of so-called "directory information" (see definition below), and of other personally identifiable information under certain limited conditions. Students have the right to file complaints with the United States Department of Education's Family Policy Compliance Office concerning alleged failures by an institution to comply with FERPA.

NYU Shanghai and NYU have designated the following student information as "directory information:"

Name, dates of attendance, NYU school or college, class, previous institution(s) attended, major field of study, full- or part-time status, degree(s) conferred (including dates), honors and awards (including dean's list), past and present participation in officially recognized activities (including positions held and official statistics related to such participation and performance), email address, and NetID. Important: See notes (1) and (2) below.

1. Email address and NetID are directory information for internal purposes only and will not be made available to the general public except in specified directories from which students may opt out.

2. Under United States federal law, address information, telephone listings, and age are also considered directory information for military recruitment purposes. Address refers to "physical mailing address" but not email address.

FERPA governs the release of personally identifiable information to both external and internal parties, including other University employees, parents, and government agents. The NYU Shanghai and NYU FERPA Guidelines (accessible as indicated below) describe the circumstances and procedures governing the release of information from a student's education records to such parties.

Disclosure of Personally Identifiable Information

Among other exceptions authorized by FERPA, prior consent of the student is not needed for disclosure of directory information or for disclosure to school officials with a legitimate educational interest in access to the student's educational record. School officials having a legitimate educational interest include any University employee acting within the scope of her or his University employment, and any duly appointed agent or representative of the University acting within the scope of her or his appointment. In addition, the University may, at its sole discretion, forward education records to the officials of another institution (a) in which a student seeks or intends to enroll if that institution requests such records, or (b) if the student is enrolled in or receiving services from that institution while she or he is attending NYU Shanghai or NYU. Other exceptions are listed in the NYU Shanghai and NYU [Guidelines for Compliance with FERPA](#).

Additional Information for Students about Records Access

Students may obtain additional information about access to their records from the NYU Shanghai and NYU Guidelines for Compliance with FERPA. The [Guidelines may be viewed online](#), or you can contact the [NYU Shanghai registrar](#). Students should also read the [FERPA Annual Notice to Students](#).

B. Computing and Information Resources Code of Ethics

The ethical principles which apply to everyday community life also apply to computing. Every member of NYU Shanghai has two basic rights: privacy and a fair share of resources. It is unethical for any other person to violate these rights.

Privacy

*On shared computer systems every user is assigned an ID. Nobody else should use an ID without explicit permission from the owner.

*All files belong to somebody. They should be assumed to be private and confidential unless the owner has explicitly made them available to others.

- *Messages sent to other users should always identify the sender.
- *Network traffic should be considered private.
- *Obscenities should not be sent by computer.
- *Records relating to the use of computing and information resources are confidential.
- *Nobody should deliberately attempt to degrade or disrupt system performance or to interfere with the work of others.
- *Loopholes in computer systems or knowledge of a special password should not be used to alter computer systems, obtain extra resources, or take resources from another person.
- *Computing equipment owned by departments or individuals should be used only with the owner's permission.
- *University resources are provided for university purposes. Any use of computing for commercial purposes or personal financial gain must be authorized in advance. Many of the agreements that the university has specifically forbid this activity.
- *Computing and information resources are community resources. Theft, mutilation, and abuse of these resources violate the nature and spirit of community and intellectual inquiry.

System Administration

- *On rare occasions, computing staff may access others' files, but only when strictly necessary for the maintenance of a system.
- *If a loophole is found in the security of any computer system, it should be reported to the system administrator and not used for personal gain or to disrupt the work of others.
- *The distribution of programs and databases is controlled by the laws of copyright, licensing agreements, and trade secret laws. These must be observed.

This code of ethics lays down general guidelines for the use of computing and information resources. Failure to observe the code may lead to disciplinary action. Offenses that involve academic dishonesty will be considered particularly serious.

C. Emergency Temporary Closing of the University

NYU Shanghai has an important commitment to students, parents, sponsors, benefactors and the community. Accordingly, the university will make every attempt to operate normally during severe weather or other emergencies. This includes holding classes, conducting research programs, and operating facilities and services. The university will attempt to operate normally unless such operation represents a clear danger to students, staff or faculty.

There may be occasions when the university community is served best by suspending normal operations. In that event, only the Vice-Chancellor (or the Provost if the Vice-Chancellor is away) has the authority to close the university and to specify those persons or group of persons who are free to leave or refrain from coming to campus.

Standard Operations

Unless the Vice Chancellor announces that the university is closed, everyone is expected to be at work as usual. When the university is in session, faculty members are expected to meet their scheduled classes and other obligations. If a faculty member is unable to meet a scheduled class, he or she should notify the department office and arrange either for a qualified substitute or for a future make-up session.

D. Freedom of Expression

NYU values the freedoms of speech, thought, expression and assembly - in themselves and as part of our core educational and intellectual mission. If individuals are to cherish freedom, they must experience it. The very concept of freedom assumes that people usually choose wisely from a range of available ideas and that the range and implications of ideas cannot be fully understood unless we hold vital our rights to know, to express, and to choose. The University must be a place where all ideas may be expressed freely and where no alternative is withheld from consideration. The only limits on these freedoms are those dictated by law and those necessary to protect the rights of other members of the University community and to ensure the normal functioning of the University.

Rights

On NYU Shanghai's Campus, any member of the NYU Shanghai community may distribute printed material, offer petitions for signature, make speeches, and hold protests or demonstrations outside NYU Shanghai buildings. All such activities must be lawful and peaceful, avoiding acts or credible threats of violence and preserving the normal operation of NYU Shanghai. No event will infringe upon the rights or privileges of anyone not in sympathy with it, and no one will be permitted to harm others, damage or deface property, block access to NYU Shanghai buildings or disrupt classes. The enforcement of these conditions will not depend in any way on the message or sponsorship of the act or event. When guests are invited by a recognized campus organization, they may express their ideas not because they have a right to do so, but because members of the campus community have a right to hear, see, and experience diverse intellectual and creative inquiry. Defending that right is a fundamental obligation of NYU Shanghai. Controversy cannot be permitted to abridge the freedoms of speech, thought, expression or assembly. They are not matters of convenience, but of necessity.

Responsibilities

Freedom of expression must be at once fiercely guarded and genuinely embraced. Those who exercise it serve the NYU Shanghai community by accepting the responsibilities attendant to free expression. NYU Shanghai and University organizations that sponsor invited guests to campus are expected to uphold NYU Shanghai's educational mission by planning carefully to create safe and thoughtful experiences for those involved. Hosts are responsible for the behavior of their guests and should exercise due care to ensure that all participants abide by relevant laws and University policies.

E. Health Insurance and Immunization Policy

All full-time students must be in compliance with NYU Shanghai's Health insurance and immunization requirements. If a student fails to comply, they will not be allowed to register for classes until they are in full compliance. If the student does not receive clearance to register before the registration deadline for the semester, they will not be able to register and take classes until the next semester that they are in compliance. This policy includes first semester freshman entering NYU Shanghai.

F. Human Subjects in Research at NYU Shanghai

The university is committed to the protection of the rights and welfare of human subjects in research investigations conducted under the jurisdiction of the university. The university believes that review independent of the investigator is necessary to safeguard the rights and welfare of human subjects of research investigations. All research involving human subjects is conducted in accordance with federal regulations, including Title 45 of the Code of Federal Regulations, Part 46 (45 CFR 46). Under federal regulations, human subjects are defined as: living individual(s) about whom an investigator conducting research obtains:

- (1) data through intervention or interaction with the individual, or
- (2) identifiable private information.

An Institutional Review Board (IRB) is established under the provost to ensure adequate safeguards. The provost is responsible for the composition of the IRB with respect to: (1) the qualifications of IRB members in terms of educational background and research or other relevant experience, and (2) broad representation of relevant university interests.

This IRB is responsible for reviewing investigational procedures involving human subjects prior to the initiation of the research procedure in reference to (1) the rights and welfare of the individuals involved, (2) the appropriateness of the methods used to obtain informed consent, and (3) the risks and potential benefits of the investigations. The IRB is responsible for determining when additional expertise is required for adequate review and for obtaining that additional expertise. The IRB is further responsible for maintaining records of its review activities and decisions and for ensuring that records of informed consent are developed and kept by investigators where appropriate.

It is the responsibility of investigators who plan to use human subjects in research to obtain written consent from the IRB prior to conducting an investigation involving human subjects. It is the investigator's further responsibility to take whatever steps are determined necessary for the protection of the subjects, and to meet the reporting requirements established by the IRB.

5. Honors and Awards

Matriculated students with superior academic records are honored in various ways, such as by placement on the Dean's Honors List, election to honor societies, and admission to major honors programs.

Additional information may be obtained from a student's adviser and from the Academic Affairs Office.

Honors

Dean's Honors List

A Dean's Honors List is compiled at the end of each academic year, in June. This is an honors roll of matriculated students who have achieved an average of 3.65 or higher for that academic year (September to May) in at least 28 graded points. To be listed, a student must not have any grades of Incomplete or N at the time when the list is compiled. Note that grade point averages are carried to two decimal places (but are not rounded off).

Eligibility for Graduation With Latin Honors

All graded courses taken while enrolled either in NYU Shanghai or in another school of NYU will be used in computing the grade point average on which Latin honors are based. Pass grades are not counted; grades received in courses taken at other institutions are also not counted. The student must also have a clean record of conduct.

The GPA cutoffs for each category are determined by the combined GPA distribution from the preceding academic year, all graduation moments included. The cutoff for summa cum laude is the GPA included within the top 5 percent of the previous year's graduating class. The cutoff for magna cum laude is the GPA included within the next 10 percent of the previous year's class. The cutoff for cum laude is the GPA included within the next 15 percent of the previous year's class. For example, the necessary GPA level for summa cum laude for students graduating in September 2017 will be based on the GPA cutoff for the top 5 percent of the combined graduates from September 2016, January 2017, and May 2017.

Major Honors

Students who have completed at least 64 points of graded work in their major may be awarded degrees with major honors if they complete the designated honors sequence in the major and maintain the requisite grade point average. There are three levels: honors, high honors, and highest honors.

Students seeking admission to and graduation with major honors are expected to have a minimum grade point average of 3.65, both overall and in the major. Majors may exercise some flexibility in admissions, as follows. In rare cases where a candidate for admission to a major honors program falls short of the expected minimum GPA, the

major leader may petition the Associate Dean for Academic Affairs for an exception. In all cases, once admitted, students are expected to maintain the GPA at the stipulated level in order to graduate with departmental honors. Should there be an exceptional circumstance in which the stipulated GPA is not maintained, the ADAA may be petitioned for an exception. If the case is compelling, the latter will inform the registrar's office of the waiver.

Honors programs must, minimally, be a two-term (8-point) experience that includes a capstone research project. The capstone project, which typically culminates in a thesis, should reflect sustained original research over two semesters. The scope and length of a thesis will vary by discipline, but the thesis is typically 40 to 60 pages in length.

All students completing departmental honors must make public presentations of their work, preferably at the NYU Shanghai Undergraduate Research Conference (URC) held at the end of the academic year, or in a major forum (e.g., oral defenses or presentations) held in conjunction with the URC.

Students with double majors in discrete, unrelated disciplines must complete honors programs in each major for which they seek honors. Students with double majors in interdisciplinary or related fields may, if the two majors concur, convene a joint honors committee to establish an interdisciplinary research program of course work that culminates in a single thesis. Similarly, in the case of joint majors, the relevant majors must work out an agreement on the requirements for honors and on the supervision and evaluation of students' theses or projects.

Dean's Award for Scholarship and/or Service

Presented by the Dean of Arts and Sciences to a graduating senior for outstanding accomplishment in either or both of these areas.

Diploma Recipient

While all students walk across the stage to receive their diploma at the Shanghai Diploma Ceremony, a plaque is presented to the senior selected by the Dean of Arts of Sciences to receive a ceremonial diploma on behalf of all the members of the graduating class at Commencement in New York. Selection is made on the basis of scholarship and/or contribution and service to the graduating class and to NYU Shanghai.

Standard Bearer

A plaque is presented to the senior selected by the Dean of Arts of Sciences to carry the NYU Shanghai banner at Commencement. Awarded on the basis of contribution and service to the graduating class and to NYU Shanghai.

Senior Award in Humanities

Awarded to the graduating senior who has excelled in humanities and who has contributed in a noteworthy way to the life of the campus during four years.

Senior Award in Biological and Behavioral Sciences

Awarded to the graduating senior who has excelled in biological and behavioral sciences and who has contributed in a noteworthy way to the life of the campus during four years.

Senior Award in Physical Sciences

Awarded to the graduating senior who has excelled in physical sciences and who has contributed in a noteworthy way to the life of the campus during four years.

Senior Award in Mathematical and Engineering Sciences

Awarded to the graduating senior who has excelled in mathematical and engineering **sciences** and who has contributed in a noteworthy way to the life of the campus during four years.

Senior Award in Social Sciences

Awarded to the graduating senior who has excelled in social sciences and who has contributed in a noteworthy way to the life of the campus during four years.

Junior Scholarship Award

Presented by the dean of NYU Shanghai to a member of the junior class who, in terms of academic excellence, student leadership, personality, and character, embodies the goals and ideals of NYU Shanghai and the hopes, dreams, and personal spirit of its students.

Part Four: Academic Overview

Goal

Ever since Cicero, the Roman statesman, invented the phrase “artes liberales,” the liberal arts and sciences have been the touchstone of excellence in education for all individuals, regardless of their professional aspirations. This is because these studies liberate an individual from narrowly vocational concerns and have been shown to free the mind to be creative. Today, this educational approach focuses on direct and critical engagement with the great ideas of the past and the present, on the development of the essential skills of analysis and communication, and on in-depth knowledge of one or more disciplines. A shared background in the liberal arts and sciences also has the power to transform a diverse group of students into a real community organized around the life of the mind.

Our aim is to give NYU Shanghai students a strong, globally-oriented foundation in the liberal arts and sciences. This curriculum will help students develop the ability to think analytically, read critically, and write effectively. It will also cultivate their creativity in solving problems, their tolerance for ambiguity, and their respect for diversity of opinion and the exchange of ideas. Finally, through the core curriculum, the majors, and international experiences in the NYU Global Network, students will learn to recognize themselves as part of a global community. The crucial role that China plays in that global community will be emphasized throughout the curriculum.

Three unique features define the NYU Shanghai approach and set it apart from most other undergraduate programs:

- A core (or general education) curriculum for the 21st century, one that is truly innovative—since its social and cultural courses are global in their scope, since writing is fully integrated into the curriculum rather than delivered in separate courses unrelated to students’ other studies, and since mathematics and science are taught in a creative way that integrates these disciplines;
- A carefully selected set of majors (or specializations) that capitalize on the world-class strengths of NYU’s research faculty, departments, and programs, as well as on the limitless opportunities that Shanghai presents;
- Access to the NYU Global Network through an unparalleled array of study-abroad opportunities, which are available at NYU sites around the world and which are easily integrated into students’ programs of study.

Program of Study

NYU Shanghai students will take 128 points of coursework to graduate; these courses will be distributed among core general education requirements, major requirements, and electives. Students will typically complete the core curriculum during their first two years and the bulk of their major requirements during their second two years. Students considering some of the STEM majors (Science, Technology, Engineering, and Mathematics), however, may take longer to complete the core courses since they must begin taking required courses in their intended major as early as the first semester.

Orientation

Orientation will be held in Shanghai in August for two weeks prior to the start of the fall semester. The primary goals of this program will be to introduce students to the inquiry-based approach to learning of NYU Shanghai's liberal arts and sciences curriculum, to make students feel more at home both within the classroom and within the larger Shanghai community, and to foster a sense of community among students from diverse places and backgrounds. In addition to informal, non-credit instruction in language and writing, students will benefit from a robust program of complementary activities.

Study Away

Students are expected to spend one semester studying at one of the other campuses in the NYU Global Network. Many of the courses they need for their major are also offered at these other campuses, so that while away from Shanghai students can continue to fulfill many of their major requirements. Students may petition the Academic Standards Committee with a study plan for an additional semester and in rare cases two.

While they are not required, three-week January Term intensive courses will be available to students, as will summer session courses at NYU Shanghai or elsewhere within the Global Network. J-Term, Summer, and course overloads classes incur additional tuition costs for the students that take those classes. Cost of attendance varies between the Global Academic Centers.

Majors and minors/concentrations

NYU Shanghai will offer its students an array of majors and minors/concentrations, which will be phased in over time. Those that will be offered initially are in subject areas where we anticipate the greatest demand, and also in which New York University has world-class faculty, major research strength, and international distinction. These include:

Majors:

- Humanities
 - Humanities
 - Global China Studies
 - Interactive Media Arts
- Science
 - Biology
 - Chemistry
 - Neural Science
 - Physics
- Mathematics
 - Honors Mathematics
 - Mathematics
- Computer Science and Engineering
 - Computer Science
 - Computer Engineering
 - Electrical Engineering
- Social Sciences
 - Business and Finance
 - Business and Marketing
 - Economics
- Self-Designed Honors Major

Minors:

- Molecular and Cell Biology
- Genomics and Bioinformatics
- Business
- Chemistry
- Chinese
- Computer Science
- Economics
- Global China Studies
- Humanities
- History
- Literature
- Philosophy
- Interactive Media Arts
- Mathematics
- Natural Science

- Neural Science
- Physics
- Global Network University Minors
- Portal Campus Minor

Part Five: Core Curriculum Overview

There are five components to the NYU Shanghai core curriculum: Social and Cultural Foundations, Mathematics, Science, Writing, and Language. In each of these areas, the needs of each student will be carefully assessed upon arrival and a program of study will be developed to address them.

1. **Social and Cultural Foundations:** Courses in the Social Foundations and Cultural Foundations sequences will provide students with a thematic framework within which to study influential works of diverse cultures, from the beginnings of history to the present, and from global and interdisciplinary perspectives. Students will reflect on fundamental and enduring questions about what it means to be human and how we as individuals live in society. In conjunction with the writing program (see #4 below), Social and Cultural Foundations courses will teach students to ask critical questions, find unstated assumptions, assess arguments, and offer creative interpretations of the great works and ideas of the past, especially as they live on in the present.

Required courses: Social Foundations and Cultural Foundations each have two components: a) a two-semester survey course, and b) a disciplinary course on China.

Social Foundation: In the two-semester survey course *Global Perspectives on Society*, students will engage in the comparative study of primary works of social thought from across the globe. The course addresses ways that writers in different times and cultures have sought to situate humans within the universe, and to promote ideal standards for human behavior. Each week, students will be expected to engage one or more central texts by an important thinker on the topic. The expectation is that *Global Perspectives on Society* will be taken in the first year.

Students will complete the Social Foundations requirement with a disciplinary course of their choice from the category “Social Science Perspectives on China,” (which may include courses on Chinese political economy, philosophy and society). This course can be taken at any point in a student’s undergraduate career.

Cultural Foundations: In *Global Perspectives on Culture*, also a two-semester course, students will be introduced to works of literature, film, and the visual and musical arts in the major genres, from different periods and traditions (largely in translation), again from a global perspective. The course will be further enhanced by a co-curricular program, in which students and faculty will explore works of artistic expression in the great city of Shanghai. The expectation is that *Global Perspectives on Culture* will be taken in the second year.

Students will complete the Cultural Foundations requirement with a disciplinary course of their choice from the category “Chinese Arts,” which may include courses in Chinese art and architecture, drama, film, literature, and music. As with the courses in “Social Science Perspectives on China,” students may take their “Chinese Arts” course at any point in their undergraduate career.

2. **Mathematics:** Considered by many to be the “universal language,” mathematics provides logical and analytical tools necessary for tackling many of the important problems of our time. Quantitative skills are essential for work in the sciences and the social sciences, and they also have applications in the humanities. They are also critical to one’s ability to function and to thrive in today’s increasingly complex world.

Required courses or proficiencies: Students will have the opportunity at the beginning of their undergraduate career to demonstrate proficiency in mathematics through a placement test. Students that place out of a lower level core math class (see below) meet the requirement by taking a more advanced course according to placement exam results. Students majoring in Science, Engineering, and Economics, will take at least two mathematics courses: the first is a calculus course; the second is an integrated course on the mathematics of systems and dynamics, a course on multivariable calculus and differential equations, or linear algebra. Other students will fulfill this requirement by at least one course in either quantitative reasoning or calculus. Science and engineering students will be required to take specific mathematics courses for their majors. Finally, students in the mathematics honors major will take a set of highly advanced courses in mathematics.

3. **Science:** Scientific knowledge and inquiry are central to human society, and science and technology play an increasingly important role in our lives. At the heart of the natural sciences is a quest to understand the universe and who we humans are. The special feature of science is that its hypotheses can be tested under controlled conditions by appealing to evidence external to the inquirer. Thus, science provides a consistent framework for proposing ideas and testing potential answers to these questions. NYU Shanghai students will become conversant with the intellectual methods and analytical techniques that define modern science.

Required courses: The science requirement varies depending on the background and interests of the student, as follows:

- **Students who are pursuing degrees in science disciplines**—or who are taking the pre-health curriculum—will be required to take *Foundations of Science*, a rigorous, three-semester sequence of courses covering the fundamentals of basic science. Students in other majors may take the sequence to meet their science requirements if they meet the prerequisites. These courses present foundational concepts from the various science disciplines in an integrated way. Emphasis is placed on science as a process,

from hypothesis development to testing and experimentation, on data collection, and on drawing conclusions. All of the courses in this sequence have a project-based laboratory component. In its totality, this sequence is the equivalent of full-year introductory courses in physics, chemistry, and biology. In order to accommodate the requirements of schools of the health professions, NYU Shanghai distinctly reports grades in physics, chemistry, and biology, under *Foundations of Science* on a student's transcript.

- **Students who are not pursuing science as a major** but have a strong interest and advanced abilities in science may take the first semester of the *Foundations of Science* sequence or two courses from the Physics I & II, Chemistry I & II, or Biology I & II sequences (these classes are not open to science majors)
 - **Other students** will fulfill the science requirement by taking two courses that will provide a basic understanding of scientific analytical techniques. One will be a laboratory-based course from the category “Experimental Discovery in the Natural World”; examples of such courses are *The Domain of Crystals*, *Mutations and Disease*, and *The Molecules of Life*. The other will be a non-laboratory-based course from the category “Science, Technology and Society,”; examples of such courses include *Atom and Energy*, *Interconnected: The History and Theory of Networks*, and *Social Issues in the New Biosciences*.
4. **Writing:** NYU Shanghai students will attain a high level of sophistication in their writing and will be able to communicate effectively in a wide range of contexts. Students will develop proficiency in rhetorical and analytical modes of writing (comparison/contrast, exposition, cause/effect, description, analysis, argumentation and definition). These skills will be fostered not through a separate writing course (e.g. the typical “freshman comp” course) but rather through a “writing in the disciplines” approach that integrates writing instruction into required core courses. In addition, this intensive and integrative approach to writing is not relegated only to the outset of a student's college career but extends across the entire first two years (four semesters).

Required courses: NYU Shanghai students will participate in writing workshops offered in conjunction with the two-semester survey courses *Global Perspectives on Society* and *Global Perspectives on Culture* (see #1 above), and taught by experts in expository writing. Students in these workshops will develop fundamental writing skills through frequent assignments in which they will reflect on the materials that they study in the survey courses. Since students normally will take *Global Perspectives on Society* in the first year and *Global Perspectives on Culture* in the second year, they will have four consecutive semesters of writing instruction. Students' readiness to participate in the regular writing workshop sequence will be assessed prior to Orientation, and their developing proficiency will be tested throughout their undergraduate career.

5. **Language:** Language study is central to the educational mission of NYU as a Global Network University. NYU Shanghai's location and cosmopolitan student population make it all the more important for students to have access to innovative, flexible, and effective means for learning a language. Our goal is for all NYU Shanghai students to be *fluent* in English, the language of *instruction*, and for non-native Chinese speakers to develop as much *proficiency* in Chinese, the language of *community*, as their major course of study allows.

Required courses or proficiencies for Chinese: In the summer before their first year, non-native Chinese speaking students take placement exams to determine their Chinese language level and will receive some language instruction as part of their Orientation program (see above). Students will have room in their schedules for formal Chinese-language courses, and will benefit from a full set of courses, from the elementary level to the most advanced level. Students who are unable to take 4 credit courses in Chinese in their first two years because of heavy requirements in their major (e.g., STEM students), will be able to take 2 credit version of the Chinese classes. There will also be multiple modalities of instruction that take advantage of the latest pedagogical and technological developments. These will include formal intensive coursework during the Summer Session, language labs, online study, and co-curricular language coaching with immersion experiences.

Required courses or proficiencies for English: In the summer before their first year, non-native English speaking students take placement exams to determine their English language level and will receive some language instruction as part of their Orientation program. This will be an opportunity for Chinese and other international students to perfect their spoken and written English skills. Depending on placement students will be required to take none, one, or two English language courses. Students who are unable to take 4 credit courses in English in their first year because of heavy requirements in their major (e.g., STEM students), will be able to take 2 credit version of the English classes. The Academic Resource Center also provides some ESL support to students.

Core Curriculum Courses:

I. Social Foundations - Three Classes:

A. *Global Perspectives on Society (Two Classes) Fall I and Spring II*

B. "Social Science Perspectives on China" (one Class) Sample courses:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

20th Century East-Asia-US Relations

China's Development in a Comparative Perspective.

China's Political Thought in the Post-Maoist Era

Concept of China
Growing Shanghai, Shrinking Detroit
History of Modern China since 1840
Intellectual History of China.
Introduction to International Politics
Modern China and the World Economy
Public Policy Perspectives on China
The Political Economy of East Asia
The Rise of Modern China.
Topics in Environmental Values and Society Chinese Environmental Governance
Topics in Law and Society: Law, Culture, & Politics in China
Traditional Chinese Wisdom and Its Transformation in Modern Times.

II. Cultural Foundations – Three Classes:

A. *Global Perspectives on Culture* (Two Classes) Fall I and Spring II
B. “Chinese Arts” (One Class) Sample Courses:
Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

20th Century Chinese Writers in Global Context
Chinese Art and the Modern World.
Chinese Cinemas.
Chinese Film and Society
Contemporary Art and New Media
Contemporary Chinese Literature
Chinese Music from Antiquity to the Present.
Chinese Theatrical Traditions.
Contemporary Chinese Art in Shanghai.
Global Connections: Shanghai
History of Chinese Cinema
Introduction to Photography
Introduction to Studio Art
Masters of Asian Cinema
Paper Arts: History and Practice
Projects in Photography: China
Religion and Society in China: Gods, Ghosts, Buddhas, and Ancestors
Representing Ethnicity in Mainland China and Beyond A Comparative Study.
Shanghai Stories.
World Wide Chinese Diaspora

III. Mathematics – Varies by Major (see above)

Core Math classes:
Quantitative Reasoning (category)
Precalculus.

Calculus.
Multivariable Calculus and Differential Equations.
Introduction to Systems and Dynamics.
Linear Algebra.

IV. Science – Varies by Major (see above)

Core Science Courses:
Foundations of Science Courses
Foundations of Science I. (1+2)
Foundations of Science II. (3+4)
Foundations of Science III. (5+6)

Experimental Discovery in the Natural World Courses:
Brain and Behavior.
Data Structures
FOS I
Interaction Lab
Introduction to Computer Science
Mutations and Disease.
Physics I
The Domain of Crystals.
The Legacy of Tradition I: The Growth of Science in the West
The Molecules of Life.
Where the City Meets the Sea

Science, Technology and Society Courses:
Animals. Nature, and Environment
FOS I
Information Societies
Interconnected: The History and Theory of Networks
Life in the Universe.
Physics II
Serendipity
Social Issues in the New Biosciences.
State and Fate of the Earth.
The Atom and Energy.
The Rise of Modern Science

V. Writing

Writing instruction at NYU Shanghai will be delivered in twice-weekly writing workshops, taught by experts in expository writing and linked to the first-year course *Global Perspectives on Society* and the second-year course *Global Perspectives on Culture*. The works studied in these survey courses will be the primary focus of the essays that students will be asked to write in the workshops.

VI. Language – Varies by Student’s Language Level and Major

Chinese language courses:

Elementary Chinese I.

Elementary Chinese II.

Intermediate Chinese I.

Intermediate Chinese II.

Advanced Chinese I.

Advanced Chinese II.

Elementary Chinese for Advanced Beginners.

Intermediate Chinese for Advanced Beginners.

Classical Chinese I

Classical Chinese II

English Language Courses:

English I

English II

Students receive credit for any course passed with at least a D or a P grade. Courses may not be used to meet major or minor requirements or as prerequisites for more advanced classes unless a grade of C or higher is earned. This means that grades of P or C- and lower may not be used to meet major or minor requirements or as a prerequisite for more advanced courses.

Part Six: Overview of Majors

1. Humanities

Humanities Major

The intellectual vigor of the humanities pivots on a rigorous inquiry into the enduring traditions and the uncharted frontiers of what we call the human condition. At NYU Shanghai, our students learn to describe, analyze, critique, and theorize this condition in a mode that builds on both the curriculum's interdisciplinary, crosscultural foundation and the intellectual strength of our global faculty in fields ranging from history, philosophy, literary and cultural studies, to area studies, cinema, digital humanities, arts, among others. The integrated nature of our Humanities Major provides broad exposure to those sounds, texts, experiences, ideas, and images that mark the changing dynamics between Chinese, Asian, European, and other civilizations across lands and oceans. Poised to challenge common assumptions about the “what” and “how” of knowledge, our students also learn to pursue in-depth, comparative inquiries into the making and transformation of human thoughts. Through our two innovative core courses, Critical Concepts and Digital Approaches, students of our Humanities Major simultaneously enter the centuries-long traditions of humanistic inquiry and forge new ground in the areas of digital and information technologies. As they progress, students have the opportunity to design their own Focus, consisting of three courses on one topic or discipline of their interest within the Humanities, such as history, cinema studies, and so on. This exploration, in our students' senior-year Capstone course, will culminate into a thesis that reflects the student's chosen Focus.

Requirements:

1. **General Education Core Requirements: 9 courses (see above)**

Global Perspective on Society I
Global Perspective on Society II
Social Science Perspectives on China
Global Perspective on Culture I
Global Perspective on Culture II
Chinese Arts
Experimental Discovery in the Natural World
Science, Technology, and Society
Mathematics

2. **Major Requirements: 11 courses**, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

- **2 Core Courses (200 level) *prereq: GPS I**

The core courses are multidisciplinary courses that will create unexpected connections and cross-fertilization between various disciplines, including literary and cultural studies, philosophy and history.

- **Critical Concepts**
- **Digital Approaches**

- **2 Survey Courses (100 level)**

- introduction to the rudimentary knowledge of a range of humanities areas;
- overview of a broad topic and a field of knowledge;
- typical coursework: a mixture of lectures, discussions, assignments, shorter essays, quizzes and/or exams.

- **3 Topic Courses (200~400 levels) - two of them must be 300 level**

- provide an in-depth look at one specific topic in the fields of literature, history, philosophy, visual culture, among others;
- regionally and/or temporally focused;
- typical coursework (depending on level): a mixture of lectures, discussions, research papers.
- may be taken at all global sites.

- **3 Focus Courses (200~400 levels)**

- can be taken in all global sites;
- three courses on one specific topic or discipline within the Humanities;
- in consultation with their thesis advisor, students choose the Focus courses with the plan of developing their senior-year thesis on the basis of the chosen focus;
- in the second semester of the sophomore year, students have to present the proposal of their Focus to the Humanities Committees for approval.

- **1 Capstone Course (400 level)**

- a senior-year, semester-long culminating course where students build and synthesize the knowledge and intellectual training they have acquired into a work of thesis;

- the senior thesis is required for graduation in this major and has to be written under the directorship of an NYU-Shanghai faculty member in the Humanities; in the case that no Shanghai faculty are specialized in the subject of their choice, they can take a faculty member outside of Shanghai as a co-director, the thesis director has to be approved by the Humanities thesis committee; the proposal of the thesis and its final product should be evaluated and approved by the thesis advisor; the work should demonstrate a substantial amount of original research and should center on the Focus of the student's choice.

3. **General Electives (including language courses): 12 courses**

Humanities Majors' Sample Schedule

YEAR 1	1	2	3	4
Fall	<i>Global Perspectives on Society I (including Writing Workshop)</i>	Core Class	Core Class	English or Chinese
Spring	<i>Global Perspectives on Society II (including Writing Workshop)</i>	Digital Approaches	Core Class	English or Chinese

YEAR 2	1	2	3	4
Fall	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	Humanities Survey	<i>Critical Concepts</i>	Core class or Chinese
Spring	<i>Global Perspectives on Culture II (including Writing Workshop)</i>	Humanities Topic	Humanities Survey	Core class or Chinese

YEAR 3	1	2	3	4
Fall	General Elective	Humanities Topic	Humanities Focus	Core class or GE
Spring	General Elective	Humanities Topic	Humanities Focus	Core class or GE

YEAR 4	1	2	3	4
Fall	General Elective	Humanities Focus	General Elective	General Elective
Spring	General Elective	Humanities Capstone	General Elective	General Elective

Global China Studies Major

China has again become a major force in the world, while increasingly the world is drawn to China. More than the scope of the conventional Area Studies, the innovative interdisciplinary major in Global China Studies allows students to build on the knowledge and critical skills gained from the core curriculum to deepen their understanding of global currents in China, whether at the level of state and society or of individuals, and in the context of commercial, religious, cultural, political and other interactions. At the same time, students will gain a greater awareness of the extraordinary complexity of what we call “China” and how that has come about. Global China Studies majors will further their formal language study, either by an additional year of modern Chinese or a year of classical Chinese, or, in consultation with the adviser, by a year’s study of another dialect or language of China. They will learn about digital humanities from the specific perspective of Global China Studies; and finally, are strongly encouraged to study abroad beyond the minimum one semester in order to expand their global experience. Majoring in Global China Studies at NYU Shanghai positions students to pursue graduate education and professional careers in a broad range of areas at the cutting edge of 21st-century experience.

Requirements:

1. **General Education Core Requirements: 9 courses** (see above)

Global Perspective on Society I
Global Perspective on Society II
Social Science Perspectives on China
Global Perspective on Culture I
Global Perspective on Culture II
Chinese Arts
Experimental Discovery in the Natural World
Science, Technology, and Society
Mathematics

2. **Major Requirements: 9 Courses**, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

Required Courses (all Six)

The Concept of China
Chinese Geographies.
Digital Chinese Humanities
Worldwide Chinese Diaspora or Representing Ethnicity in Mainland China and Beyond A Comparative Study.
Advanced Chinese I and II. Or Classical Chinese I and II.

Global China Studies Electives (Choose Three)

Archaeology in China.
Art of War in China.
Ethnic Diversity in China.
Chinese Science.
Chinese Inventions in Global Context
History of Chinese Medicine.
Muslim Science and China.
Chinese Maritime History.
Modern Chinese Governance.
Modern Chinese Economy.
China and the Great Depression.
Chinese Revolutions.
Mao and the Chinese Revolution.
Chinese Environmental Studies.
Play and Games in Early China.
Beliefs and Social Practice in China.
China and Global Religions
China Trade in Global Context.
Tea, Silver, and Opium in China.
Global (Chinese) Texts.
20th-century Chinese Writers in Global Context.
Topics in Global China Studies.

3. **General Electives (including language courses): 14 courses**

Global China Studies Majors' Sample Schedule

YEAR 1	1	2	3	4
Fall	<i>Global Perspectives on Society I (including Writing Workshop)</i>	Core Class	Core Class	English or Chinese
Spring	<i>Global Perspectives on Society II (including Writing Workshop)</i>	<i>The Concept of China</i>	Core Class	English or Chinese

YEAR 2	1	2	3	4
Fall	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	<i>Digital Chinese Humanities</i>	Core class or GE	Core class or Chinese
Spring	<i>Global Perspectives on Culture II (including Writing Workshop)</i>	<i>Worldwide Chinese Diaspora</i>	Core class or GE	Core class or Chinese

YEAR 3	1	2	3	4
Fall	General Elective	<i>Chinese Geographies</i>	Advanced or higher Chinese	General Elective
Spring	General Elective	GCS Elective	Advanced or higher Chinese	General Elective

YEAR 4	1	2	3	4
Fall	General Elective	GCS Elective	General Elective	General Elective
Spring	General Elective	GCS Elective	General Elective	General Elective

Interactive Media Arts Major

Interactive Media Arts (IMA) is focused on exploring the expressive possibilities brought about by emerging forms of technology, media, and communication. In concert with the liberal arts core, student interests drive an ever-evolving project-based curriculum, that is designed to facilitate the acquisition of both the conceptual insights and practical skills needed to build the innovative human-centered design projects imagined by our students. IMA students are challenged to create interactive systems that connect people, facilitate participation, convey information, communicate stories, enhance experiences, and otherwise augment, improve, and bring both meaning and delight to people's lives. This may involve the development of software, the manipulation of digital media, the fabrication of material objects, the production of electronic devices, the construction of virtual and physical spaces, or the investigation of as yet unrealized forms.

Experimentation and risk taking are encouraged as we seek to harness the synergistic potentials of both scientific and artistic methods to first understand and then redefine how humans interact with their tools, environments, and one another. Graduates will be prepared to more fully participate in a world in which change is elemental, and the fields of business, the humanities, and the sciences increasingly require essential fluency in interactive media.

Requirements:

1. **General Education Core Requirements: 9 courses** (see above)

Global Perspective on Society I
Global Perspective on Society II
Social Science Perspectives on China
Global Perspective on Culture I
Global Perspective on Culture II
Chinese Arts
Experimental Discovery in the Natural World
Science, Technology, and Society
Mathematics

2. **Track Requirements: 9 courses**, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

Required Courses (Both)

Interaction Lab
Communications Labs.

Interactive Media Electives (Choose Seven)

including at least one course from each of the following categories:
Studio courses

Interactive art and entertainment courses
 Design courses
 Skill development courses
 Seminars

3. **General Electives (including language courses): 14 courses**

Interactive Media Arts Major Sample Schedule

YEAR 1

	1	2	3	4
Fall	<i>Global Perspectives on Society I (including Writing Workshop)</i>	Core Class	Core Class	English or Chinese
Spring	<i>Global Perspectives on Society II (including Writing Workshop)</i>	<i>Interaction Lab</i>	Core Class	English or Chinese

YEAR 2

	1	2	3	4
Fall	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	<i>Communications Lab</i>	Interactive Media Elective	Core class or Chinese
Spring	<i>Global Perspectives on Culture II (including Writing Workshop)</i>	Interactive Media Elective	Interactive Media Elective	Core class or Chinese

YEAR 3

	1	2	3	4
Fall	General Elective	Interactive Media Elective	General Elective	Core class or GE
Spring	General Elective	Interactive Media Elective	General Elective	Core class or GE

YEAR 4

	1	2	3	4
Fall	General Elective	Interactive Media Elective	General Elective	General Elective
Spring	General Elective	Interactive Media Elective	General Elective	General Elective

Natural and Physical Sciences

1. Biological and Behavioral Sciences majors

Biology Major

Biology is concerned with the workings of life in all its varied forms. Over the past few decades, the life sciences have been revolutionized by the development of molecular, cellular, genomic, and bioinformatics techniques that are now being applied to study fundamental processes in organisms. As a result, there has been a transformation in the understanding of life, from the genetic networks that guide how embryos develop to uncovering—at unprecedented resolution—natural genetic variation and how life adapts to diverse environments. These and other discoveries in biology have shaped society by improving human health, enhancing rational management of our environment, developing forensic science, and augmenting the production of renewable energy with the concomitant sequestering of pollutants. In addition, the rapid growth of the life sciences has fueled new ethical and legal issues that impinge on biological discoveries and their applications.

Building on the foundational integrated science courses, students in the Biology track of the Biological and Behavioral Sciences major learn to use the contemporary tools and approaches that are available to solve problems in areas of the current life sciences. Intermediate and advanced courses provide a broad and intensive background in modern biology for those interested in careers in research, health-related fields, biotechnology, and education, among others. The advanced courses emphasize the fundamental concepts and principles mastered in the Foundations of Science sequence, continuing the emphasis on using interdisciplinary approaches to understand the natural world.

The Biology track of the Biological and Behavioral Sciences major is taught by faculty who carry out research in state-of-the-art laboratories in various areas in the life sciences. The Biology program at NYU Shanghai has strong interactive ties with the Department of Biology and the Center for Genomics and Systems Biology at NYU in New York, and the Biology program at NYU Abu Dhabi, as well as with other laboratories across the NYU Global Network.

Requirements:

1. General Education Core Requirements: 9 courses (see above)

Global Perspective on Society I
Global Perspective on Society II
Social Science Perspectives on China
Global Perspective on Culture I

Global Perspective on Culture II

Chinese Arts

Experimental Discovery in the Natural World (*Foundations of Science I [1]*)

Science, Technology, and Society (*Foundations of Science I [2]*)

Mathematics (*Calculus*)

2. **Major Requirements: 12 courses**, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

Prerequisite courses (All Four)

Foundations of Science II. (3+4)

Foundations of Science III. (5+6)

Major Courses (All Four)

Networks and Dynamics.

Biostatistics.

Molecular and Cell Biology

Organic Chemistry I.

Biology Electives (Choose Four)

Genetics (highly recommended)

Developmental Biology (highly recommended)

Evolution (highly recommended)

Genomics and Bioinformatics

Systems Biology

Advanced Cell Biology

Microbiology and Microbial Genomics

Ecosystems

Comparative Physiology

Introduction to Neuroscience

Independent Research / Research Internship

3. **General Electives (including language courses): 11 Courses**

Students may need to take 2 credit versions of language classes while completing FOS sequence.

Students are strongly encouraged (but not required) to take *Organic Chemistry II* as a general elective.

Biology Majors' Sample Schedule

YEAR 1

	1	2	3	4
Fall	<i>Global Perspectives on Society I (including Writing Workshop)</i>	<i>Core class (Calculus)</i>	<i>Core class (Foundations of Science 1)</i>	<i>Core class (Foundations of Science 2)</i>
Spring	<i>Global Perspectives on Society II (including Writing Workshop)</i>	<i>Networks and Dynamics</i>	<i>Foundations of Science 3</i>	<i>Foundations of Science 4</i>

YEAR 2

	1	2	3	4
Fall	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	<i>Organic Chemistry I</i>	<i>Foundations of Science 5</i>	<i>Foundations of Science 6</i>
Spring	<i>Global Perspectives on Culture II (including Writing Workshop)</i>	General Elective (could be <i>Organic Chemistry II</i> for pre-med students)	<i>Molecular and Cell Biology</i>	<i>Biostatistics</i>

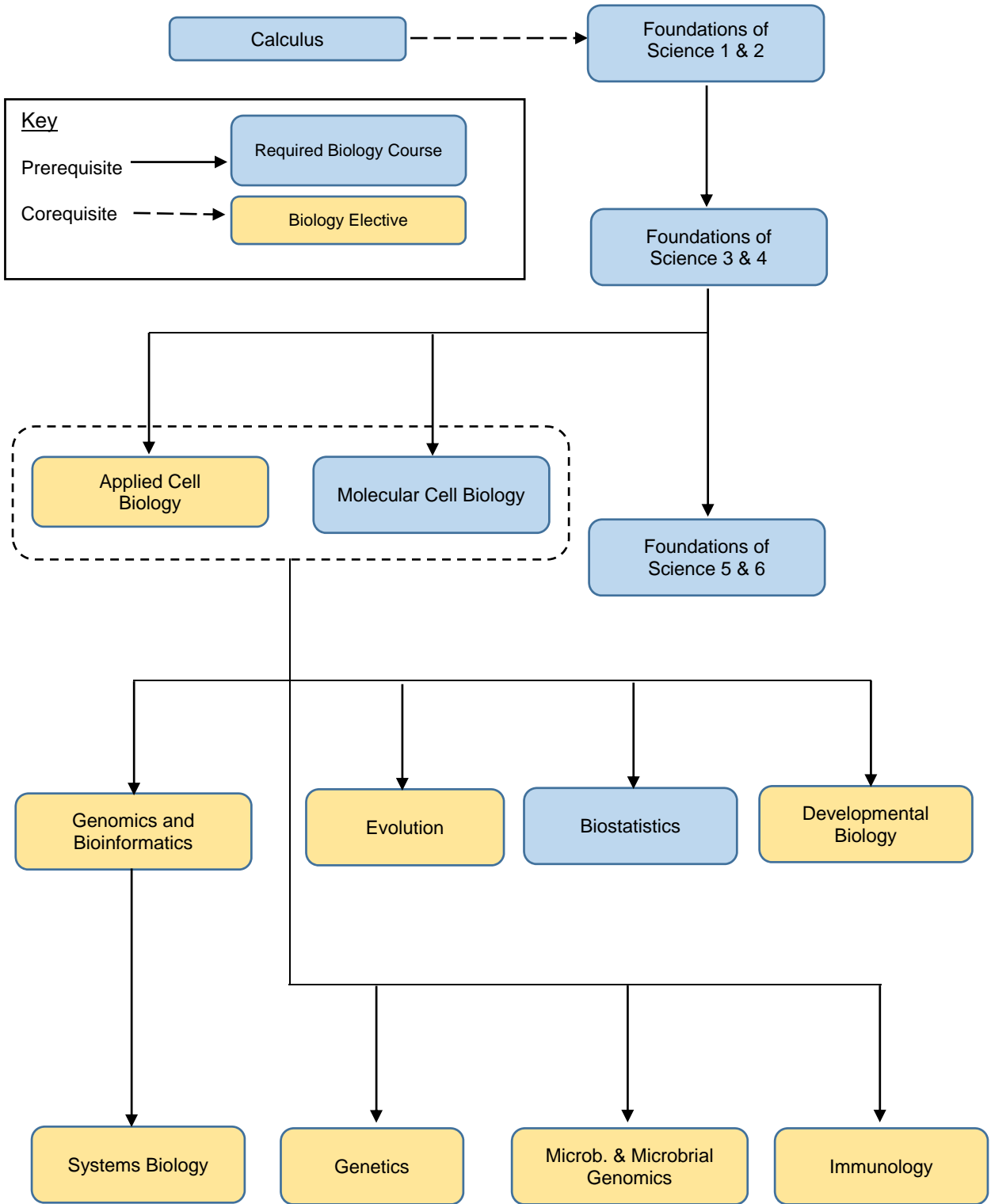
YEAR 3

	1	2	3	4
Fall	Core class or GE	Biology Elective	General Elective	Language Class or General Elective
Spring	Core class or GE	Biology Elective	General Elective	Language Class or General Elective

YEAR 4

	1	2	3	4
Fall	General Elective	Biology Elective	General Elective	Language Class or General Elective
Spring	General Elective	Biology Elective	General Elective	Language Class or General Elective

Prerequisite Chart for the Biology Major



Chemistry major

The focus of the Chemistry program is the study of the world of molecules, how they are created from atoms, how their structures affect their chemical and physical properties, and how they unite or assemble to form the matter that makes up the physical world. Knowledge of chemistry is fundamental to an in-depth understanding of the structural properties and biochemical reactions that define all living systems. In fact, chemistry interfaces with the life sciences and with physics and mathematics.

The range of applications of modern chemistry is broad, spanning many aspects of human activities such as the improvement of agriculture, the discovery of new drugs, and the creation of new materials by learning how molecules are assembled and how they recognize one another. Chemistry drives the exciting field of nanotechnology that generates new materials for devising ever smaller electronic devices with enhanced computing or information storage characteristics; that invents novel materials for innovative applications in industry and everyday life; and that constructs novel photosensitive materials for solar energy conversion to electricity, to cite just a few examples.

Majoring in Chemistry provides strong preparation for graduate study in chemistry and biochemistry; professional education in medicine, dentistry, or patent law; and careers in industrial or pharmaceutical chemistry and biotechnology. Chemistry majors are encouraged to complete Linear Algebra if they hope to pursue graduate or professional studies in science.

Requirements:

1. **General Education Core Requirements:** 9 courses (see above)

Global Perspective on Society I

Global Perspective on Society II

Social Science Perspectives on China

Global Perspective on Culture I

Global Perspective on Culture II

Chinese Arts

Experimental Discovery in the Natural World (*Foundations of Science I [1]*)

Science, Technology, and Society (*Foundations of Science I [2]*)

Mathematics (*Calculus*)

2. **Major Requirements: 16 Courses** as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

Prerequisite courses (All Four)

Foundations of Science II. (3+4)
Foundations of Science III. (5+6)

Major Courses (All Nine)

Multivariable Calculus and Differential Equations
Linear Algebra for applications
Probability and Statistics
Inorganic Chemistry.
Organic Chemistry I.
Organic Chemistry II.
Physical Chemistry: Quantum Mechanics and Spectroscopy.
Physical Chemistry: Thermodynamics and Kinetics.
Physical Chemistry Laboratory.

Chemistry Electives (Choose Two)

Organic Analysis.
Biochemistry I.
Biochemistry II.
Experimental Biochemistry.
Biophysical Chemistry.

3. **General Electives (including language courses): 7 Courses**

Chemistry Majors Sample Schedule

YEAR 1

	1	2	3	4
Fall	<i>Global Perspectives on Society I (including Writing Workshop)</i>	Core class (Calculus)	Core class (Foundations of Science 1)	Core class (Foundations of Science 2)
Spring	<i>Global Perspectives on Society II (including Writing Workshop)</i>	Multivariate Calculus and Differential Equations	Foundations of Science 3	Foundations of Science 4

YEAR 2

	1	2	3	4
Fall	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	Organic Chemistry I	Foundations of Science 5	Foundations of Science 6
Spring	<i>Global Perspectives on Culture II (including Writing Workshop)</i>	Organic Chemistry II	Linear Algebra for Applications	General Elective

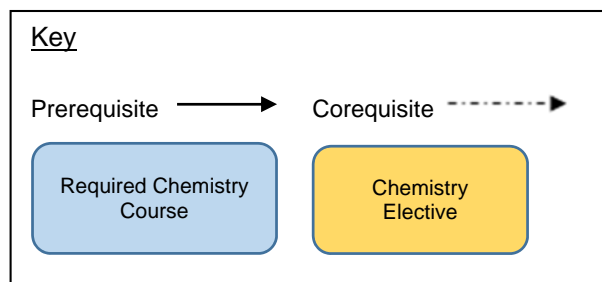
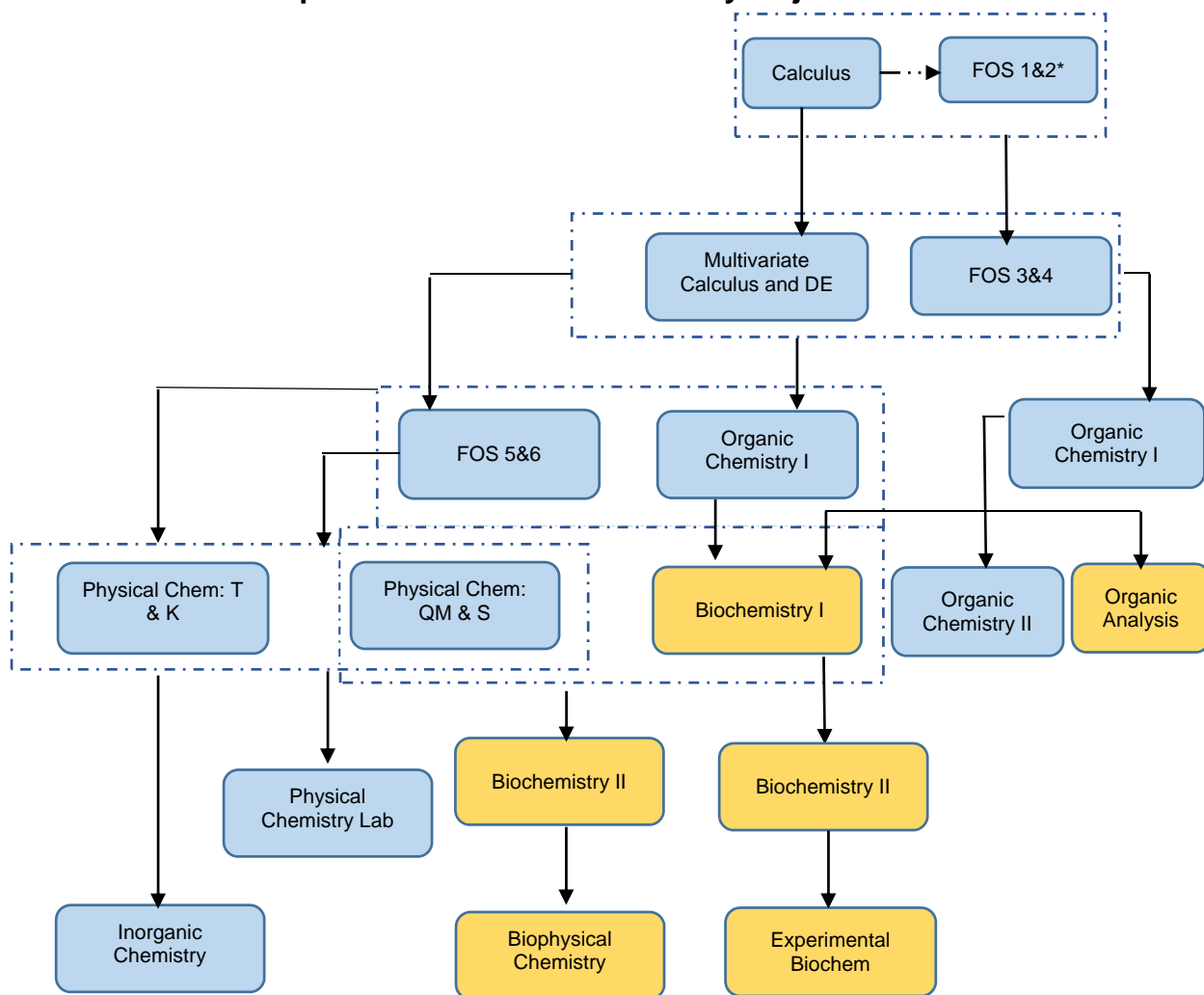
YEAR 3

	1	2	3	4
Fall	Core class or GE	Physical Chemistry: Quantum Mechanics and Spectroscopy	Physical Chemistry Laboratory	Language Class or General Elective
Spring	Core class or GE	Physical Chemistry: Thermodynamics and Kinetics	Probability and Statistics	Language Class or General Elective

YEAR 4

	1	2	3	4
Fall	General Elective	Inorganic Chemistry	Chemistry Elective	Language Class or General Elective
Spring	General Elective	Chemistry Elective	General Elective	Language Class or General Elective

Prerequisite Chart for the Chemistry Major



Neural Science Major

Neural science is a collection of disciplines unified by a concern for the function of the brain. Experimental approaches in neural science vary from analyses of molecular and cellular mechanisms in nerve cells and groups of nerve cells to behavioral and psychological studies of whole organisms. Theoretical tools include mathematical and computational modeling approaches that have proved useful in other areas of science. Experimental questions include issues related to biophysical and neurochemical mechanisms within single nerve cells, functional neural circuits consisting of small numbers of neurons, the behavior of large systems of neurons, and the relationship between the activity of elements of the nervous system and the behavior of organisms. The Neural Science program at NYU Shanghai has strong interactive with the Center for Neural Science at NYU in New York as well as with other laboratories across the NYU Global Network.

Requirements:

1. **General Education Core Requirements: 9 courses** (see above)

Global Perspective on Society I

Global Perspective on Society II

Social Science Perspectives on China

Global Perspective on Culture I

Global Perspective on Culture II

Chinese Arts

Experimental Discovery in the Natural World (*Foundations of Science I [1]*)

Science, Technology, and Society (*Foundations of Science I [2]*)

Mathematics (*Calculus*)

2. **Major Requirements: 14 courses**, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement

Prerequisite courses (All Four)

Foundations of Science II. (3+4)

Foundations of Science III. (5+6)

Major Courses (All Five)

Biostatistics.

Introduction to Systems and Dynamics

Introduction to Neural Science.

Cellular and Molecular Neuroscience.

Behavioral and Integrative Neuroscience.

Neural Science Electives (Choose Five from Neural Science, Biology, Mathematics or Computer Science)

(Most Neural Science electives will be from the rubric *Special Topics in Neural Science*)

Development and Dysfunction of the Nervous System.

Special Topics in Neural Science.

3. **General Electives (including language courses): 9 courses**

Students may need to take 2 credit versions of language classes while completing FOS sequence. Students are strongly encouraged (but not required) to take *Organic Chemistry I and II* (for course description, see Chemistry) and *Introduction to Programming* (for course description, see Computer Science) as general electives.

Neural Science Majors' Sample Schedule

YEAR 1

	1	2	3	4
Fall	<i>Global Perspectives on Society I (including Writing Workshop)</i>	Core class (Calculus)	Core class (Foundations of Science 1)	Core class (Foundations of Science 2)
Spring	<i>Global Perspectives on Society II (including Writing Workshop)</i>	Networks and Dynamics	Foundations of Science 3	Foundations of Science 4

YEAR 2

	1	2	3	4
Fall	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	Intro to Neural Science	Foundations of Science 5	Foundations of Science 6
Spring	<i>Global Perspectives on Culture II (including Writing Workshop)</i>	Behavioral and Integrative Neuroscience	Biostatistics	General Elective

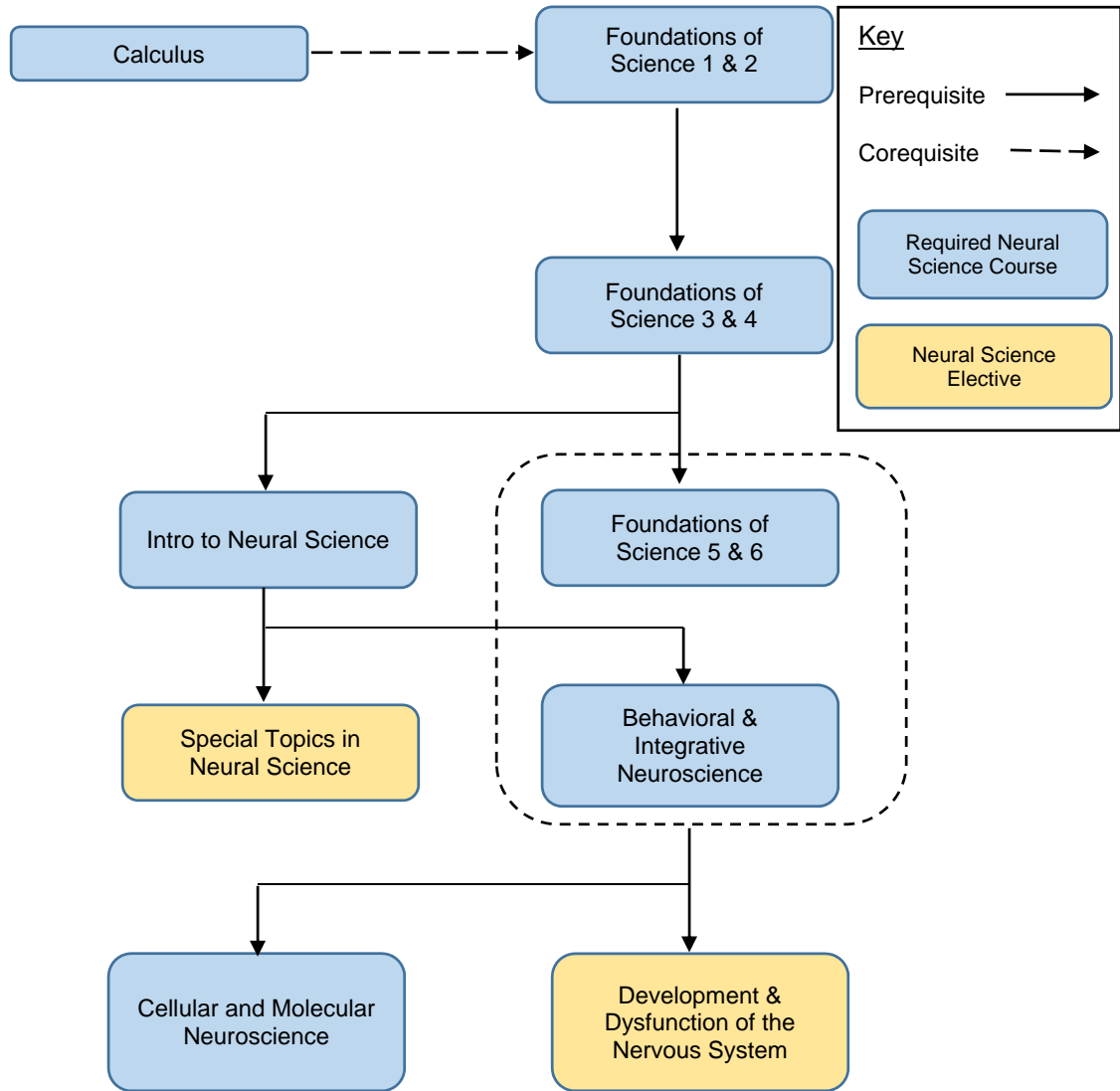
YEAR 3

	1	2	3	4
Fall	Core class or GE	Cellular and Molecular Neuroscience	General Elective	Language Class or General Elective
Spring	Core class or GE	Neural Science Elective (Bio, Math, or NS)	General Elective	Language Class or General Elective

YEAR 4

	1	2	3	4
Fall	General Elective	Neural Science Elective (Bio, Math, or NS)	Neural Science Elective (Bio, Math, or NS)	Language Class or General Elective
Spring	General Elective	Neural Science Elective (Bio, Math, or NS)	Neural Science Elective (Bio, Math, or NS)	Language Class or General Elective

Prerequisite Chart for the Neural Science Major



Physics Major

Physics is a broad discipline, ranging from fundamental scientific questions to sophisticated technological applications. At its most basic, it is the study of matter and energy and their manifold interactions. Physicists study topics as wide-ranging as the underlying nature of space and time; the origins, large-scale structure, and future evolution of the universe; the behavior of stars and galaxies; the fundamental constituents of matter; the many different patterns in which matter is organized, including superconductivity, liquid crystals, or the various forms of magnetism in solids; the workings of biological matter, whether in molecules such as DNA, or cellular structures, or the transport of matter and energy in and across cells; and many others. Basic physics research has led to myriad technological advances, which have transformed society in the 20th century through the present day; a small list includes: radio and television; computers; lasers; X-rays; magnetic resonance imaging and CAT scans; and the World Wide Web.

Physics is a hands-on discipline, and our students gain expertise not only in the classroom but also in the laboratory. They participate in activities ranging from the writing of realistic computer games to the modeling of financial activities, as well as the more traditional activities of physicists. Those trained in physics are found in many occupations, such as various fields of engineering, computer technology, health, environmental and earth sciences, communications, and science writing. A higher degree opens the possibility of creative research in industry, or teaching and research in colleges and universities. Outstanding and highly motivated students are offered special opportunities for honors work, independent study, summer laboratory research, internships, and other enhancements.

Requirements:

1. **General Education Core Requirements: 9 courses** (see above)

Global Perspective on Society I

Global Perspective on Society II

Social Science Perspectives on China

Global Perspective on Culture I

Global Perspective on Culture II

Chinese Arts

Experimental Discovery in the Natural World (*Foundations of Science I [1]*)

Science, Technology, and Society (*Foundations of Science I [2]*)

Mathematics (*Calculus*)

2. **Major Requirements: 13 courses**, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

Prerequisite courses (All Four)

Foundations of Science II. (3+4)

Foundations of Science III. (5+6)

Additional Required Courses (All Eight)

Multivariable Calculus and Differential Equations.

Linear Algebra

Probability and Statistics

Mechanics.

Electricity and Magnetism.

Quantum Mechanics.

Statistical Mechanics and Thermodynamics.

Advanced Physics Laboratory.

Physics Electives (Choose one)

Astrophysics.

Biophysics.

Computational Physics.

Nuclear and Particle Physics.

Solid State Physics.

3. **General Electives (including language courses): 10 Courses**

Physics Majors' Sample Schedule

YEAR 1

	1	2	3	4
Fall	<i>Global Perspectives on Society I (including Writing Workshop)</i>	Core class (<i>Calculus</i>)	Core class (<i>Foundations of Science 1</i>)	Core class (<i>Foundations of Science 2</i>)
Spring	<i>Global Perspectives on Society II (including Writing Workshop)</i>	<i>Differential Equations and Multivariate Calculus</i>	<i>Foundations of Science 3</i>	<i>Foundations of Science 4</i>

YEAR 2

	1	2	3	4
Fall	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	<i>Linear Algebra for Applications</i>	<i>Foundations of Science 5</i>	<i>Foundations of Science 6</i>
Spring	<i>Global Perspectives on Culture II (including Writing Workshop)</i>	<i>Mechanics</i>	<i>Electricity and Magnetism</i>	General Elective

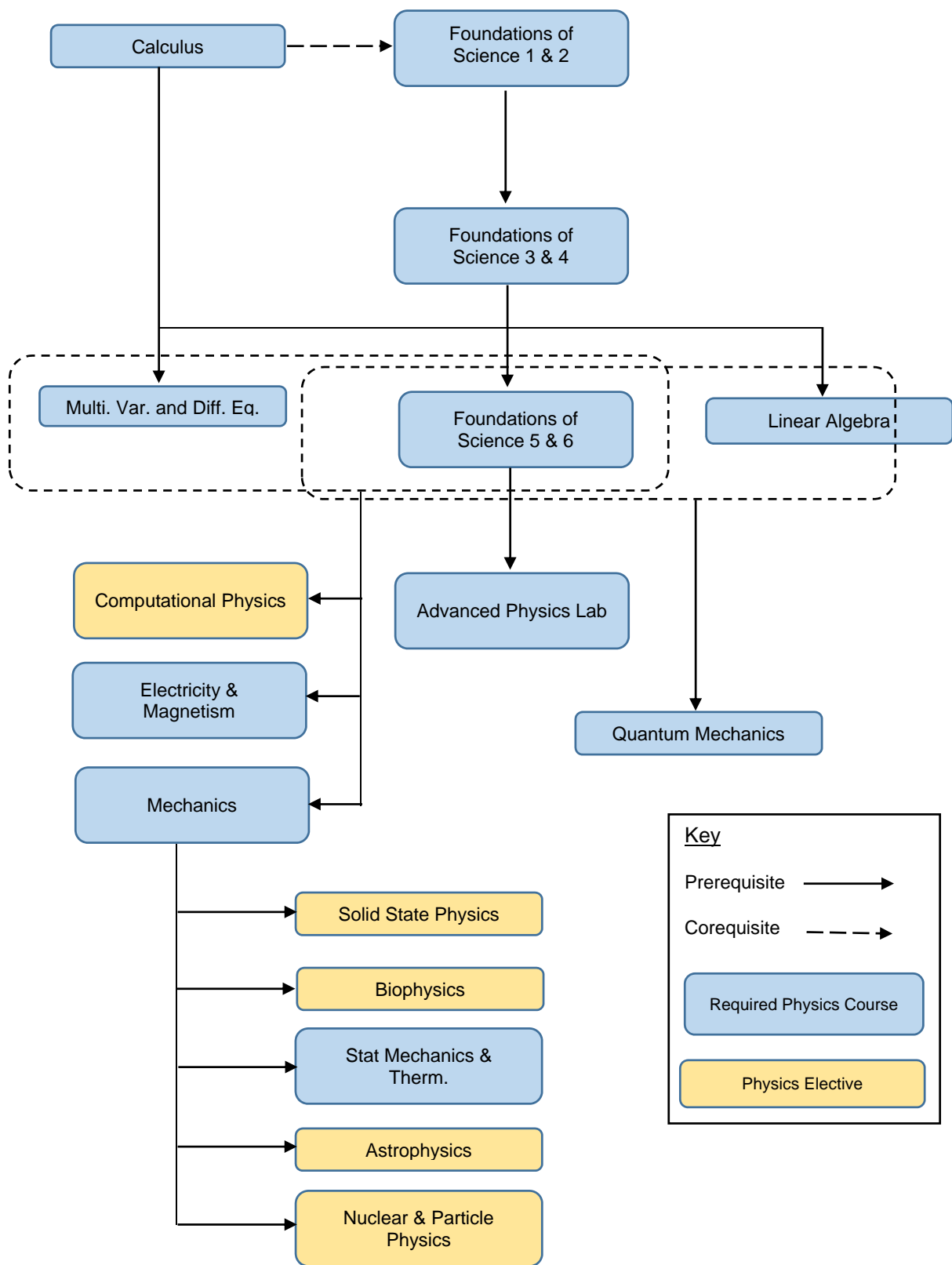
YEAR 3

	1	2	3	4
Fall	Core class or GE	<i>Probability and Statistics</i>	<i>Statistical Mechanics and Thermodynamics</i>	Language Class or General Elective
Spring	Core class or GE	<i>Quantum Mechanics</i>	<i>Advanced Physics Lab</i>	Language Class or General Elective

YEAR 4

	1	2	3	4
Fall	General Elective	Physics Elective	General Elective	Language Class or General Elective
Spring	General Elective	General Elective	General Elective	Language Class or General Elective

Prerequisite Chart for the Physics Major



Key

Prerequisite →

Corequisite - - - →

Required Physics Course

Physics Elective

3. Mathematics

Mathematics

Mathematics provides the logical and analytical tools for tackling many of the important problems of our time. By its very nature, mathematics provides the means to break many problems into manageable pieces that can be analyzed and solved. In fact, mathematical approaches have been central to solving problems and modeling phenomena in a wide array of disciplines. Probability and statistical analysis are fundamental for mapping and analyzing the human genome. Advanced mathematical theories provide the keys to analyzing the risk of rare events, a basic problem of the financial markets. In physics, geometry finds applications to particle physics, to string theory, and to cosmology. In neuroscience, exciting new research into the structure and functioning of the brain relies heavily on the insights provided by mathematical modeling. These are but a few of the contemporary problems relying on mathematical analysis. Mathematical thinking is grounded in rigor and abstraction, but draws its vitality from questions arising in the natural world as well as applications to industry and technology.

Mathematics forms the backbone of many scientific fields. It provides the theory and methods essential to understanding the fundamentals of such areas as physics, engineering, and computer science. With a firm grasp of mathematics, you'll have the widest possible base from which to launch explorations of related discipline.

Honors Mathematic Major

Requirements:

1. **General Education Core Requirements: 9 courses** (see above)

Global Perspective on Society I

Global Perspective on Society II

Social Science Perspectives on China

Global Perspective on Culture I

Global Perspective on Culture II

Chinese Arts

Experimental Discovery in the Natural World (must be *Foundations of Science I [1]*) or *Physics I; Chemistry I; or Biology I*

Science, Technology, and Society (must be *Foundations of Science I [2]*) or *Physics I or II; Chemistry I or II; or Biology I or II*

Mathematics (*Calculus Emphasizing Proofs*)

2. **Major Requirements: 15 courses**, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

Required Mathematics Courses (All Nine)

Analysis I.

Analysis II.

Advanced Linear Algebra I.

Advanced Linear Algebra II.

Algebra I.

Differential Geometry.

Theory of Probability.

Complex Variables.

Ordinary Differential Equations I.

Mathematics Electives (Choose Six)

Algebra II.

Real Variables.

Functional Analysis.

Ordinary Differential Equations II.

Topology

Number Theory.

Mathematical Statistics.

Combinatorics

Numerical Analysis.

Scientific Computations.

Fluid Dynamics.

Dynamical Systems

Discrete Mathematics.

3. **General Electives (including language courses): 8 Courses**

Honors Mathematics Majors' Sample Schedule

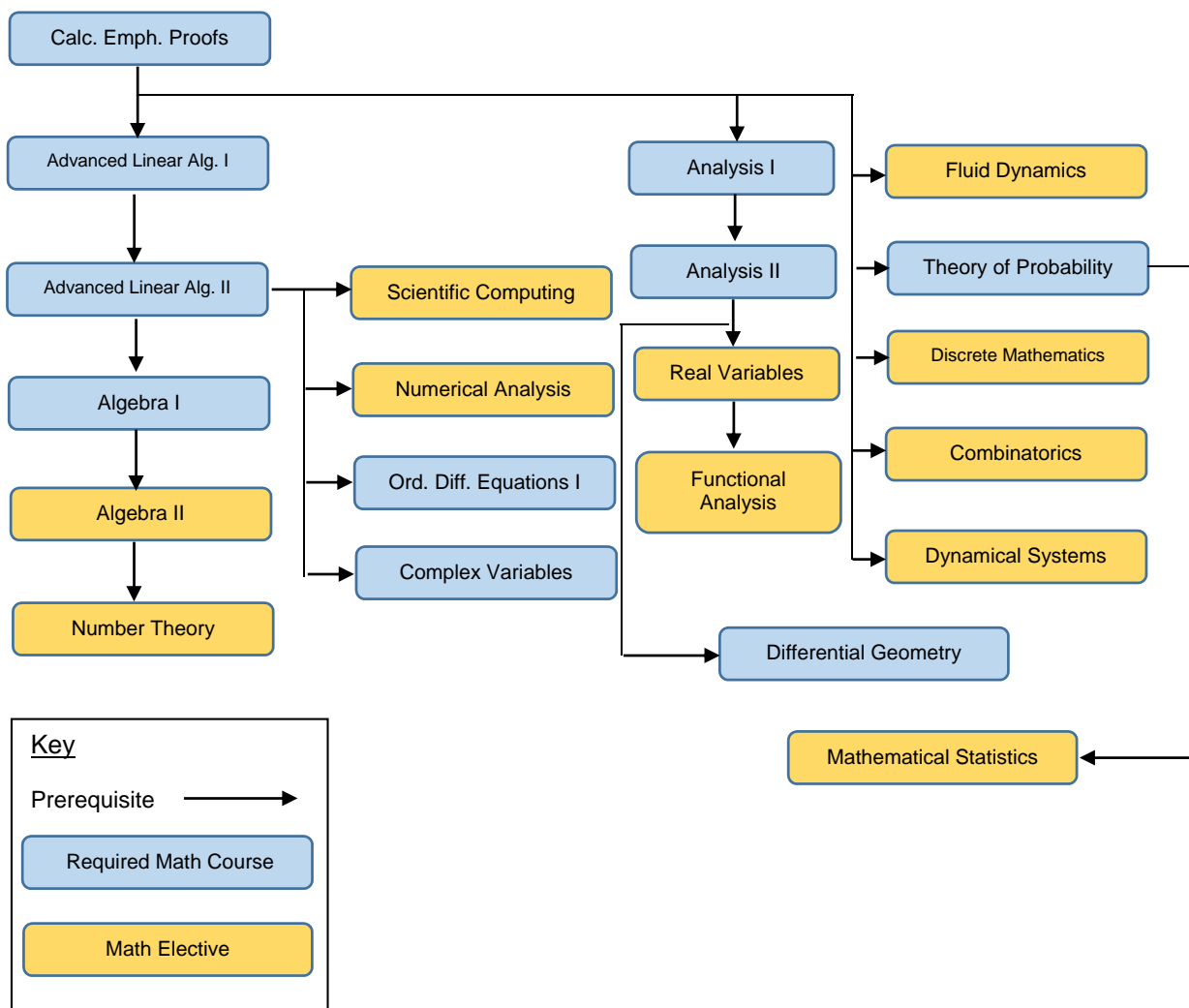
<i>YEAR 1</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>Fall</i>	<i>Global Perspectives on Society I (including Writing Workshop)</i>	<i>Core class (Calculus Emphasizing Proofs)</i>	<i>Core Class</i>	<i>English or Chinese</i>
<i>Spring</i>	<i>Global Perspectives on Society II (including Writing Workshop)</i>	<i>Analysis I</i>	<i>Core Class</i>	<i>English or Chinese</i>

<i>YEAR 2</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>Fall</i>	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	<i>Analysis II</i>	<i>Advanced Linear Algebra I</i>	<i>Core class or Chinese</i>
<i>Spring</i>	<i>Global Perspectives on Culture II (including Writing Workshop)</i>	<i>Ordinary Differential Equations I</i>	<i>Advanced Linear Algebra II</i>	<i>Core class or Chinese</i>

<i>YEAR 3</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>Fall</i>	<i>Core class or GE</i>	<i>Complex Variables</i>	<i>Algebra I</i>	<i>Theory of Probability</i>
<i>Spring</i>	<i>Core class or GE</i>	<i>Differential Geometry</i>	<i>Mathematics Elective</i>	<i>Mathematics Elective</i>

<i>YEAR 4</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>Fall</i>	<i>General Elective</i>	<i>Mathematics Elective</i>	<i>Mathematics Elective</i>	<i>General Elective</i>
<i>Spring</i>	<i>General Elective</i>	<i>Mathematics Elective</i>	<i>Mathematics Elective</i>	<i>General Elective</i>

Prerequisite Chart for the Honors Mathematics Major



Mathematics Major

Requirements:

4. **General Education Core Requirements: 9 courses** (see above)

Global Perspective on Society I

Global Perspective on Society II

Social Science Perspectives on China

Global Perspective on Culture I

Global Perspective on Culture II

Chinese Arts

Experimental Discovery in the Natural World (must be *Foundations of Science I [1]*) or

Physics I; Chemistry I; or Biology I

Science, Technology, and Society (must be *Foundations of Science I [2]*) or *Physics I or*

II; Chemistry I or II; or Biology I or II

Mathematics (*Calculus*)

5. **Major Requirements: 13 courses**, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

Required Mathematics Courses (All Five)

Multivariable Calculus

Linear Algebra.

Ordinary Differential Equations.

Probability and Statistics or Theory of Probability.

Complex Variables.

Constrained Math Elective (choose two):

Algebra I.

Analysis I.

Dynamical Systems.

Partial Differential Equations.

Numerical Analysis.

Differential Geometry.

Functional Analysis

Mathematics Electives (Choose Six, includes classes in choose two section)

Algebra II.

Real Variables.

Ordinary Differential Equations II.

Topology

Number Theory.

Mathematical Statistics.

Combinatorics

Scientific Computations.
Fluid Dynamics.
Discrete Mathematics.

6. **General Electives (including language courses): 10 Courses**

Mathematics Majors' Sample Schedule

YEAR 1

	1	2	3	4
Fall	<i>Global Perspectives on Society I (including Writing Workshop)</i>	Core class (<i>Calculus</i>)	Core Class	English or Chinese
Spring	<i>Global Perspectives on Society II (including Writing Workshop)</i>	<i>Multivariate Calculus</i>	Core Class	English or Chinese

YEAR 2

	1	2	3	4
Fall	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	<i>Linear Algebra</i>	<i>Probability and Statistics</i>	Core class or Chinese
Spring	<i>Global Perspectives on Culture II (including Writing Workshop)</i>	<i>Ordinary Differential Equations</i>	<i>Constrained Math Elective</i>	Core class or Chinese

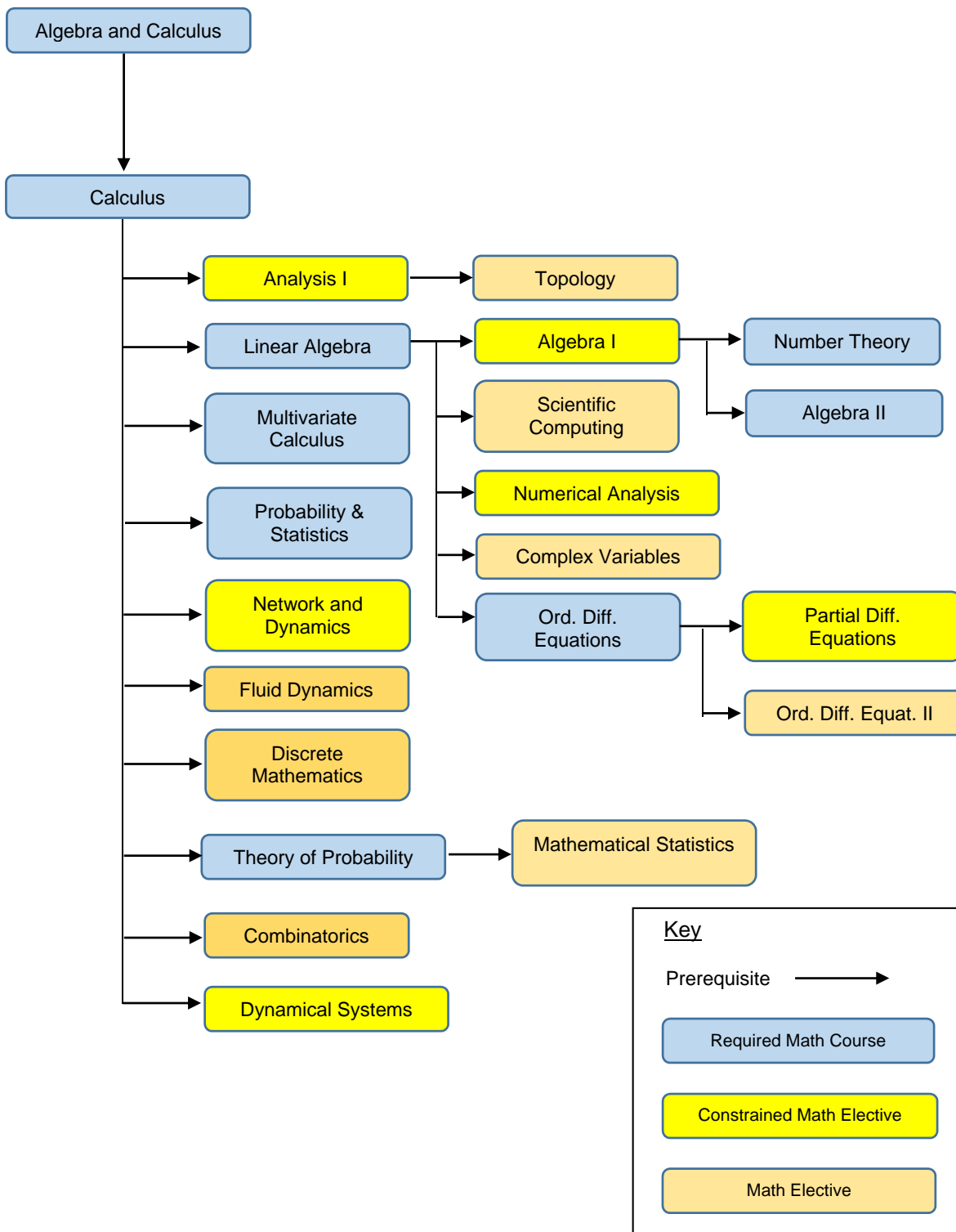
YEAR 3

	1	2	3	4
Fall	Core class or GE	<i>Complex Variables</i>	<i>Algebra I</i>	General Elective
Spring	Core class or GE	<i>Constrained math elective</i>	<i>Math Elective</i>	General Elective

YEAR 4

	1	2	3	4
Fall	General Elective	<i>Math Elective</i>	<i>Math Elective</i>	General Elective
Spring	General Elective	<i>Math Elective</i>	<i>Math Elective</i>	General Elective

Prerequisite Chart for the Mathematics Major



4. Computer Science and Engineering

Computer Science Major

Computer science, rooted in mathematics and engineering, has led to revolutionary innovations in entertainment, the humanities, health, business, the news media, communications, education, scientific research, and the arts. Although it is a relatively young field, computer science has produced many of the advances of modern life that we now take for granted. It has given medical researchers tools to understand and cure diseases, enabled physicists to reshape our understanding of the universe, allowed neuroscientists to uncover the secrets of our brains, and helped biologists decipher the human genome. Computer science has rewritten the rules of the entertainment industry and has transformed the way humans communicate with each other.

A computer science degree granted by a liberal arts program is of special value today, as the world increasingly needs graduates who not only possess computer skills, but also apply them in a context of broad general learning. Graduates will be ready to take exciting and demanding jobs in the field or to continue their studies in pursuit of advanced scientific or professional degrees.

Requirements:

1. General Education Core Requirements: 9 courses (see above)

Global Perspective on Society I
Global Perspective on Society II
Social Science Perspectives on China
Global Perspective on Culture I
Global Perspective on Culture II
Chinese Arts
Experimental Discovery in the Natural World
Science, Technology, and Society
Mathematics (*Calculus*)

2. Major Requirements: 12 courses, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

Required Major Courses (All Ten)

Discrete Mathematics
Probability and Statistics or Theory of Probability or Statistics for Business and Economics
Introduction to Computer Science
Data Structures
Object Oriented Programming
Computer Architecture
Operating Systems
Algorithms

Software Engineering
Senior Project

Computer Science Electives (Choose Two)

Advanced Algorithms.

Computer Networking.

Computer Security.

Network Security.

Introduction to Game Programming.

Computer Graphics.

Digital Logic.

UNIX System Programming.

Computer Vision.

Introduction to Databases.

Theory of Computation.

Machine Learning and Data Mining.

Artificial Intelligence.

Introduction to Cryptography.

Parallel and Distributed Computing.

Developing Web

3. General Electives (including language courses): 11 Courses

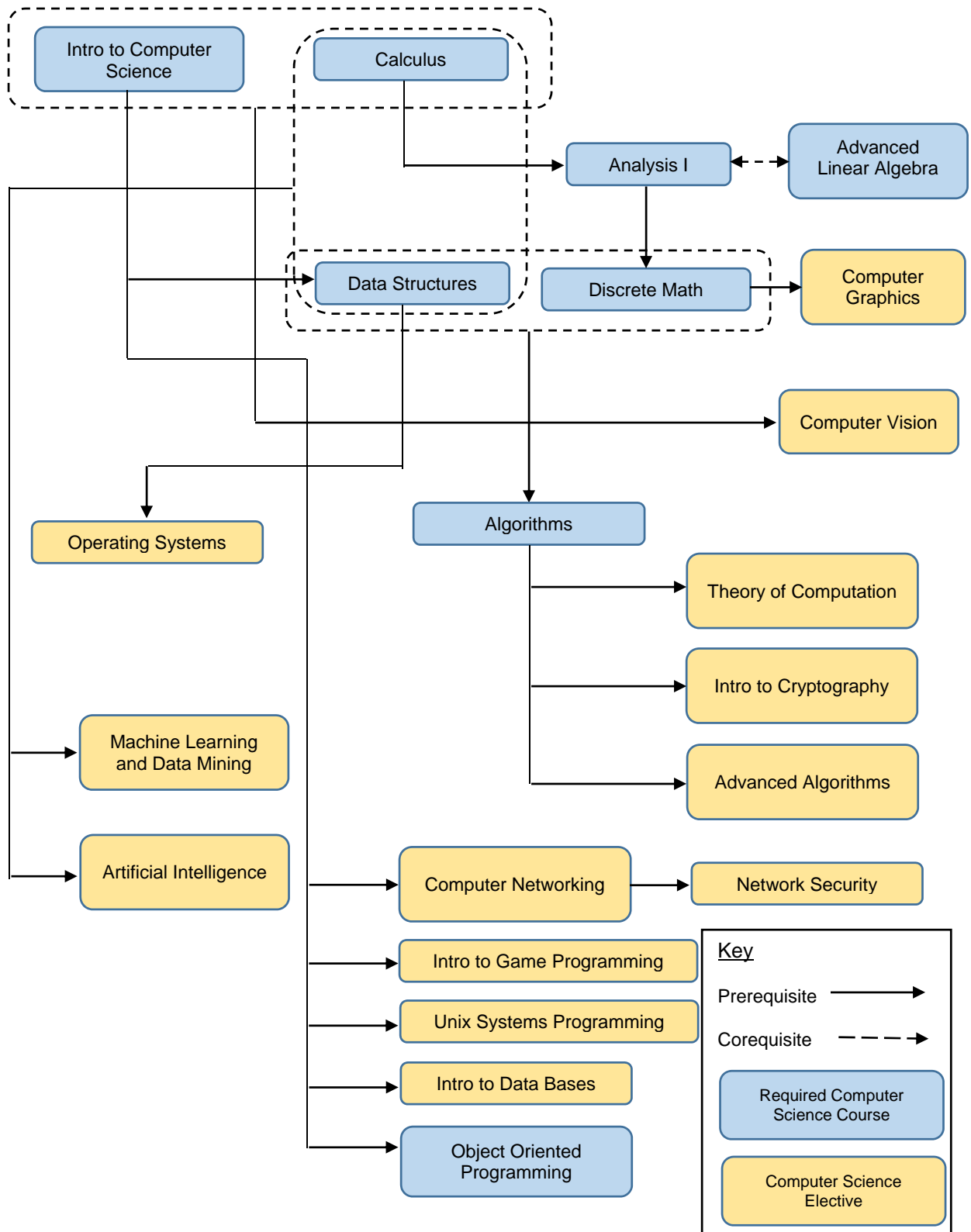
Computer Science Majors' Sample Schedule

YEAR 1	1	2	3	4
Fall	<i>Global Perspectives on Society I (including Writing Workshop)</i>	Core class (<i>Calculus</i>)	Core class	English or Chinese
Spring	<i>Global Perspectives on Society II (including Writing Workshop)</i>	<i>Intro to Computer Science</i>	Core class	English or Chinese

YEAR 2	1	2	3	4
Fall	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	<i>Data Structures</i>	<i>Computer Architecture</i>	Core class or Chinese
Spring	<i>Global Perspectives on Cultures II (including Writing Workshop)</i>	<i>Object Oriented Programming</i>	<i>Discrete Mathematics</i>	Core class or Chinese

YEAR 3	1	2	3	4
Fall	Core class or GE	<i>Operating Systems</i>	<i>Algorithms</i>	General Elective
Spring	Core class or GE	Computer Science Elective	<i>Probability and Statistics</i>	General Elective

YEAR 4	1	2	3	4
Fall	General Elective	Computer Science Elective	<i>Software Engineering</i>	General Elective
Spring	General Elective	<i>Senior Project</i>	Computer Science Elective	General Elective



Computer Engineering Major

Engineering challenges of the 21st century are varied, complex, and cross-disciplinary. Ranging from the nano-scale to mega-projects, they are characterized by sustainability concerns, environmental and energy constraints, global sourcing, and humanitarian goals. In the face of global competition, dwindling natural resources and the complexity of societal needs, the leaders of technological enterprises will be those who can innovate, are inventive and entrepreneurial, and understand how technology is integrated within society. Computer Engineering at NYU Shanghai is designed to create technological leaders with a global perspective, a broad education, and the capacity to think creatively. Students enjoy a learning environment conducive to creativity which is at the heart of tomorrow's technological innovations and enterprises. Today the products of computer engineering touch nearly every part of our lives. They let us chat with friends via web cams, send emails from cell phones, and withdraw cash from ATMs. But laptops and information networks aren't the only products computer engineers develop; they reconstruct genomes, design robots, and develop software to make businesses more efficient.

The Computer Engineering program draws upon courses across an array of disciplines. The liberal arts core provides the intellectual breadth, a "license to learn," preparing students to thrive in a multicultural globalized world and learn and adapt quickly in areas that evolve with ever-increasing swiftness. Students not only gain a firm grounding across various science and engineering fields that underscore the technical component of an engineering education, but also draw upon courses across the curriculum to develop an understanding of cultural, political, economic, environmental, and public safety considerations. In their courses, Computer Engineering students are involved in the design process and the progression of technological inventions from concept through product development and market introduction.

Requirements:

1. General Education Core Requirements: 9 courses (see above)

Global Perspective on Society I

Global Perspective on Society II

Social Science Perspectives on China

Global Perspective on Culture I

Global Perspective on Culture II

Chinese Arts

Experimental Discovery in the Natural World (must be *Physics I* or *Foundations of Science I* [1&2])

Science, Technology, and Society (must be *Physics II* or *Foundations of Science II* [3&4])

Mathematics (*Calculus*)

2. Major Requirements: 16 courses, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

Prerequisite course

Chemistry I or Biology I or Foundations of Science II (3&4)

Additional Required Courses (All fourteen)

Discrete Mathematics

Introduction to Systems and Dynamics

Probability and Statistics

Introduction to Computer Science

Data Structures

Object-Oriented Programming

Circuits

Digital Logic

Computer Architecture

Operating Systems

Embedded Systems

Electronics

Senior Capstone Design Project (8 pts spanning two senior-year semesters – counted as two courses)

Computer Engineering Elective (Choose One)

Computer Networking.

Very Large Scale Integration Circuit Design.

Compilers.

Parallel and Distributed Computing.

Introduction to Databases

Computer Security.

Network Security.

UNIX System Programming.

Robotic Systems.

The Science and Mathematics courses included in the requirements of the Computer Science major also fulfill the requirements of the core curriculum.

3. General Electives (including language courses): 7 Courses

Computer Engineering Majors' Sample Schedule

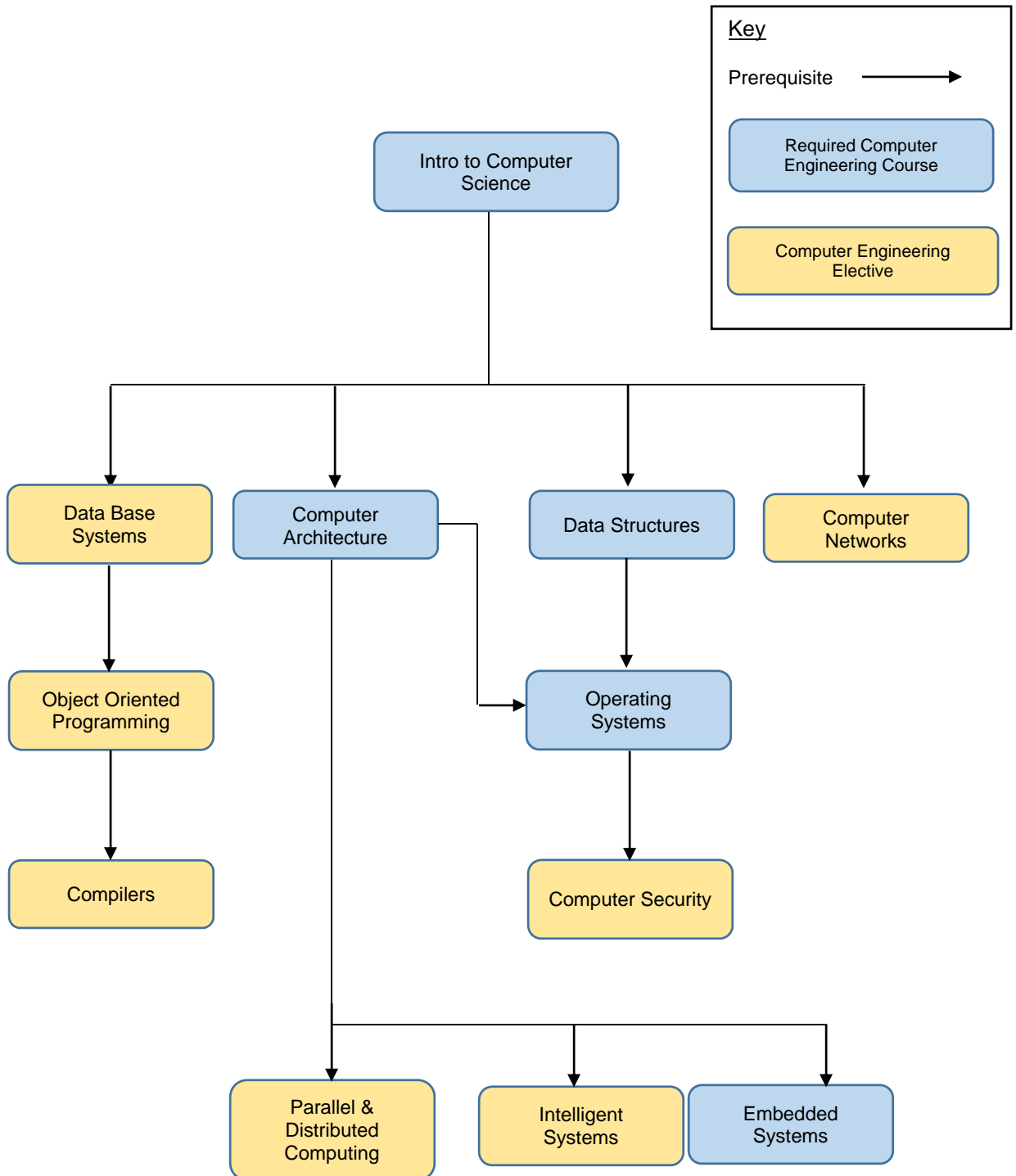
YEAR 1	1	2	3	4
Fall	<i>Global Perspectives on Society I (including Writing Workshop)</i>	Core class (<i>Calculus</i>)	Core class (Physics I)	English or Chinese
Spring	<i>Global Perspectives on Society II (including Writing Workshop)</i>	<i>Introduction to Computer Science</i>	Physics II	English or Chinese

YEAR 2	1	2	3	4
Fall	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	<i>Computer Architecture</i>	<i>Data Structures</i>	Core class or Chinese
Spring	<i>Global Perspectives on Culture II (including Writing Workshop)</i>	<i>Discrete Math</i>	<i>Object-Oriented Programming</i>	Core class or Chinese

YEAR 3	1	2	3	4
Fall	Core class	<i>Operating Systems</i>	<i>Probability and Statistics</i>	<i>Digital Logic</i>
Spring	Core class or GE	<i>Introduction to Systems and Dynamics</i>	<i>Embedded Systems</i>	<i>Circuits</i>

YEAR 4	1	2	3	4
Fall	Core class or GE	<i>Senior Design Project</i>	Electronics	<i>Computer Engineering Elective</i>
Spring	General Elective	<i>Senior Design Project</i>	General Elective	General Elective

Prerequisite Chart for the Computer Engineering Major



Electrical Engineering Major

Electrical Engineering at NYU Shanghai is designed to create technological leaders with a global perspective, a broad education, and the capacity to think creatively. Innovations by electrical engineers touch every aspect of modern life, from the subway systems beneath our cities to the HD televisions on our walls to the smart phones in our pockets. But this process of innovation is never complete, and new challenges await tomorrow's electrical engineers. The Electrical Engineering program draws upon courses across an array of disciplines. The liberal arts core provides the intellectual breadth, a "license to learn," preparing students to thrive in a multicultural globalized world and to learn and adapt quickly in areas that evolve with ever-increasing swiftness. Students not only gain a firm grounding across various science and engineering fields that underscore the technical component of an engineering education, but also draw upon courses to develop an understanding of cultural, political, economic, environmental, and public safety considerations.. These studies often include hands-on coursework in our state-of-the-art laboratories. In addition, the variety of specialized subjects you can investigate through elective coursework — from wireless communication to smart grid power systems — ensures a highly flexible education suited to your particular interests.

1. General Education Core Requirements: 9 courses (see above)

Global Perspective on Society I

Global Perspective on Society II

Social Science Perspectives on China

Global Perspective on Culture I

Global Perspective on Culture II

Chinese Arts

Experimental Discovery in the Natural World (must be Physics I or *Foundations of Science I [1&2]*)

Science, Technology, and Society (must be *Physics II or Foundations of Science II [3&4]*)

Mathematics (*Calculus*)

2. Major Requirements: 16 courses, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

Prerequisite course (One class)

Chemistry I or Biology I or Foundations of Science II [3&4]

Additional Required Courses (All Eleven)

Multivariate Calculus & Differential Equations

Linear Algebra
Probability and Statistics
Introduction to Computer Science
Circuits
Digital Logic
Signals and Systems
Electronics
Electromagnetic Fields and Waves
Senior Capstone Design Project (8 pts. spanning two senior-year semesters – counted as two courses)

Electronic Engineering Elective (Choose Four)

2 electrical engineering courses from the following list of three courses:

Control Systems, Communication Systems, Energy and Power Systems

Control Systems.

Communication Systems.

Electrical Energy and Power Systems.

Instrumentation, Sensors and Actuators.

Robotic Systems.

Very Large Scale Integrated (VLSI) Circuit Design.

Advanced Circuits.

Digital Signal Processing.

Computer Networks.

Embedded Systems.

The Science and Mathematics courses included in the requirements of the Computer Science major also fulfill the requirements of the core curriculum.

3. General Electives (including language courses): 7 Courses

Electrical Engineering Majors' Sample Schedule

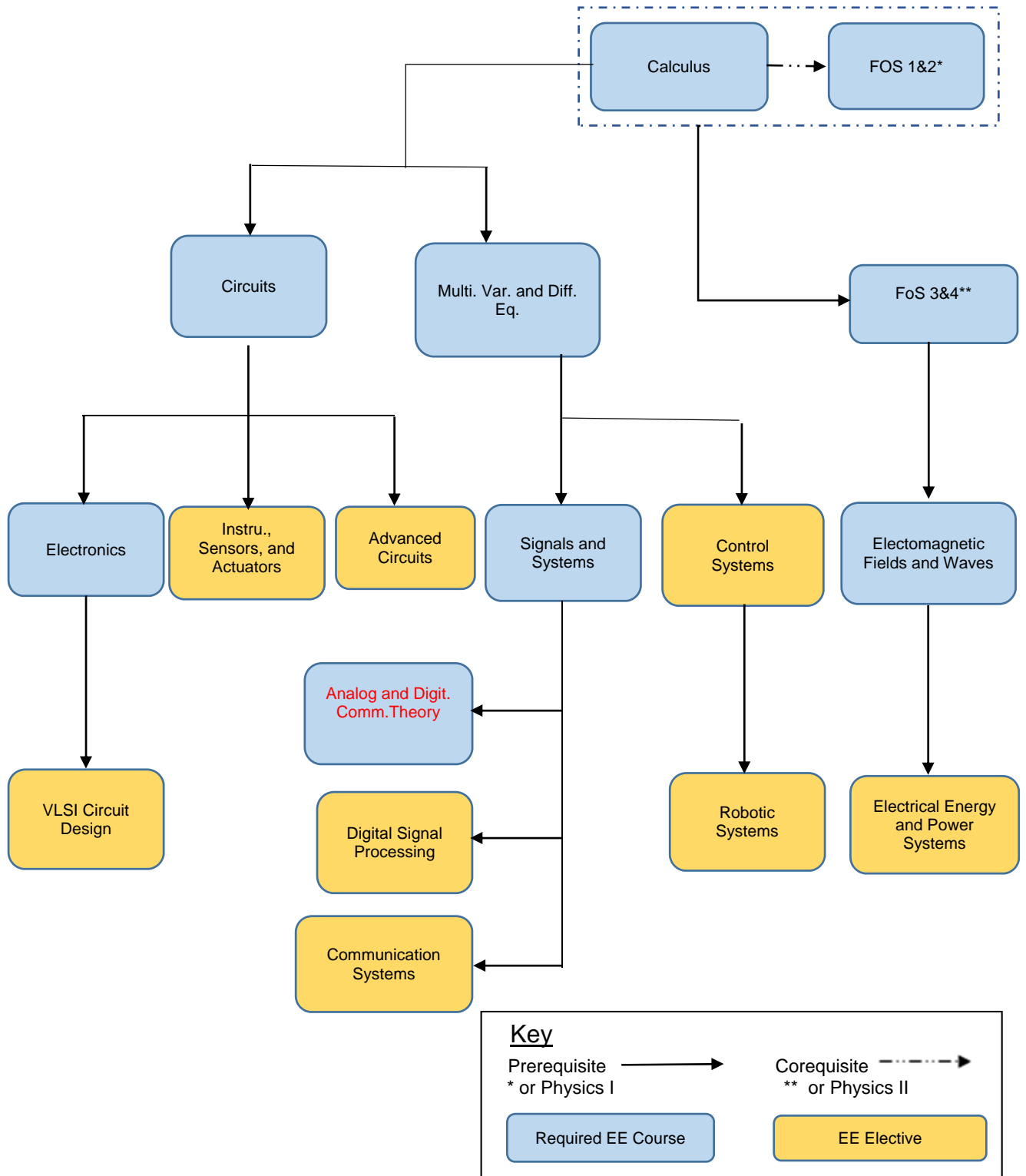
YEAR 1	1	2	3	4
Fall	<i>Global Perspectives on Society I (including Writing Workshop)</i>	Core class (<i>Calculus</i>)	Core class (Physics I)	English or Chinese
Spring	<i>Global Perspectives on Society II (including Writing Workshop)</i>	<i>Introduction to Computer Science</i>	Physics II	English or Chinese

YEAR 2	1	2	3	4
Fall	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	<i>Multivariate Calculus and Differential Equations</i>	<i>Digital Logic</i>	Core class or Chinese
Spring	<i>Global Perspectives on Culture II (including Writing Workshop)</i>	<i>Linear Algebra</i>	<i>Circuits</i>	Core class or Chinese

YEAR 3	1	2	3	4
Fall	Core class	<i>Electronics</i>	<i>Electromagnetic Fields and Waves</i>	<i>Signals and Systems</i>
Spring	Core class or GE	Electrical Engineering Elective	Electrical Engineering Elective	<i>Probability and Statistics</i>

YEAR 4	1	2	3	4
Fall	Core class or GE	<i>Senior Design Project</i>	Electrical Engineering Elective	General Elective
Spring	General Elective	<i>Senior Design Project</i>	Electrical Engineering Elective	General Elective

Prerequisite Chart for the Electrical Engineering Major



5. Social Sciences

Business and Finance Major

To advance in today's global business environment, one must develop an exceptionally broad array of intellectual skills. The modern business environment demands the ability to analyze problems rigorously, to develop innovative and creative solutions, and to work effectively within the context of an organization. That in turn demands an understanding of the cultural and scientific contexts in which businesses operate, alongside an understanding of the techniques by which firms succeed in a competitive economy.

A successful business combines labor and capital to produce a good or service at a price and quality that customers want to purchase. In a complex business, different individuals often take responsibility for different aspects of that endeavor, such as operations management, marketing and sales, information systems management, and financial management. An effective business education should provide students with an overview of all these fields, together with an opportunity to explore some areas in greater depth.

The business and finance major at NYU Shanghai helps students develop knowledge and skills in: corporate finance, investments management, securities trading, financial markets and accounting. It is designed to provide students with a comprehensive preparation for the modern globalized business world. It builds upon the liberal education designed into the NYU Shanghai core curriculum: before entering the major, students will have developed an essential set of skills in mathematics, critical thinking, and oral and written communication. They will also have acquired a familiarity with the general cultural and scientific contexts in which businesses operate. Within the major, students obtain (a) a deeper understanding of the modern global business environment and its economic structure; (b) disciplinary skills in economics, statistics, and accounting; (c) a focused introduction to finance, operations, organizational management, and marketing.

Finance Track

Requirements:

1. **General Education Core Requirements: 9 courses** (see above)

Global Perspective on Society I
Global Perspective on Society II
Social Science Perspectives on China
Global Perspective on Culture I
Global Perspective on Culture II
Chinese Arts
Experimental Discovery in the Natural World
Science, Technology, and Society
Mathematics (*Calculus*)

2. **Major Requirements: 13 courses**, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

Prerequisites courses (Both)

Microeconomics

Statistics for Business and Economics

Business Core classes (All Three)

Economics of Global Business

Principles of Financial Accounting

Foundations of Finance

Required Finance Core class:

Corporate Finance

Business Core Courses (Choose Two)

Management and Organizations

Competitive Advantage from Operations

Introduction to Marketing

Information Technology in Business and Society

Additional Finance electives (Choose Two):

Futures and Options

Debt Instruments and Markets

International Financial Management

The Chinese Financial System

Mergers & Acquisitions

A Non-Finance elective in areas such as (Choose Two):

Accounting

Management

Marketing

A China Business Studies Senior Project

3. **General Electives (including language courses): 10 courses**

Calculus, required for the Business and Finance major, also fulfills the Mathematics requirement of the core curriculum

Business and Finance Majors' Sample Schedule

YEAR 1

	1	2	3	4
Fall	<i>Global Perspectives on Society I (including Writing Workshop)</i>	Core class (<i>Calculus</i>)	Core class	English or Chinese
Spring	<i>Global Perspectives on Society II (including Writing Workshop)</i>	<i>Microeconomics</i>	<i>Statistics for Business and Economics</i>	English or Chinese

YEAR 2

	1	2	3	4
Fall	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	<i>Principles of Financial Accounting</i>	<i>Foundations of Finance</i>	Core class or Chinese
Spring	<i>Global Perspectives on Culture II (including Writing Workshop)</i>	<i>Economics of Global Business</i>	<i>Corporate Finance</i>	Core class or Chinese

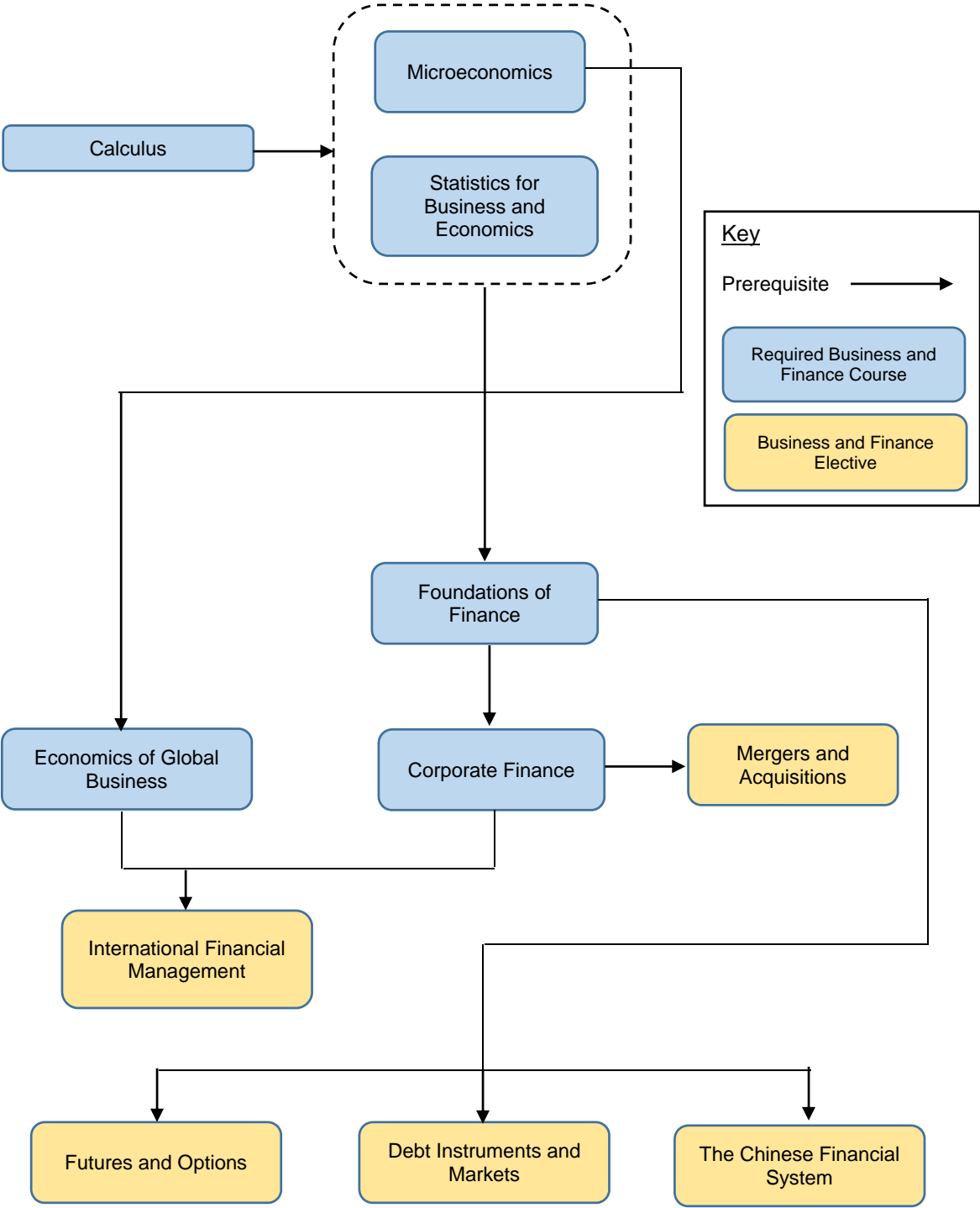
YEAR 3

	1	2	3	4
Fall	Core class or GE	Business Core Elective	Finance Elective	Core class or GE
Spring	General Elective	Business Core Elective	Finance Elective	Core class or GE

YEAR 4

	1	2	3	4
Fall	General Elective	Non-Finance Elective	Non-Finance Elective	General Elective
Spring	General Elective	Senior Project	General Elective	General Elective

Prerequisite Chart for the Business and Finance Major



Marketing Major

Requirements:

4. **General Education Core Requirements: 9 courses** (see above)

Global Perspective on Society I
Global Perspective on Society II
Social Science Perspectives on China
Global Perspective on Culture I
Global Perspective on Culture II
Chinese Arts
Experimental Discovery in the Natural World
Science, Technology, and Society
Mathematics (*Calculus*)

5. **Major Requirements: 13 courses**, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

Prerequisites courses (Both)

Microeconomics
Statistics for Business and Economics

Business Core classes (All Three)

Economics of Global Business
Principles of Financial Accounting
Foundations of Finance

Required Marketing Core class:

Introduction to Marketing

Business Core Courses (Choose Two)

Management and Organizations
Competitive Advantage from Operations
Corporate Finance
Information Technology in Business and Society

Additional Marketing electives (Choose Two):

TBA

A Non-Finance elective in areas such as (Choose Two):

Accounting
Finance
Marketing

A China Business Studies Senior Project

6. General Electives (including language courses): 10 courses

Calculus, required for the Business and Finance major, also fulfills the Mathematics requirement of the core curriculum

Business and Marketing Majors' Sample Schedule

YEAR 1		1	2	3	4
Fall		<i>Global Perspectives on Society I (including Writing Workshop)</i>	Core class (<i>Calculus</i>)	Core class	English or Chinese
Spring		<i>Global Perspectives on Society II (including Writing Workshop)</i>	<i>Microeconomics</i>	<i>Statistics for Business and Economics</i>	English or Chinese
YEAR 2		1	2	3	4
Fall		<i>Global Perspectives on Culture I (including Writing Workshop)</i>	<i>Principles of Financial Accounting</i>	<i>Foundations of Finance</i>	Core class or Chinese
Spring		<i>Global Perspectives on Culture II (including Writing Workshop)</i>	<i>Economics of Global Business</i>	<i>Introduction to Marketing</i>	Core class or Chinese
YEAR 3		1	2	3	4
Fall		Core class or GE	Business Core Elective	Marketing Elective	Core class or GE
Spring		General Elective	Business Core Elective	Marketing Elective	Core class or GE
YEAR 4		1	2	3	4
Fall		General Elective	Non-Marketing Elective	Non-Marketing Elective	General Elective
Spring		General Elective	Senior Project	General Elective	General Elective

Economics Major

Economics is the study of human decision-making, considered in relation to the economic tasks of life. It looks at how individuals within larger social groups, including communities, organizations, markets, and economies, make decisions about how much to work and play, spend and save. Economic analyses also consider how the economic decisions made by one group of people affect the decisions made by others. They then study how the aggregated effects of these decisions impact production, distribution, trade, and the consumption of goods and services across local regions, countries, and the world.

The Economics curriculum at NYU Shanghai is designed to introduce students to these fundamental dynamics of human life and, in doing so, is grounded in three basic pedagogical principles: 1. Undergraduate students must be exposed to the “big ideas” and pressing social issues of our world and given economic frameworks for thinking about them; 2. meaningful study of economics requires being able to think about problems from local, regional, and global perspectives; and 3. effective economic reasoning increasingly involves a multidisciplinary approach combining the best economic thinking with the best thinking in psychology, history, and politics.

Building on these principles, the Economics major is designed to foster rigorous analytical abilities, critical writing and communication skills, and the capacity to interpret and use statistical data—all in the service of developing sound economic reasoning and problem-solving skills. These transferable strengths are of value in a broad array of academic and professional paths, from economics, business, or law, to public service or graduate studies.

Requirements:

1. **General Education Core Requirements:** 9 courses (see above)

Global Perspective on Society I
Global Perspective on Society II
Social Science Perspectives on China
Global Perspective on Culture I
Global Perspective on Culture II
Chinese Arts
Experimental Discovery in the Natural World
Science, Technology, and Society
Mathematics (*Calculus*)

2. **Major Requirements:** 12 courses, as follows:

Not every course listed is taught every semester, and in any given semester other courses may be offered that fulfill this requirement.

Prerequisite courses (Both)

Microeconomics

Statistics for Business and Economics

Required Economics Courses (All Four)

Economics of Global Business.

Mathematics for Economists (Multivariate Calculus and Differential Equations)

Intermediate Macroeconomics.

Econometrics.

Economics Electives (Choose Five)

History of Economic Thought.

Ethics and Economics.

Poverty and Income Distribution.

Economics of Energy and the Environment.

Urban Economics.

Money and Banking.

Financial Crises.

Economic Development.

China Studies Senior Project

3. **General Electives (including language courses):** 11 courses

Economics Majors' Sample Schedule

YEAR 1

	1	2	3	4
Fall	<i>Global Perspectives on Society I (including Writing Workshop)</i>	Core class (<i>Calculus</i>)	Core class	English or Chinese
Spring	<i>Global Perspectives on Society II (including Writing Workshop)</i>	<i>Mathematics for Economists</i>	<i>Microeconomics</i>	English or Chinese

YEAR 2

	1	2	3	4
Fall	<i>Global Perspectives on Culture I (including Writing Workshop)</i>	<i>Economics of Global Business</i>	Core class or GE	Core class or Chinese
Spring	<i>Global Perspectives on Culture II (including Writing Workshop)</i>	<i>Statistics for Business and Economics</i>	<i>Intermediate Macroeconomics</i>	Core class or Chinese

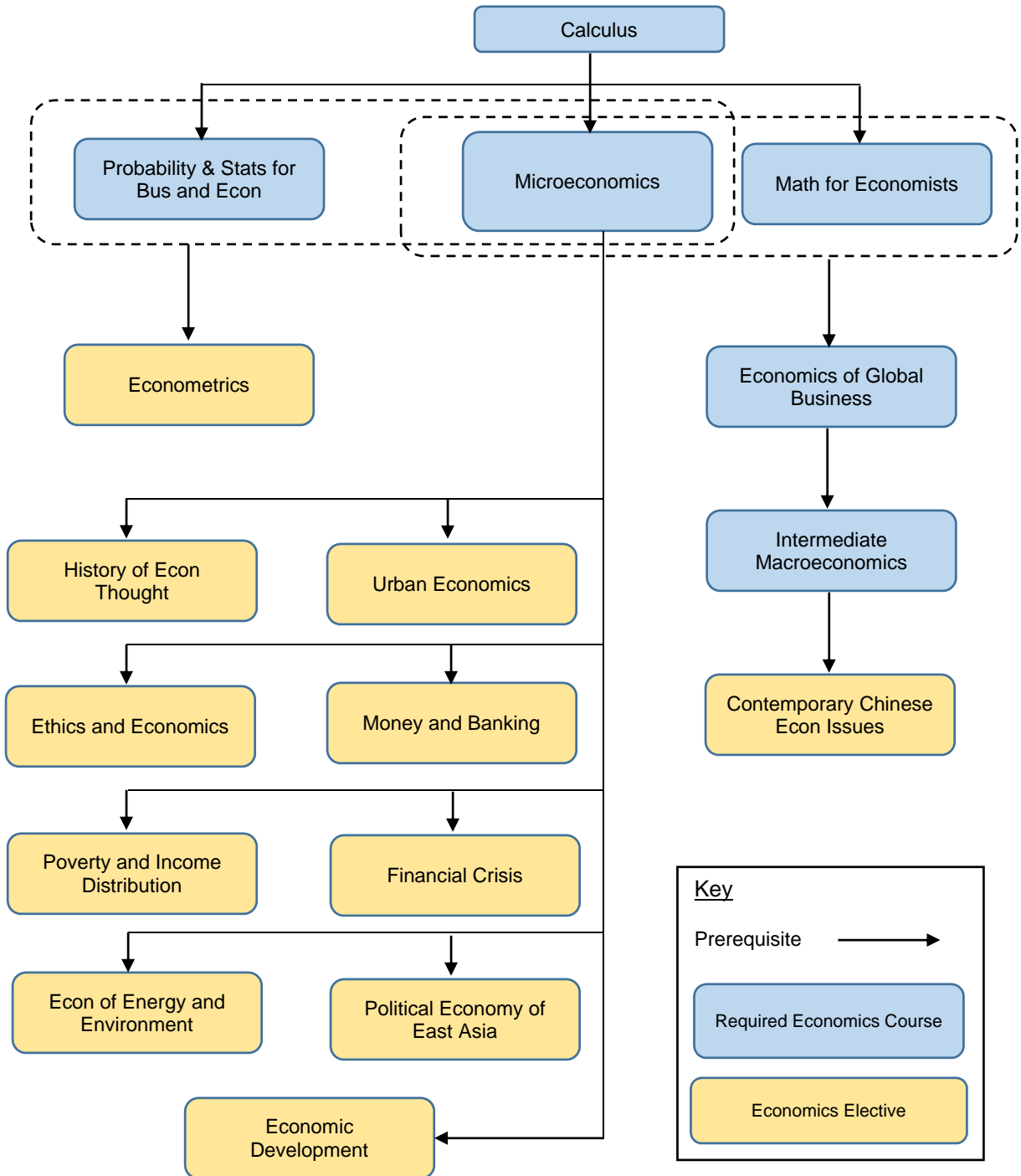
YEAR 3

	1	2	3	4
Fall	Core class or GE	<i>Econometrics</i>	Economics Elective	General Elective
Spring	Core class or GE	Economics Elective	Economics Elective	General Elective

YEAR 4

	1	2	3	4
Fall	General Elective	Economics Elective	Economics Elective	General Elective
Spring	General Elective	Senior Project	General Elective	General Elective

Prerequisite Chart for the Economics Major



Self-Designed Honors Major

Students at NYU Shanghai can apply to craft and complete a Self-Designed Honors major, rather than one of the existing majors at the campus. This major enables a small number of very capable and highly motivated students to pursue a plan of study that brings together courses from more than one NYU department or program. During their sophomore year, students compose their academic plan for the major in consultation with their two faculty advisers for their self-designed program of study as well as with the Associate Dean for Academic Affairs. Their two faculty advisors have to be from different majors and one has to be from a relevant department in New York if more than three of the required classes are from a major that exists in New York but not in Shanghai. By spring of the sophomore year, the plan of study must be submitted to and approved by the Academic Standards Committee.

This NYU Shanghai major serves students who can realize their interdisciplinary goals within the Global Network University drawing on courses from any of the study away sites and portal campuses within the existing NYU Shanghai study away limitations. It is an honors major, which has prerequisites for entry (3.75 GPA; students must maintain a 3.65 GPA to remain in the major) and entails a heavy commitment to honors-level work, including independent research under faculty supervision.

Additional Majors and Minors at New York University Shanghai

Requirements for an Additional or Double Major

Successful completion of an additional major requires completing all the courses listed under the major or track requirements for that major. This can be as many as twenty or as few as nine depending on the major.

The same requirements, including the maintenance of a minimum grade point average of 2.0, apply to the second major as to the first. In some cases, courses may be applicable to both majors. Normally no more than two courses may be approved for double counting. Courses listed as prerequisites for the major do not count toward this limit. Students must obtain written approval for the shared course(s) from the Associate Dean for Academic Affairs. The second major is declared in the same way as the first but not before the fall of the student's senior year.

Students should consult with their advisor before attempting a double major as the requirements of the first major and the second limit the options for students to complete two majors in the standard 128 credits. In addition, in some cases the Chinese language requirement, which consists of the equivalent of four semesters (the "Chinese Language Requirement"), further limits the ability to complete two majors.

The ability to satisfy the requirements for an additional major cannot be guaranteed for any student and will be based upon course availability and the time the student is willing to invest to satisfy all of the requirements of the additional major. In some cases this might require more than 8 semesters of undergraduate study.

Regulations Pertaining to both Major and Minor

The major and minor requirements to be followed are those stated in the major sections of the Bulletin in effect during the semester of the student's first registration in the College. No credit toward the major or minor is granted for grades of C- or lower, although such grades will be computed into the grade point average of the major or the minor, as well as into the overall grade point average. Only courses passed with a grade of C or higher may serve as a prerequisite for a higher level course.

No course to be counted toward the major or minor or used as a prerequisite may be taken on a pass/fail basis. (See "Pass/Fail Option" under Academic Policies in this Bulletin.)

In order to ensure that students do not have to compete for access to their required courses, registration priority is given to students who are registering for courses in their primary major. Although the university encourages the exploration of other disciplines, access to courses outside a student's primary major (including those courses that fulfill requirements for an additional major, minor, etc.) is on a space-available basis and is not guaranteed.

Requirements for Minors

Students may minor in subjects outside their major or disciplinary area. A minor in a secondary subject enables a student to acquire a useful understanding of concepts and analysis without the same degree of coverage as would be obtained in a major. A grade of C or better is required for a course to be counted toward a minor. If a student fails a course required for the minor, the course must be retaken at NYUSH; a course taken outside the University will not normally be allowed to substitute for a minor requirement. No course for the minor may be taken as pass/fail. Student may not use Core Curriculum classes to fill minor requirements and may only double count one course used for minor requirements for their major or an additional minor requirement.

Students interested in one of the minors offered should consult with their advisor to plan a course of study that meets their needs. Each minor track consists of at least four 4-point courses. Prerequisite and disciplinary requirements cause some minors to require more than four classes.

Students should discuss their minor plans with their advisors. It is best to concentrate on completing breadth and general education requirements in the first two years as interest in minors may change as students take classes in different disciplines and changing minors after taking some of the courses may delay graduation for some students.

Students should request approval for a minor in the spring of their sophomore year by completing the minor declaration form available in the Registrars (Office). Students that have approval for pursuing a minor receive preference in registering for classes that meet that minor's requirements over those that do not (and who do not need to take it for their major). Students may declare more than one minor but may only receive preferred

enrolment for one. Students may declare a minor up to the last semester before graduation but should do it earlier to receive the benefits described above.

Course offerings are subject to the availability of faculty. Therefore, it is not possible to guarantee that any particular course listed will be offered in a particular academic year. If failure to offer a course in a student's approved minor will delay their graduation they should consult with their advisor to consider available options.

The courses required for NYU Shanghai Minors are:

Biology Minor

Students choose from two concentration areas for the Biology Minor:

A. Molecular and Cell Biology Minor:

Requirements:

Foundation of Science I (1+2)
Foundation of Science II (3+4)
Foundation of Science III (5+6)
Applied Cell Biology

B. Genomics and Bioinformatics Minor:

Requirements:

Foundation of Science I (1+2)
Foundation of Science II (3+4)
Foundation of Science III (5+6)
Introduction to Genomics and Bioinformatics
Microbiology and Microbial Genomics, or Genomics and Bioinformatics, or Systems Biology

Business Minor

Requirements:

Microeconomics
Economics of Global Business
Calculus
Statistics for Business and Economics
Principles of Financial Accounting
One of the following courses:
Management and Organizations or
Introduction to Marketing or
Information Technology in Business and Society
Competitive Advantage from Operations

Economics majors must complete two of the additional courses listed below to complete the minor within the double counting limits.

Foundations of Finance

Information Technology in Business and Society
Management and Organizations
Introduction to Marketing
Competitive Advantage from Operations

Chemistry Minor

Requirements:

Foundation of Science I (1+2)
Foundation of Science II (3+4)
Foundation of Science III (5+6)
Organic Chemistry I
Organic Chemistry II

Computer Science Minor

Requirements:

Intro to Computer Programming
Data Structures
Computer Organization and Architecture
And ONE course selected from the following:
Operating Systems
Introduction to Game Programming
Digital Logic
Computer Networks
Parallel and Distributed Computing

Chinese minor

Requirements:

16 Chinese language course points through at least the Advanced II level.
Elementary I and II do not count toward fulfilling the minor requirements. Typical plan of study: *Intermediate I, Intermediate II, Advanced I, and Advanced II.*

Computer Science Minor

Requirements:

Intro to Computer Programming
Data Structures
Computer Organization and Architecture
And ONE course selected from the following:
Operating Systems
Introduction to Game Programming
Digital Logic
Computer Networks
Parallel and Distributed Computing

Economics Minor

Requirements:

Microeconomics

Economics of Global Business

Statistics for Business and Economics

Intermediate Macroeconomics

Two additional 4-point courses from the Economics elective list.

Global China Studies minor:

Requirements:

Four classes from the required and elective list of Global China Studies courses, of which at least one must be from the required list. Students may take up to two advanced or post-advanced language courses in fulfillment of this minor.

History Minor

Requirements:

Four classes from the required and elective list of Humanities major History courses.

Humanities Minor

Requirements:

Four classes from the required and elective list of Humanities major courses.

Interactive Media Minor

Requirements:

Introduction to Physical Computing and Computational Media

Communications Lab

Two classes from the Interactive Media elective list

Literature Minor

Requirements:

Four classes from the required and elective list of Humanities major Literature courses.

Mathematics Minor

Requirements:

Four 4-credit mathematics courses at the introductory calculus level or higher. Of current math offerings, Mathematics for Economists and Mathematical Functions would NOT count for the minor.

Natural Science Minor

Required:

Foundation of Science I (1+2)

Foundation of Science II (3+4)

Neural Science Minor

Requirements:

Foundation of Science I (1+2)

Foundation of Science II (3+4)

Foundation of Science III (5+6)

Introduction to Neural Science

Behavioral and Integrative Neuroscience or Cellular and Integrative Neuroscience

Philosophy Minor

Requirements:

Four classes from the required and elective list of Humanities major Philosophy courses.

Physics Minor

Requirements:

Foundation of Science I (1+2)

Foundation of Science II (3+4)

Foundation of Science III (5+6)

Two Physics elective courses

Global Network University Minor

Students can apply to craft and complete a Global Network Minor, using classes from one or more of the eleven Study Away Sites in the Global Network. This option enables capable and highly motivated students to pursue a plan of study that brings together courses from more than one NYU department or program taught at a study away site. During their sophomore year, students compose their academic plan for the minor in consultation with the Assistant Dean for Global Programs. By spring of the sophomore year, the plan of study must be submitted to the ADGP and approved by the Associate Dean for Academic affairs. Approval of the plan does not guarantee acceptance to study at the Study Away Site, that required courses will be available or open, or the ability to study for an additional semester at the site to complete the minor.

These minors serve students who can realize their interdisciplinary goals within the Global Network University drawing on courses from any of the study away sites within the existing NYU Shanghai study away limitations. Even if all of the classes are from a single department in one of the other portal campuses or is identical to a minor offered on one of those campuses, the GNU minor is an NYU Shanghai minor and will be identified as such on the student's transcript. The other requirements and limitations for these minors are identical with the standard ones identified above for all minors.

GNU minors may be completed using courses taking at the associated Study Away Site. Courses and therefore minor availability may vary by semester, students should see each

sites website for specific classes, and plan with their academic advisor how to complete the minor:

Portal Campus Minor

Students can apply to attempt a Portal Campus Minor, using classes from one of the two Portal Campuses in the Global Network. These minors must meet the requirements set out in the relevant college bulletin by the offering department at the Portal Campus. During their sophomore year, students compose their academic plan for the minor in consultation with the Assistant Dean for Global Programs. By spring of the sophomore year, the plan of study must be submitted to and approved by the Associate Dean for Academic affairs. Approval of the plan does not guarantee acceptance to study at the Portal Campus, that required courses will be available or open, or the ability to study for an additional semester at the Portal Campus to complete the minor.

Even though the courses used and requirements met for the Portal minor are those of the Portal Campus the minor is an NYU Shanghai minor and will be identified as such on the student's transcript. The other requirements and limitations for these minors are identical with the standard ones identified above for all minors.

Part Seven: Course Descriptions

ART

ART-SHU 210 *Introduction to Studio Art - Chinese Traditional Methods in Contemporary Art.* This course will be an introduction to studio art for students who want to learn traditional Chinese art forms with contemporary expression, to traverse both cultural and temporal barriers of visual arts. These include calligraphy and ink painting as seen from a modern perspective. Students will examine the content of artwork, including ideas in contemporary and traditional art, both Chinese and international, and build various skills to translate ideas into reality. The course includes a study of ancient Chinese paintings, drawings of still-lives, as well as visits to local artists, galleries, and museums. Class time will be devoted to individual projects and critiques, lectures, and group discussions. This course is open to all students with or without an art background. *Prerequisite: None.*

ART-SHU 301 *Introduction to Photography I.* This course will be an introduction to the use of photography as a medium of documentation and art expression. The student will use photography to witness and create images to begin to understand their experience in Shanghai, and understand photography as an art medium. Basic digital photography techniques will be taught, including use of a digital camera and Photoshop. Lectures, technical demonstrations, and group critiques, as well as presentations by guest photographers will be included. Assignments on individual photographers and artists will be required. This course is for beginning photography students with minor or no experience with photography. *Prerequisite: None.*

ART-SHU 380 *Projects in Photography.* In 1836, Talbot, the English inventor, thought of photography as a “drawing which makes itself.” In contemporary times, photography is not only a recording of the real world; it transforms the concepts of the artist into reality. This class provides an introduction to photography and ink impression as dual lenses to study contemporary Chinese society. Shanghai’s sprawling metropolis and interspersing antiquity offer a unique opportunity to document and create personal reflections of a foreign and fast-changing society. As a modern tool, photography has been the traditional medium that captures moment-to-moment insights, and will be heavily studied as an art form. Less known as a documentary tool, but no less powerful than photography, is the technique of ink impression. This traditional Chinese art form provides a new way of capturing the city by using Chinese ink to create impressions of solid objects. In the studio, students are required to critique the works of peers, works of their own, and images sourced from current exhibitions of contemporary photography. Outside the studio, the group will examine major historical movements in contemporary photography. The works of iconic photographers who explored the city as reality and idea are selected to provide framework and vocabulary to articulate students’ own photographic investigations. Students will take on personal projects using photography, ink impression, or a combination of both media. This course leads students to use photography as an art tool to explore cultures and individual expression, emphasizing concepts of art while touching on some technical aspects of photography. This unit is subject to adjustments depending on the availability of guest speakers and other factors. *Prerequisite: Instructor Consent Required.*

ART-SHU 1910 *Projects in Studio Art - Chinese Traditional Methods in Contemporary Art.* This course is designed for studio artists who want to create a succinct body of artwork while studying in Shanghai. Students will create contemporary artworks using traditional Chinese art forms to traverse both cultural and temporal barriers of expression, creating a unique integrated style of work. Students of traditional Western methods of art making, including drawing, painting, sculpture, and printmaking, are going to be asked to work out of traditional Chinese art methods, including calligraphy and ink painting. Also, students will have the opportunity to combine Western and Chinese methods of art making. Students will examine the content of artwork, including ideas in contemporary and traditional art, both Chinese and international, and build various skills to translate ideas into reality. The course includes a study of ancient Chinese paintings, drawings of still-lives and live models, as well as visits to local artists, galleries, and museums. Class time will be devoted to individual projects and critiques, lectures, and group discussions. As a final project,

students will integrate their living experiences in Shanghai with personal experience and/or the societal landscape, to create a substantial body of artwork for a group exhibition. This course is open to students who have an art background and upon the approval of the professors. *Prerequisite: Instructor Consent Required.*

BIOLOGY

BIOL-SHU 210 *Applied Cell Biology*. Understanding the fundamental methods for growing and studying cells—the smallest units of life—is basic to biology. This course introduces students to the methods used to study cell structure and function. In the laboratory, students study the fundamentals of cell biology and the experimental approaches used to examine the cell. Topics cover cellular, subcellular, and macromolecule localization; biochemical analysis of the cell; and cell culture techniques. Accurate record-keeping, reports, and presentations are emphasized. *Prerequisite CCSC-SHU 114.*

BIOL-SHU 250 *Organismal Biology*. The array of organisms that populates the globe is astounding in its diversity and adaptability. This course uses fundamental concepts from the *Foundations of Science* curriculum to examine essential elements of animal physiology, including adaptations to environments such as deserts. This course develops an understanding of the relationship between structure and function of the organism; how structure develops through evolutionary and developmental processes; and how structure is related to the environment surrounding the organism. *Prerequisite CCSC-SHU 114.*

BIOL-SHU 251 *Biostatistics*. The ability to organize and analyze biological and behavioral science data is an essential research tool. This course provides an introduction to the use of statistical methods for analyzing this data. It introduces methods for describing and displaying data, the role and use of probability in describing and understanding living systems, hypotheses testing, and how to design experiments. Biological and behavioral science data and R—a free, open-source statistical software package—are used to gain proficiency with these tools. *Prerequisite BIOL-250.*

BIOL--SHU 252 *Immunology*. Introduction to immunology, with attention to the genetics, molecular, and cell biology of antibody production; T-cell mediated immune responses; and innate immunity. Topics include the nature of antigens, hypersensitivities, transplantation, cytokines, autoimmunity, cancer, response to infection, and vaccines. *Prerequisite BIOL-250.*

BIOL--SHU 258 *Evolution*. Evolution encompasses the patterns and mechanisms that explain the diversity of organisms we observe today and during the millions of years of the geological record. Evidence is reviewed that demonstrates the common ancestry of all living things, including humans, and the mechanisms, such as natural selection, that are required and sufficient to explain this pattern of ancestry, diversification, adaptation, speciation, and biogeographic distribution. The course also uses computer and mathematical modeling to explore the fundamentals of population genetics, molecular evolution, phylogenetic systematics, and the evolution of developmental systems. *Prerequisite BIOL-250.*

BIOL--SHU 261 *Genomics and Bioinformatics*. Fueled by recent advances in technical approaches to data collection and analysis, the biological sciences have entered a new era in which vast amounts of genome-scale sequence and functional data are becoming available for a large number of species. These data are allowing scientists to explore biological function on an unprecedented scale. Familiarity with the fields of genomics and bioinformatics, which impact society on all levels, is vital for the next generation of scientists. This survey course introduces students to a broad range of topics in the fields of genomics and bioinformatics through lectures and hands-on exercises that use fundamental principles of chemistry, computer science, mathematics, and physics to understand organismal diversity through analyses of genomes. *Prerequisite BIOL-250.*

BIOL--SHU 262 *Systems Biology*. This course focuses on methods to integrate the diverse data of complex networks and pathways developed from genomics, proteomics, and metabolomics and to understand how they work together forming a system with definable phenotypes. Global approaches as well as mathematical and statistical modeling to data collection and analyses are performed. *Prerequisites BIOL-250 and 261.*

BIOL--SHU 263 *Developmental Biology*. Multicellular organisms undergo a series of complex temporal and spatial changes in gene expression following fertilization, which results in the highly organized, coordinated cell divisions needed for growth and development. This course introduces students to the

principles and experimental strategies of developmental biology. It covers the cellular and molecular basis for patterning in the embryo; the determination of cell fate; cell differentiation; the genes controlling these events; how the genes are identified and studied; and the cellular proteins that effect shape, movement, and signaling among cells. *Prerequisite BIOL-250.*

BIOL--SHU 264 *Genetics.* Why do offspring often exhibit physical features of their parents? Why do combinations of certain features in offspring translate into specific characteristics that either enhance or diminish the organism's fitness? Answers to questions such as these fall partly within the discipline of genetics, which is the study of heredity. Principles from the *Foundations of Science* curriculum and *Organismal Biology* provide a framework for learning about classical genetics, chromosome structure and mutation, gene function and regulation, and aspects of molecular and developmental genetics. Recent studies in human genetics and their applications, particularly to health-related issues, are also investigated. *Prerequisite BIOL-250.*

BIOL--SHU 265 *Microbiology and Microbial Genomics.* A comprehensive description of microbes, the most abundant and diverse organisms on the planet. Organized into four modules: the microbial cell, microbial genomics, microbial development and adaptation, and microbial interactions with the host and the environment. Through lectures and critical analysis of primary literature, students are led to realize how the advent of genomics has revolutionized microbiology, a scientific discipline that is more than a century old. *Prerequisite BIOL-250.*

BUSINESS AND FINANCE

BUSF- SHU 101 *Statistics for Business and Economics.* This course introduces students to the use of statistical methods. Topics include: descriptive statistics; introduction to probability; sampling; statistical inference concerning means, standard deviations, and proportions; correlation; analysis of variance; linear regression, including multiple regression analysis. Applications to empirical situations are an integral part of the course. *Prerequisite: None.*

BUSF- SHU 201 *Global Perspectives on Enterprise Systems.* This course compares the development of rich and “emerging market” societies over time. Through both macro- and micro-economic perspectives, students examine political, cultural, and economic similarities and differences of national enterprise systems, paying special attention to impacts of government, financial institutions, entrepreneurship and management. *Prerequisite: None.*

BUSF- SHU 202 *Foundations of Finance.* Microeconomics and Statistics for the Social and Behavioral Sciences. A rigorous course that develops the basic concepts and tools of modern finance. It explores in detail basic concepts of return and risk with a view to understanding how financial markets work and how different kinds of financial instruments are valued. These instruments, including equities, fixed income securities, options, and other derivative securities, become vehicles for exploring various financial markets and the utilization of these markets by managers in different kinds of financial institutions to enhance return and manage risk. *Prerequisites BUSF-101 and ECON-150.*

BUSF- SHU 203 *Industrial and Organizational Psychology.* Personal, social, and environmental factors related to people’s attitudes and performance in industry and other organizations. Topics include personnel selection and evaluation, training and development, attitudes and motivation, leadership, group dynamics, organizational structure and climate, and job design and working conditions. *Prerequisite: None.*

BUSF- SHU 204 *Innovation and Design.* Creativity and innovation are the key drivers of success for many of today’s leading companies. This course will focus on developing breakthrough design thinking, an essential element of such companies’ creative culture. The course provides many opportunities to apply these new ways of thinking through class exercises and a course project, where students develop creative concepts for an assigned topic. *Prerequisite: None.*

BUSF- SHU 205 *Information Technology in Business and Society.* Students in this course learn the essential tools used by today’s knowledge workers, including spreadsheet modeling and analysis and database querying. They learn to recognize the large-scale systems that run modern organizations, and how to evaluate IT investments in products, services, and systems. They learn about the economics of information pricing, technological lock-in, and network effects. And they discuss a set of special topics, which may include digital music, information privacy, data mining and digital piracy.

BUSF- SHU 206 *Doing Business in China.* Subjects include the legal environment and trends, the impact of China’s WTO membership, product sourcing and quality control, sales and marketing, methods of operations, and intellectual property rights. Case studies focus on areas such as alternative energy, media, and real estate are identified. Emphasis is placed on the role of and the need for cultural and historical understanding of the market as a key to success. *Prerequisite: None.*

BUSF- SHU 250 *Principles of Financial Accounting.* Develops students’ abilities to understand business transactions and financial statements and to determine the most appropriate financial measures for these events. Investigates the underlying rationale for accounting practices and assesses their effectiveness in providing useful information for decision making. Emphasis is placed on accounting practices that purport to portray corporate financial position, operating results, cash flows, manager performance, and financial strength. *Prerequisite: None.*

BUSF- SHU 301 *Management and Organizations.* This course addresses contemporary management

challenges stemming from changing organizational structures, complex environmental conditions, new technological developments, and increasingly diverse workforces. It highlights critical management issues involved in planning, organizing, controlling, and leading an organization. Ultimately, it aims to strengthen students' managerial potential by providing general frameworks for analyzing, diagnosing, and responding to both fundamental and complex organizational situations. It also provides opportunities for students to enhance their communication and interpersonal skills, which are essential to effective management. The structure of the course encourages learning at multiple levels: through in-class lectures, exercises, and discussions; in small teams carrying out projects; and in individual reading, study, and analysis.

Prerequisite: None.

BUSF- SHU 302 *Introduction to Marketing.* Evaluates, from the management point of view, marketing as a system for the satisfaction of human wants and a catalyst of business activity. Deals with the subject at all levels, from producer to consumer, and emphasizes the planning required for the efficient use of marketing tools in the development and expansion of markets. Concentrates on the principles, functions, and tools of marketing, including quantitative methods. Utilizes cases to develop a problem-solving ability in dealing with specific areas. *Prerequisite: None.*

BUSF- SHU 303 *Corporate Finance.* Foundations of Finance. Helps students develop an analytical framework for understanding how organizations make investment and financing decisions. There is an emphasis on understanding the theory and its applications to the real world as well as appreciating the limitations of the tools in practical settings. Specific topics include capital budgeting, investment decision rules, discounted cash flow valuation, real options, cost of capital, capital structure, dividend policy, and valuation methods such as WACC and APV. *Prerequisite: BUSF-202*

BUSF- SHU 304 *Futures and Options.* This course covers the theoretical and practical aspects of futures, options, and other derivative instruments, which have become some of the most important tools of modern finance. While the primary focus is on financial derivatives, contracts based on commodities, credit risk, and other nonfinancial variables are also covered. Topics include market institutions and trading practices, valuation models, hedging, and other risk management techniques. The course requires relatively extensive use of quantitative methods and theoretical reasoning. *Prerequisite: BUSF-202*

BUSF- SHU 305 *Debt Instruments and Markets.* This course describes important fixed income securities and markets and develops tools for valuing debt instruments and managing interest rate risk. The course covers traditional bond pricing, term structure, and interest rate risk concepts. It also covers the analytical and institutional aspects of fixed income derivatives, such as interest rate swaps, forwards, futures, and options, as well as bonds with embedded options and mortgage-backed securities. Topics also include credit risk, bond portfolio, management, financial engineering, and international fixed income. The study of fixed income is quantitative and technical by nature. *Prerequisite: BUSF-202*

BUSF-306 *The Chinese Financial System.*

Prerequisite: BUSF-202.

BUSF- SHU 350 *Principles of Managerial Accounting.* Introduces students to the evolving role that managerial accounting has played and is expected to play in servicing the informational needs of managers in the planning, organizing, and controlling functions. Highlights the attention-directing, decision-support, and decision-influencing roles of managerial accounting, while helping students learn to structure business decisions systematically and identify the information relevant to a decision. Trains students to think analytically about improving existing systems to further a firm's competitive advantage. *Prerequisite: None.*

BUSF- SHU 351 *Competitive Advantage from Operations.* Designed to give students a better understanding of how firms can gain competitive advantage from their operations function. Typically this requires the firm to achieve, at a minimum, cost, quality, and ecological parity; responsiveness and adaptability to customer needs and desires; rapid time to market; process technology leadership; and sufficient and responsive capacity. A problem-solving framework is developed that enables students to

undertake managerial and technical analysis that should result in the desired comparative advantage. Both service and manufacturing case examples are utilized. *Prerequisite: None.*

BUSF- SHU 352 *Mergers and Acquisitions.* This course presents the theories and empirical evidence on mergers, acquisitions and restructuring, and analyzes the effects of various policy options on the stock values of acquirer and target companies. Findings about the reaction of stock prices to information on control transactions are used to analyze the effects of various policy options in such transactions. Topics related to M&A include evaluating acquisition targets, methods of payment in acquisitions, acquisition strategies, the use of leverage in acquisitions and the effects of acquisitions on bond values, major legal issues, case law, and defensive measures against hostile acquisitions. The course combines lecture material, case analysis, quantitative and qualitative analysis, and discussions of relevant news of such transactions. There is an emphasis on fundamental concepts of valuation and other areas of corporate finance related to M&As. *Prerequisite: BUSF-303*

BUSF- SHU 353 *International Financial Management.* This course examines the operation of international currency exchange and capital markets and applies financial management principles to the financial decisions of multinational corporations. It addresses such topics as economic determinants of exchange rates, currency market efficiency, exchange rate forecasting, techniques for measuring and managing exposure to exchange and political risk and financing alternatives and capital budgeting decisions of multinational corporations. Readings and case studies are employed. *Prerequisites: BUSF-303 and ECON-250*

BUSF- SHU 10J *Innovation and Creativity.* To compete today in a fast-changing world, organizations and individuals need a steady stream of innovative strategies and unexpected solutions to stay ahead of the game—solutions that revive stagnant markets or completely reinvent the competitive dynamics of an industry. This course is about fostering a culture of creative thinking that provides the framework and motivation to generate those strategies and execute those solutions. It is an essential skill for any student with the desire to transform organizational processes and behaviors, and a willingness to challenge the status quo. *Prerequisite: None*

CHEMISTRY

CHEM- SHU 201 *Organic Chemistry I*. This course uses an interactive, problems-based approach to study the structure and bonding of organic materials, conformational analysis, stereochemistry, and spectroscopy, topics that partly trace their roots to the development of quantum theory. The topics covered include basic reaction mechanisms such as substitution and elimination, and the reactions of aliphatic and aromatic hydrocarbons, alcohols, ethers, amines, carbonyl compounds, and carboxylic acids. The course incorporates modern analytical methods that are the cornerstone of contemporary organic chemistry. *Prerequisite CCSC-SHU 110*

CHEM-SHU 250 *Organic Chemistry II*. This is a continuation of *Organic Chemistry I*, with an emphasis on multifunctional organic compounds, including topics of relevance to biochemistry and biological systems, such as carbohydrates, amino acids, peptides, and nucleic acids. The course continues the emphasis on modern analytical methods that are the cornerstone of contemporary organic analysis, with added emphasis on their application to biology and biological chemistry. *Prerequisite CHEM-SHU 201*

CHEM- SHU 281 *Biochemistry I*. This course offers deeper and more complete treatments of the chemistry of living cells and biological chemistry than in the Foundations of Science courses. Topics include structure and function of proteins, lipids, carbohydrates, and nucleic acids; enzyme structure, mechanism and regulation of enzyme activity, and membrane structure and transport; mechanisms of cellular processes and cellular physiology, including ion channels and pumps, cell motility, and the immune response. *Prerequisite CHEM-SHU 201*

CHEM- SHU 282 *Biochemistry II*. Building on the lessons of Biochemistry 1, Biochemistry 2 emphasizes analysis of basic metabolic pathways, including glycolysis, electron transport, and oxidative phosphorylation, as well as mechanisms of metabolic regulation and integration. *Prerequisite CHEM-281*

CHEM- SHU 285 *Experimental Biochemistry*. Introduction to molecular analysis of biomolecules. Selected experiments and instruction in analytical techniques used in biochemical research, including chromatography, spectrophotometry, and electrophoresis; isolation and characterization of selected biomolecules; kinetic analysis of enzymatic activity; and analysis of protein-protein and protein-DNA interactions that direct basic biochemical pathways. *Prerequisite CHEM-SHU 282*

CHEM- SHU 301 *Physical Chemistry: Quantum Mechanics and Spectroscopy*. An introduction to quantum mechanics—general principles and applications to important model systems. Covers electronic structure of one- and many-electron atoms, theory of chemical bonding in diatomic and polyatomic molecules. Includes principles and applications of molecular spectroscopy: rotational, vibrational, electronic, and nuclear magnetic resonance. Elements of photochemistry are also included. *Prerequisites CCSC-SHU 114 and MATH-SHU 124*

CHEM- SHU 302 *Physical Chemistry: Thermodynamics and Kinetics*. Develops the close connection between the microscopic world of quantum mechanics and the macroscopic world of thermodynamics. Topics include properties of gases, kinetics, elementary statistical thermodynamics, and thermodynamics of single and multicomponent systems. *Prerequisites CCSC-SHU 114 and MATH-SHU 124*

CHEM- SHU 310 *Biophysical Chemistry*. Applications of physical and chemical principles to topics of biochemical and biological interest with an emphasis on the basic principles underlying biophysical techniques that are used to study important macromolecules such as proteins and nucleic acids. Topics include molecular spectroscopic techniques such as light absorption, fluorescence, and circular dichroism, as well as nuclear magnetic resonance and vibrational spectroscopy. Applications of these methods to important biophysical, biochemical, and biological problems of current interest such as protein folding, imaging, and protein-DNA and protein-protein interactions are discussed. *Prerequisites CHEM-SHU 251, 282, and 301*

CHEM- SHU 312 *Organic Analysis*. Emphasizes the application of spectroscopic methods in organic chemistry in determining molecular structure, including proton and carbon NMR, infrared spectroscopy, ultraviolet-visible spectroscopy, modern methods of mass spectroscopy, and chiroptical spectroscopy. This course is particularly suitable for chemists interested in pharmaceutical fields of research and development, and applications to studies of the chemistry, properties and interactions of biologically important molecules. *Prerequisite CHEM-SHU 251*

CHEM SHU 350 *Physical Chemistry Laboratory*. Introduction to the principles and practices of experimental methods widely used in analytical and research laboratories. Emphasizes understanding of background physicochemical theory, as well as capabilities and limitations of methods and interpretations of data. Covers instrumental methods, such as UV/visible spectroscopy, FT-IR, NMR, and fluorescence, for the systematic characterization of compounds and the use of interfaced computers for data collection and spreadsheet analysis. Studies also include an introduction to computer modeling of molecular properties. Optional experiments include fluorescence studies of protein denaturation and laser studies of excited state kinetics. *Prerequisites CHEM-SHU 301 and CHEM-SHU 302*

CHEM- SHU 410 *Inorganic Chemistry*. Studies of methods in inorganic chemistry that make use of symmetry to describe bonding and spectra of inorganic compounds with an interdisciplinary emphasis whenever feasible. Reactions and kinetics are also discussed for inorganic, organometallic, and bioinorganic compounds. Selected topics in main group chemistry are also included. *Prerequisites CHEM-SHU 201, 301 and 302*

CHINESE LANGUAGE

CHIN- SHU 101 *Elementary Chinese I*. This course is the first part of a one-year elementary-level Chinese course designed for students who have no or almost no knowledge of Mandarin Chinese. It is designed to develop language skills in listening, speaking, reading, and writing as it relates to everyday life situations. The objectives of the course are: (1) to master the Chinese phonetic system (pinyin and tones) with satisfactory pronunciation; (2) to understand the construction of commonly used Chinese Characters (both simplified and traditional) and learn to write them correctly; (3) to understand and use correctly basic Chinese grammar and sentence structures; (4) to build up essential vocabulary; (5) to read and write level appropriate passages (100-150 characters long); and (6) to become acquainted with aspects of Chinese culture and society related to the course materials. *Prerequisite: None.*

CHIN- SHU 101S *Elementary Chinese I - FoS1*. This course is a specially-designed 2-credit elementary-level Chinese course for students enrolled in Foundations of Science who have no or almost no knowledge of Mandarin Chinese. It covers the first half of the 4-credit Elementary I course and is designed to develop language skills in listening, speaking, reading, and writing as it relates to everyday life situations. *Prerequisite: None.*

CHIN- SHU 101S2 *Elementary Chinese I – FoS 2*. This course is the second half of a specially-designed 2-credit elementary-level Chinese course for students enrolled in Foundations of Science who have no or almost no knowledge of Mandarin Chinese. It covers the latter half of the 4-credit Elementary I course and is designed to develop language skills in listening, speaking, reading, and writing as it relates to everyday life situations. *Prerequisite: Successful completion of first half.*

CHIN- SHU 102 *Elementary Chinese II*. This course is the second part of a one-year elementary-level Chinese course designed for students who have completed NYU-SH's *Elementary Chinese I* or equivalent. It is designed to reinforce and further develop language skills in listening, speaking, reading, and writing as it relates to everyday life situations. The objectives of the course are: (1) to continue mastering the Chinese phonetic system (pinyin and tones); (2) to become further familiarized with the construction of commonly used Chinese Characters (both simplified and traditional); (3) to understand and use correctly basic Chinese grammar and sentence structures; (4) to continue building up essential vocabulary; (5) to read and write level appropriate passages (150-200 characters long); and (6) to become acquainted with aspects of Chinese culture and society related to the course materials. *Prerequisite CHIN-101.*

CHIN- SHU 102S *Elementary Chinese II FoS*. This specially-offered course for students enrolled in Foundations of Science is the first half of the regular Elementary Chinese II course, designed for students who have completed NYU-SH's Elementary Chinese I or equivalent. It is designed to reinforce and further develop language skills in listening, speaking, reading, and writing as it relates to everyday life situations. *Prerequisite CHIN-101.*

CHIN- SHU 102S2 *Elementary Chinese II FoS 2*. This specially-offered course for students enrolled in Foundations of Science is the second half of the regular Elementary Chinese II course, designed for students who have completed the first half of NYU-SH's Elementary Chinese II for students in FoS. It is designed to reinforce and further develop language skills in listening, speaking, reading, and writing as it relates to everyday life situations. *Prerequisite: Successful completion of first half.*

CHIN- SHU 111 *Elementary Chinese for Advanced Beginners*. This course is the first part of a one-year elementary-level Chinese course designed for students who can understand and speak conversational Chinese related to daily-life situations, but have not learned to read/write Chinese characters. This includes students who were raised in a non-Chinese speaking country but in a home where the Mandarin Chinese dialect was spoken, and/or students who have acquired a certain level of Mandarin Chinese language proficiency (primarily speaking and listening) by living or working in a Chinese speaking country/region for an extended time. Though speaking and listening will be an integral part of the course, the major focus will be on developing students' competence in reading and writing. The objectives of the course are: 1) to master the Chinese phonetic system (pinyin and tones) with satisfactory pronunciation; 2) to understand the

construction of commonly used Chinese Characters (both simplified and traditional) and write them correctly; 3) to build up essential vocabulary needed to read and write about topics covered in the textbook; 4) to understand and use correctly basic Chinese grammar and sentence structures; 5) to comprehend level appropriate passages and to be able to perform simple sentence analysis; 6) to write level appropriate essays (250-300 characters long) with grammatical, accuracy as well as cohesion and coherence; 7) to become acquainted with and be able to discuss in speech and writing aspects of Chinese culture and society related to the course materials. *Prerequisite: Based on Placement Test.*

CHIN- SHU 201 Intermediate Chinese I. This course is the first part of a one-year intermediate-level Chinese course designed for students who have completed NYU-SH's *Elementary Chinese II* or equivalent. It is designed to consolidate and develop overall aural-oral proficiency. Objectives are: (1) to be able to obtain information from more extended conversation; (2) to express and expound on, in relative length, feelings and opinions on common topics; (3) to develop vocabulary needed to discuss common topics and begin learning to decipher meaning of compound words; (4) to develop reading comprehension of more extended narrative and expository passages; (5) to write, in relative length (200-250 characters long), personal narratives, informational narratives, comparison and discussion of viewpoints with level-appropriate vocabulary and grammatical accuracy, as well as basic syntactical cohesion; (6) to continue being acquainted with aspects of Chinese culture and society related to the course materials. *Prerequisite CHIN-102.*

CHIN- SHU 201S1 Intermediate Chinese I - FoS1. This course is a specially-designed 2-credit intermediate-level Chinese course for students enrolled in Foundations of Science who have completed Elementary II. It covers the first half of the 4-credit Intermediate I course. *Prerequisite: CHIN-SHU 102.*

CHIN- SHU 201S2 Intermediate Chinese I – FoS2. This course is a specially-designed 2-credit intermediate-level Chinese course for students enrolled in Foundations of Science who have completed Intermediate I FoS1. It covers the second half of the 4-credit Intermediate I course. *Prerequisite: CHIN-SHU 201S1.*

CHIN- SHU 202 Intermediate Chinese II. This course is the second part of a one-year intermediate-level Chinese course designed for students who have completed NYU-SH's *Intermediate Chinese I* or equivalent. It is designed to continue consolidating and developing overall aural-oral proficiency, gradually focusing more on semi-formal or formal linguistic expressions. Objectives are: (1) to further develop competence in obtaining information from more extended conversation; (2) to express and expound on, in more extended length, feelings and opinions on socio-cultural topics; (3) to develop more specialized vocabulary needed to discuss sociocultural topics; (4) to improve students' ability to decipher meaning of compound words; (5) to further develop reading comprehension of extended narrative, expository and simple argumentative passages; (6) to learn to solve simple syntactical problems independently; (7) to write, in relative length (250-300) characters long) informational narratives, expository and simple argumentative passages with level-appropriate vocabulary and grammatical accuracy, as well as basic syntactical cohesion; and (7) to continue being acquainted with aspects of Chinese culture and society related to the course materials. *Prerequisite CHIN-201.*

CHIN- SHU 211 Intermediate Chinese I for Advanced Beginners. This course is designed for students who have at least one year of Chinese language learning at NYU and who, before registering for this course, already command above-elementary aural-oral proficiency in Mandarin Chinese. The objectives are: to be able to obtain information from extended written passages; to both express and expound on, in relative length, feelings and opinions on common social and cultural topics; to expand vocabulary and learn to decipher the meaning of compound words; to develop reading comprehension of extended expository and simple argumentative passages; to solve non-complex textual problems with the aid of dictionaries; to write in relative length personal narratives, informational narratives, comparison and discussion of viewpoints with level appropriate vocabulary and grammatical accuracy, as well as syntactical cohesion; to continue to become acquainted with aspects of Chinese culture and society related to the course materials. *Prerequisite CHIN-111.*

CHIN- SHU 301 *Advanced Chinese I*. This course is the first part of a one-year Advanced Chinese course designed for students who have successfully completed *Intermediate Chinese II* at NYU-SH, or who have at least the equivalent knowledge of Chinese upon registration. It is designed to reinforce and further improve students' overall communicative competence by incorporating semi-formal or formal usages. The objectives of the course are: (1) to learn to apply formal linguistic expressions in speaking and writing; (2) to acquire specialized vocabulary and patterns necessary for conducting formal discussions of socio-cultural topics; (3) to develop reading comprehension of texts with more advanced syntax; (4) to learn to make context-based guess about the meaning of a new word and further enhance students' ability to analyze as well as produce sentences with more complex syntactical features; (5) to learn to write expository and argumentative passages in more extended length; and (6) to learn to employ basic rhetoric devices in writing. *Prerequisite CHIN-202.*

CHIN- SHU 302 *Advanced Chinese II*. This course is the second part of a one-year Advanced Chinese course designed for students who have successfully completed *Advanced Chinese I* at NYU-SH, or who have the equivalent knowledge of Chinese upon registration. It is designed to reinforce and further improve students' overall communicative competence by incorporating semi-formal or formal usages. The objectives of the course are: (1) to enhance further students' oral and written communicative competence using formal linguistic expressions; (2) to expand further specialized vocabulary and patterns necessary for conducting formal discussions of socio-cultural topics relevant to today's China; (3) to improve further students' reading comprehension of texts with more advanced syntax; (4) to develop further their competence in making context-based guess about the meaning of a new word, and further enhance ability to analyze as well as produce sentences with more complex syntactical features; (5) to improve further their ability to write expository and argumentative passages in more extended length; (6) to improve their ability to effectively employ basic rhetoric devices in writing. *Prerequisite CHIN-301.*

CHIN- SHU 401 *Classical Chinese I* This course is designed to give students an introduction to basic syntax, grammar, and vocabulary of Classical Chinese through close readings of authentic texts. Almost all these texts are historically significant canon texts that are extremely rich in classical Chinese cultural connotation. They are selected from a wide variety of genres, such as historical literature, philosophical and political writings, written correspondence, poetry, essay, some of which are unique to Chinese culture. The course aims to develop the students' reading and comprehension skills in this highly stylized form of written Chinese, acquaint students not only with the classic Chinese cultural heritage but also underlying working mechanism that is in many ways relevant to the form and usage of today's Mandarin Chinese. *Prerequisite CHIN-302.*

CHIN- SHU 402 *Classical Chinese II* This course continues the work begun in Classical Chinese I with the goal that students be able to read with reasonable facility original texts, included unpunctuated ones, from a wide variety of genres, including historical literature, philosophical and political writings, written correspondence, poetry, essays and official documents. *Prerequisite CHIN-401.*

CHIN- SHU 9001 *Practical Chinese and Introduction to China*. This course does not cover Elementary Chinese I. It is designed for students who have already completed their language requirement for their major or who will complete their language requirement with another language. Students cannot take this class if they have already completed Elementary Chinese I or equivalent or more advanced course. This course is not intended for native Chinese speakers. Finally, completion of this course does not qualify students to take Elementary Chinese II.

COMPUTER ENGINEERING

CENG- SHU 201 *Digital Logic*. This module provides a rigorous introduction to topics in digital logic design. Introductory topics include: classification of digital systems, number systems and binary arithmetic, error detection and correction, and switching algebra. Combinational design analysis and synthesis topics include: logic function optimization, arithmetic units such as adders and subtractors, and control units such as decoders and multiplexers. In-depth discussions on memory elements such as various types of latches and flip-flops, finite state machine analysis and design, random access memories, FPGAs, and high-level hardware description language programming such as VHDL or Verilog. Timing hazards, both static and dynamic, programmable logic devices, PLA, PAL and FPGA will also be covered. *Prerequisite: None.*

CENG- SHU 202 *Computer Architecture*. The course introduces the principles of computer organization and basic architecture concepts. It discusses the basic structure of a digital computer and study in details formal descriptions, machine instruction sets design, formats & data representation, addressing structures, mechanization of Procedure calls, memory management, Arithmetic and Logical unit, virtual and cache memory organization, I/O processing and interrupts, the fundamentals of reliability aspects. The labs emphasize experiential learning of computer organization and architecture concepts, and require students to use learned knowledge to create and build prototypes and evaluate their performance. *Prerequisite: CENG-201.*

CENG- SHU 213 *Database Systems*. The course covers modeling an application and logical database design, the relational model and relational data definition and data manipulation languages, design of relational databases and normalization theory, physical database design, query processing and optimization, transaction processing focusing on concurrency and recovery. The labs emphasize experiential learning of database systems and applications and an insight into various database management systems and query languages. *Prerequisite: CSCI-101.*

CENG-251 *Data Structures and Algorithms*. The course covers modeling an application and logical database design, the relational model and relational data definition and data manipulation languages, design of relational databases and normalization theory, physical database design, query processing and optimization, transaction processing focusing on concurrency and recovery. The labs emphasize experiential learning of database systems and applications and an insight into various database management systems and query languages. *Prerequisite: CSCI-101.no this course in the system.*

CENG- SHU 302 *Compilers*. Topics include: structure of one-pass and multiple-pass compilers, symbol table management, lexical analysis; traditional and automated parsing techniques including recursive descent and LR parsing; syntax-directed translation and semantic analysis, run-time storage management, intermediate code generation; and introduction to optimization, code generation; and interpreters. *Prerequisites: CSCI-101 & CSCI-370.*

CENG- SHU 303 *Parallel and Distributed Computing*. This subject aims to help students to get the most out of parallel and distributed computer systems, i.e. to understand the interaction between hardware and software parts of the system, to understand the power and limitations of parallel and distributed systems and to understand the beneficial and challenging aspects of parallelism. Upon completion of this subject the student should be able to understand the fundamental aspects of parallel and distributed processing and the theoretical limitations of parallel computing such as intractability, become familiar with taxonomies of parallel systems and performance measures for parallel systems, and write efficient parallel application program. *Prerequisite: CENG-202.*

CENG- SHU 304 *Computer Security*. This course covers cryptographic systems. Topics: Capability and access control mechanisms, authentication models, protection models. Database and operating system security issues, mobile code, security kernels. Malicious code, Trojan horses and computer viruses. Security policy formation and enforcement, legal aspects and ethical aspects. *Prerequisite: CSCI-215 and CENG-350.*

CENG- SHU 306 *Intelligent Systems*. This course gives an introduction to artificial intelligence. The students will learn about intelligent agents that can make near-optimal decisions in a timely manner with incomplete information and limited computational resources. The course will address search with single and multiple agents, Markov decision processes, reinforcement learning, and tracking. The course includes problem solving and search algorithms, reasoning and fuzzy and probabilistic methods, pattern recognition and neural networks, and genetic algorithms and a brief overview of natural language processing and computer vision. The course will provide an engineering context to the mind, psychology, and neuroscience. *Prerequisite: CENG-202.*

CENG- SHU 350 *Embedded Systems*. This course presents an overview of Embedded Systems covering a selection of topics including Microcontroller Architecture, Assembler Programming, Interrupts, Peripheral Interfacing, Embedded System Design, Higher-Level Languages on Embedded Systems, as well as a brief introduction to Real-Time Operating Systems. Practical Lab Exercises complement the lectures. The students will further specialize and consolidate their knowledge through semester-long hands-on projects. *Prerequisite: CENG-202.*

CENG- SHU 351 *Computer Networks*. The course introduces the basic concepts of computer and communication networks, like flow control, congestion control, end-to-end reliability, routing, framing, error-recovery, multiple access and statistical multiplexing. In-depth presentation of the different networking layers, with emphasis on the Internet reference model. Protocols and architectures such as the TCP, IP, Ethernet, wireless networks etc. are described in order to illustrate important networking concepts. Introduction to quantitative analysis and modeling of networks. The labs cover basic concepts of computer networking and applications, and require students to use existing networking APIs to create and build computer network prototypes and real-life applications. *Prerequisite: CSCI-101.*

CENG- SHU 400 *Senior Capstone Design Project I*. *Prerequisite: Senior Standing.*

CENG- SHU 401 *Senior Capstone Design Project II*. *Prerequisite: CENG-400.*

COMPUTER SCIENCE

CSCI- SHU 101 *Introduction to Computer Science.* How to design algorithms to solve problems and how to translate these algorithms into working computer programs. Experience is acquired through programming projects in a high-level programming language. Intended primarily as a first course for computer science and computer engineering majors but also suitable for students of other scientific disciplines. Programming assignments. *Prerequisite: None.*

CSCI-201 *Computer Organization and Architecture.*

CSCI- SHU 210 *Data Structures.* Use and design of data structures, which organize information in computer memory. Stacks, queues, linked lists, binary trees: how to implement them in a high-level language, how to analyze their effect on algorithm efficiency, and how to modify them. Programming assignments. *Prerequisite: CSCI-101.*

CSCI- SHU 215 *Operating Systems.* Covers the principles and design of operating systems. Topics include process scheduling and synchronization, deadlocks, memory management (including virtual memory), input-output, and file systems. Programming assignments. *Prerequisite: CSCI-210 & COMPE-202.*

CSCI-2 SHU 20 *Algorithms.* Introduction to the study of algorithms. Presents two main themes: designing appropriate data structures and analyzing the efficiency of the algorithms that use them. Algorithms studied include sorting, searching, graph algorithms, and maintaining dynamic data structures. Homework assignments, not necessarily involving programming. *Prerequisites: MATH-251 & CSCI-210.*

CSCI- SHU 222 *Introduction to Game Programming.* A programming intensive introduction to the creation of computer games. Using mostly two-dimensional sprite-based programming, we examine and experiment with animation, physics, artificial intelligence and audio. In addition, the course explores the mathematics of transformations (both 2D and 3D) and the ways they may be represented. *Prerequisite: CSCI-101.*

CSCI-302 *Introduction to Database Systems.*

CSCI- SHU 304 *Network Security.* This course covers reviews networking. Topics: Basic notations of confidentiality, integrity, availability; cryptographic systems, coding and decoding messages. Cryptographic protocols for privacy, integrity, key exchange and access control. TCP/IP security; Firewalls, IPSec; secure ecommerce. Intrusion detection, prevention, response. Advanced topics are included. *Prerequisite: CSCI-215.*

CSCI- SHU 308 *Computer Networking.* This course takes a top-down approach to computer networking. After an overview of computer networks and the Internet, the course covers the application layer, transport layer, network layer and link layers. Topics at the application layer include client-server architectures, P2P architectures, DNS and HTTP and Web applications. Topics at the transport layer include multiplexing, connectionless transport and UDP, principles of reliable data transfer, connection-oriented transport and TCP and TCP congestion control. Topics at the network layer include forwarding, router architecture, the IP protocol and routing protocols including OSPF and BGP. Topics at the link layer include multiple-access protocols, ALOHA, CSMA/CD, Ethernet, CSMA/CA, wireless 802.11 networks and link layer switches. The course includes simple quantitative delay and throughput modeling, socket programming and network application development and Ethernet labs. *Prerequisite: CSCI-215.*

CSCI- SHU 310 *UNIX System Programming.* This course covers programming and system administration of UNIX systems. Also covered: Shell programming, special purpose languages, UNIX utilities, UNIX programming tools, systems programming and system administration. *Prerequisite: CSCI-215 and 220.*

CSCI- SHU 323 *Interactive Computer Graphics.* This course introduces the fundamentals of computer graphics with hands-on graphics programming experiences. Topics include graphics software and

hardware, 2D line segment-scan conversion, 2D and 3D transformations, viewing, clipping, polygon-scan conversion, hidden surface removal, illumination and shading, compositing, texture mapping, ray tracing, radiosity and scientific visualization. *Prerequisites: CSCI-101, MATH-110 & MATH-230.*

CSCI- SHU 330 *Computer Vision and Scene Analysis.* An important goal of artificial intelligence is to equip computers with the capability to interpret visual inputs. Computer vision and scene analysis is an AI area that deals with constructing explicit, meaningful descriptions of physical objects from images. It includes many techniques from image processing, pattern recognition, geometric modeling and cognitive processing. This course introduces the many techniques and applications of computer vision and scene analysis. *Prerequisites: CSCI-101; MATH-121.*

CSCI-331 *Computer Architecture.* (Cross-listed with CENG-SHU 202).

CSCI-340 *Introduction to Databases.* Modeling the information structure of an enterprise. Logical design and relational database implementation using a tool such as Visio. Relational algebra and SQL as implemented in representative systems, such as Microsoft Access and Oracle. Normalization and denormalization. Introduction to online analytical processing, physical design, query processing and optimization, recovery, and concurrency. *Prerequisite: CSCI-101.*

CSCI- SHU 358 *Theory of Computation.* Takes a mathematical approach to studying topics in computer science, such as regular languages and some of their representations (deterministic finite automata, nondeterministic finite automata, regular expressions) and proof of nonregularity. Context-free languages and pushdown automata; proofs that languages are not context-free. Elements of computability theory. Brief introduction to NP-completeness. *Prerequisite: CSCI-215 and 220 and MATH-228.*

CSCI-360 *Machine Learning and Data Mining.* This course introduces the field of machine learning and data mining. It covers standard machine-learning techniques, such as decision trees, nearest neighbor, Bayesian methods, support vector machines and logistic regression. The course also addresses methods for evaluating and comparing machine learning techniques. *Prerequisite: CSCI-210; MATH-121.*

CSCI- SHU 370 *Object-Oriented Programming.* Object-oriented programming has emerged as a significant software development methodology. This course introduces the important concepts of object-oriented design and languages, including code reuse, data abstraction, inheritance, and dynamic overloading. Covers in depth those features of Java and C++ that support object-oriented programming and gives an overview of other object-oriented languages of interest. Significant programming assignments stressing object-oriented design. *Prerequisite: CSCI-210.*

CSCI- SHU 372 *Artificial Intelligence.* Many cognitive tasks that people can do easily and almost unconsciously have proven extremely difficult to program on a computer. Artificial intelligence tackles the problem of developing computer systems that can carry out these tasks. Focus is on three central areas in AI: representation and reasoning, machine learning, and natural language processing. *Prerequisite: CSCI-215 and 220.*

CSCI- SHU 378 *Introduction to Cryptography.* Provides an introduction to the principles and practice of cryptography and its application to network security. Topics include symmetric-key encryption (block ciphers, modes of operations, AES), message authentication (pseudorandom functions, CBC-MAC), public-key encryption (RSA, ElGamal), digital signatures (RSA, Fiat-Shamir), authentication applications (identification, zero-knowledge), and others, time permitting. *Prerequisite: CSCI-220.*

CSCI- SHU 402 *Advanced Algorithms.* This course covers techniques in advanced design and analysis of algorithms. Topics: Amortized analysis of algorithms. Advanced data structures, binomial heaps, Fibonacci heaps, data structures for disjoint sets, analysis of union by rank with path compression. Graph algorithms: elementary graph algorithms, maximum flow, matching algorithms. Randomized algorithms. Theory of NP completeness and approach to finding (approximate) solutions to NP complete problems. Selected additional topics that may vary. *Prerequisite: CSCI-220.*

CSCI- SHU 410 *Software Engineering*. An intense hands-on study of practical techniques and methods of software engineering. Topics include: advanced object-oriented design, design patterns, refactoring, code optimization, universal modeling language, threading, user interface design, enterprise application development and development tools. All topics are integrated and applied during the semester-long group project. The aim of the project is to prepare students for dynamics in a real workplace. Members of the group will meet on a regular basis to discuss the project and to assign individual tasks. Students will be judged primarily on the final project presentations. *Prerequisites: CSCI-215 and 220.*

CSCI-420 *Senior Project*. At the beginning of the semester, each student will propose a senior project plan. Most projects will be software intensive, with possible integration with databases, smart phones, gaming platforms, or other technologies. The instructor will likely suggest revisions to the project plan. Students were present the proposal, progress, and final project to the class.

CORE CURRICULUM

Cultural Foundations

CCCF-SHU 101 *Global Perspectives on Culture I* The first of a two-semester course that examines ten problems regarding the ways in which humans imagine and represent, for themselves and for others, their relation to their worlds—the environment they inhabit, the communities they form a part of, the groups with which they communicate. Three questions will orient students’ consideration of these problems.

- What does it mean to “represent” something to someone?
- What is the *social* function of what we represent to others?
- Why, how, and with what consequences do we *interpret* and *respond affectively to* (enjoy, detest, feel moved by, become angered at) what is represented for us, or what we represent for someone else?

Each week, the entire second-year class will participate in a single two-hour class taught by the faculty member of record. Students will be divided into 25-student sections that meet in a one-hour class taught by global postdoctoral Global Academic Fellows. Students will also be divided into 15-student writing workshops that meet twice weekly for a one-hour class taught by experts in expository writing.

In the fall The course will treat the following five problems. Each problem will be addressed from a range of perspectives, and by means of different sorts of texts, drawn from different milieus and periods, though presented in a roughly chronological order.

The five central topics for fall are as follows:

1. What is a story? (Fundamentals of narrative: aetiologies, creation myths; reliability; the neurophysiology and sociobiology of the imagination.)
2. What is an image, and what can an image *do*? (Representation: Plato against Sophism; what is a “real” depiction of the world; who gets to depict, who gets to interpret; visual image, aural image, writing.)
3. What is a “world”? (Designation conventions, notion of environment, culture as a way of mediating/designating an environment for a group.)
4. “Culture” and the foundations of globalization: can “culture” be anything but *local*? (The representation of worlds, local and foreign, secular and religious, in the pre-modern and early modern period.)
5. What can culture make humans *do*, why, and to whose benefit or detriment? (Cultural forms as devices of community formation, destruction; as instruments of control or of liberation; instrumental conceptions of culture; modernity and culture for culture’s sake.)

Prerequisite: None.no this part of description in the system.

CCCF-SHU 102 *Global Perspectives on Culture II* The second of a two-semester course that examines ten problems regarding the ways in which humans imagine and represent, for themselves and for others, their relation to their worlds—the environment they inhabit, the communities they form a part of, the groups with which they communicate. See CCCF-101 for the structure of the course.

The five central topics for spring are as follows:

1. What is an animal to a human, and why? (Comparative consideration of the boundaries different societies draw, in different media, at different times, between human animals and non-human animals; culture as a vehicle for establishing human-non-human distinctions.)
2. Genre, interpretation, and enjoyment: do rules travel? (Comparative cultural analysis: what is a convention? Epic and foundation.)

3. What in the world is “literature”? (Origins of the concept; literacy, representation, elites; translation: comparative early literatures.)
4. What in the world is “visual art”? (Origins of the concept; literacy, representation, elites; translation: comparative early visual studies.)
5. The Work of Culture in the Age of Digital Reproduction: can cultural forms make the future?

Prerequisite: CCCF-101

CCCF--SHU 120 *Chinese Art and the Modern World.* A thematic introduction to Chinese art from the fifteenth century to the present, with special attention to its interaction with the rest of the world. Media include architecture, painting, porcelain, print, and installations. Topics include Chinese gardens in the West, Chinese watercolors for international trade, realism and socialist realism, and ink play and abstract expressionism. *Prerequisite: None.*

CCCF--SHU 121 *History of Chinese Cinemas.* This course, the first segment in a two-semester survey of Chinese-language film history, traces the origins of Chinese cinema and its transformation and diversification into a multi-faceted, polycentric trans-regional phenomenon in China, Hong Kong, and Taiwan up to the 1960s. We study a number of film cultures in Shanghai/China, Hong Kong and Taiwan, including the complex web of their historical kinship ties, and place them within the regional and global contexts of modernity, revolution, nation-building, and attendant socio-cultural transformations. To investigate these unique yet interrelated films cultures together raises the question of national cinema as a unitary object of study, while suggesting new avenues for analyzing the complex genealogy of a cluster of urban, regional, commercial or state-sponsored film industries within a larger comparative and transnational framework. Topics related to screenings and discussions include urban modernity, exhibition and spectatorship, transition to sound, stardom and propaganda, gender and ethnic identities, and genre formation and hybridization. *Prerequisite: None.*

CCCF--SHU 122 *China: Cultures and Contexts.* More than a great books survey, this course seeks to bring students to a critical reading of some of the foundational texts that undergird China as a cultural and moral concept. In trying to understand and appreciate these texts, we must ask ourselves why they have commanded such a high degree of attention and respect by generations upon generations of people, who not only inherited these texts as part of their traditions, but also strove to redefine and reinvent these traditions through rigorous rereading and reinterpretation. In what ways do these texts continue to speak to us as moderns (or “postmoderns”), and to those outside the real or perceived Chinese world? To what extent do these old, even ancient, texts keep informing us when we are brought to the task of thinking and rethinking what it is to be human? *Prerequisite: None.*

CCCF--SHU 123 *Chinese Literature in the 20th Century.* A survey and critical examination of the concepts, institutions, canons, debates, experiments, and actions that gave rise to modern and contemporary Chinese literature. The course covers a variety of genres of literature in the People’s Republic of China, Taiwan, and Hong Kong. The primary goal of the course is to familiarize students as much as possible with the most representative works of 20th-century China. Students will also explore relevant topics in historical, sociological, and cultural studies of modern China, from a literary perspective. *Prerequisite: None.*

CCCF--SHU 124 *Chinese Music from Antiquity to the Present.* This course explores the development of Chinese music from antiquity and the Tang period to the present day, with a particular focus on the role that music plays in Chinese society. Genres to be studied include folk song, opera, teahouse music, temple and procession music, as well as more contemporary forms, such as avant-garde and rock music. Questions to be considered include the gendered roles of male and female performers, the relationship between rural and urban traditions, as well as both external influences on Chinese music and the influence of Chinese music outside of China. *Prerequisite: None.*

CCCF--SHU 125 *Chinese Theatrical Traditions.* This course surveys Chinese theatrical traditions from their pre-Tang origins to the present day. It focuses on three theatrical forms: 14th- century *zaju* plays, 16th-

and 17th-century *chuanqi* plays, and recent theater from China, Taiwan, and Hong Kong. *Prerequisite: None.*

CCCF--SHU 126 *Contemporary Chinese Art in Shanghai.* China's contemporary art scene has exploded in the past few decades. This course surveys the main developments in Chinese art since 1949. It includes guest lectures and visits to public museums, galleries and artists' studios. *Prerequisite: None.*

CCCF--SHU 127 *Paper Art: History and Practice.* Beginning with the Chinese arts of Zhezhi (paper folding) and Jianzhi (paper cutting) the paper craft movement has roots on all continents. This course reviews the history of both Chinese and international traditions, in addition to examining contemporary practices. Additionally, students will have hands-on experience through weekly exercises in the fundamentals of paper engineering techniques and basic conductive materials, creating movable books and sculptures. *Prerequisite: None.*

CCCF--SHU 128 *Contemporary Art & New Media.* The contemporary art scene in China has developed quickly over the past three decades. The massive political, economic, and social changes the country has undergone since the end of the Cultural Revolution in 1976 have dramatically altered the country's cultural landscape. In this seminar course, the course will survey the main development areas in Chinese contemporary art from the end of the 1920s to the present day. Dedicated to responding to the new textures of China's metropolitan culture, it will look at the relationship between visual arts, new media, architecture, and performance in the mega-city of Shanghai, often regarded as the cradle of Chinese modernity. The class will be complemented by guest lectures and visits to public museums, galleries and artists' studios in and around Shanghai. Students will have the opportunity to meet leading figures from the art world in China as well as the international art community, including artists, museum directors, curators, art critics, and art dealers. *Prerequisite: None.*

CCCF--SHU 129 *Masters of Asian Cinema.* This course introduces students to the basic concepts and methods in film studies by focusing on a select number of eminent auteurs in Asian cinemas. Our objectives are many: first, we situate within their particular socio-historical contexts the masterworks by master-directors like Akira Kurosawa, Yasujiro Ozu, Zhang Yimou, John Woo, Wong Kar-wai, Hou Hsiao-Hsien, Sanjay Leela Bhansali, Mani Ratnam, and Deepa Mehta. In doing so, we learn the divergent developments between and within Japanese, Chinese, and South Asian film industries. We then analyze how these directors make various stylistic choices to address issues of kinship, nation, gender, historical memory, modernity, and globalization. Against the background of 20th century cross-cultural encounters, we also study the contributions of these auteurs to world cinemas and the cross-fertilization in style between these film masters. *Prerequisite: None.*

CCCF--SHU 9101 *Cultural Foundations I.* This course introduces the arts from their origins to the end of antiquity, as defined for these purposes by the roughly coincident dissolutions of the Gupta, Han, and Western Roman empires, focusing on how individuals and social relations are shaped in literature, the visual, plastic, and performing arts, and through music. Conceptions of the divine, the heroic, power and disenfranchisement, beauty, and love are examined within the context of the art and literature of East and South Asia, the Mediterranean world, and contiguous regions (such as Germania, Nubia, and Mesopotamia). Instructors prepare the way for Cultural Foundations II by giving some attention to the modes by which cultural transmission occurred across these regions prior to the rise of Islam. *Prerequisite: None.*

Science courses

CCSC-50 *Physics I.*

Co-requisite: MATH-SHU 121.

Foundations of Science I

CCSC--SHU 101 *Foundations of Science 1: Physics.* Foundations of Science 1: Energy and Matter provides a comprehensive introduction to these two fundamental concepts that are so famously unified in the equality $E=mc^2$. Following an introduction to the physical sciences, the course focuses on velocity, acceleration, forces, and energy, while simultaneously introducing students to atoms and molecules. Chemical reactions are examined, and the energy changes associated with them are investigated via a thorough analysis of the three laws of thermodynamics. Laboratory exercises focus on the guiding principles of the scientific method and an introduction to experimental design, data analysis, and scientific presentation, including technical writing. Focused disciplinary tutorials in biology, chemistry, and physics provide an opportunity for in-depth analysis and discussion of classic papers, enhanced understanding of fundamental concepts, and development of practical skill sets. Weekly discussion sections are designed to hone proficiency at solving problems in a collaborative, team environment. *Co-requisite: MATH-121.*

CCSC--SHU 102 *Foundations of Science 1: Chemistry.* Foundations of Science 1. “Energy and Matter;” provides a comprehensive introduction to these two fundamental concepts, which are so famously unified in the equality $E=mc^2$. Following an introduction to the physical sciences, it focuses on velocity, acceleration, forces, and energy, while simultaneously introducing students to atoms and molecules. Chemical reactions are examined, and the energy changes associated with them are investigated via a thorough analysis of the three laws of thermodynamics. Laboratory exercises focus on the guiding principles of the scientific method and an introduction to experimental design, data analysis, and scientific presentation, including technical writing. *Co-requisite: MATH-121.*

Foundations of Science II

CCSC--SHU 103 *Foundations of Science 2: Physics.* “Forces and Interactions,” introduces students to fundamental forces, including gravity and electromagnetic forces. Concurrently, atomic theory, the theory of molecular bonding, and atomic and molecular structures and shapes, in which forces and energy play a role, are investigated. Students apply these concepts to understanding molecules related to the life sciences. Laboratory exercises focus on acquisition of computer skills and modeling with a continued emphasis on technical presentation. Focused disciplinary tutorials in biology, chemistry, and physics provide an opportunity for in-depth analysis and discussion of classic papers, enhanced understanding of fundamental concepts, and development of practical skill sets. Weekly discussion sections are designed to hone proficiency at solving problems in a collaborative, team environment. *Co-requisite: MATH-121.*

CCSC--SHU 104 *Foundations of Science 2: Chemistry.* Foundations of Science 2, “Forces and Interactions,” introduces students to fundamental forces, including gravity and electromagnetic forces. Concurrently, atomic theory, the theory of molecular bonding, and atomic and molecular structures and shapes, in which forces and energy play a role, are investigated. Students apply these concepts to understanding molecules related to the life sciences. Laboratory exercises focus on acquisition of computer skills and modeling with a continued emphasis on technical presentation. Focused disciplinary tutorials in biology, chemistry, and physics provide an opportunity for in-depth analysis and discussion of classic papers, enhanced understanding of fundamental concepts, and development of practical skill sets. Weekly discussion sections are designed to hone proficiency at solving problems in a collaborative, team environment. *Co-requisite: MATH-121.*

Foundations of Science III

CCSC--SHU 105 *Foundations of Science 3: Physics.* Foundations of Science 3, “Systems in Flux,” focuses on changes in systems in the physical and living worlds. Capacitors, current, and basic circuits are

explored with an eye toward understanding their applications to chemical reactions and the behavior of living cells. The rates and directions of chemical reactions are explored as chemical kinetics and chemical equilibrium are investigated with a special focus on acid-base chemistry. These fundamental physical and chemical principles are used to describe basic cellular monomers and polymers including DNA, RNA, and protein, and the sequence of events that leads to information flow and its regulation in the cell nucleus. They are also applied to macroscopic systems found in the biosphere. Laboratory exercises focus on classic scientific experiments that are designed to sharpen basic laboratory skills. *Prerequisite: CCSC-104; Co-requisite: MATH –SHU 123.*

CCSC--SHU 106 *Foundations of Science 3: Chemistry.* Foundations of Science 3, “Systems in Flux,” focuses on changes in systems in the physical and living worlds. Capacitors, current, and basic circuits are explored with an eye toward understanding their applications to chemical reactions and the behavior of living cells. The rates and directions of chemical reactions are explored as chemical kinetics and chemical equilibrium are investigated with a special focus on acid-base chemistry. These fundamental physical and chemical principles are used to describe basic cellular monomers and polymers including DNA, RNA, and protein, and the sequence of events that leads to information flow and its regulation in the cell nucleus. They are also applied to macroscopic systems found in the biosphere. Laboratory exercises focus on classic scientific experiments that are designed to sharpen basic laboratory skills. *Prerequisite: CCSC-104; Co-requisite: MATH 123.*

CCSC--SHU 107 *Foundations of Science 3: Biology.* Foundations of Science 3, “Systems in Flux,” focuses on changes in systems in the physical and living worlds. Capacitors, current, and basic circuits are explored with an eye toward understanding their applications to chemical reactions and the behavior of living cells. The rates and directions of chemical reactions are explored as chemical kinetics and chemical equilibrium are investigated with a special focus on acid-base chemistry. These fundamental physical and chemical principles are used to describe basic cellular monomers and polymers including DNA, RNA, and protein, and the sequence of events that leads to information flow and its regulation in the cell nucleus. They are also applied to macroscopic systems found in the biosphere. Laboratory exercises focus on classic scientific experiments that are designed to sharpen basic laboratory skills. *Prerequisite: CCSC-104; Co-requisite: MATH 123.*

CCSC--SHU 108 *Foundations of Science 4: Physics.* Foundations of Science 4, “Form and Function,” explores a question applicable to all branches of science: How does the form or shape of a physical entity set its function? This leads to another question: If a specific function is desired, can a form or shape be engineered or modified to execute or improve that function? The course examines the form/function concept in magnetic and electrical fields, the behavior and design of small molecules, and the activity of proteins as the workhorse in biological systems. Laboratory exercises require students to design experiments related to crystals and crystallography, and to examine chemical forms at the macroscopic and microscopic levels. Focused disciplinary tutorials in biology, chemistry, and physics provide an opportunity for in-depth analysis and discussion of classic papers, enhanced understanding of fundamental concepts, and development of practical skill sets. Weekly discussion section are designed to hone proficiency at solving problems in a collaborative, team environment. *Prerequisite: CCSC-104 ; Co-requisite: MATH 123.*

CCSC--SHU 109 *Foundations of Science 4: Chemistry.* Foundations of Science 4, “Form and Function,” explores a question applicable to all branches of science: How does the form or shape of a physical entity set its function? This leads to another question: If a specific function is desired, can a form or shape be engineered or modified to execute or improve that function? The course examines the form/function concept in magnetic and electrical fields, the behavior and design of small molecules, and the activity of proteins as the workhorse in biological systems. Laboratory exercises require students to design experiments related to crystals and crystallography, and to examine chemical forms at the macroscopic and microscopic levels. Focused disciplinary tutorials in biology, chemistry, and physics provide an opportunity for in-depth analysis and discussion of classic papers, enhanced understanding of fundamental concepts, and development of practical skill sets. Weekly discussion section are designed to hone proficiency at solving problems in a collaborative, team environment.

Prerequisite: CCSC-104; Co-requisite: MATH 123.

CCSC--SHU 110 *Foundations of Science 4: Biology.* Foundations of Science 4, “Form and Function,” explores a question applicable to all branches of science: How does the form or shape of a physical entity set its function? This leads to another question: If a specific function is desired, can a form or shape be engineered or modified to execute or improve that function? The course examines the form/function concept in magnetic and electrical fields, the behavior and design of small molecules, and the activity of proteins as the workhorse in biological systems. Laboratory exercises require students to design experiments related to crystals and crystallography, and to examine chemical forms at the macroscopic and microscopic levels. Focused disciplinary tutorials in biology, chemistry, and physics provide an opportunity for in-depth analysis and discussion of classic papers, enhanced understanding of fundamental concepts, and development of practical skill sets. Weekly discussion sections are designed to hone proficiency at solving problems in a collaborative, team environment.

Prerequisite: CCSC-104 ; Co-requisite: MATH 123.

CCSC--SHU 111 *Foundations of Science 5: Biology.* light, matter, and living systems, and the responses of nerve cells are examined. Changes during the maturation of organisms are explored at the molecular level as well. In addition, evolution is introduced as the fundamental means of propagating change that gives rise to new species in the living world. Laboratory exercises fuse physics, chemistry and biology as students engage in projects related to recombinant DNA technology, gene cloning, and protein synthesis and characterization. *Prerequisite: CCSC-110.*

CCSC--SHU 112 *Foundations of Science 5: Physics.* Foundations of Science 5, “Propagating Change,” focuses on disturbances in physical and living systems that bring about change. In physics, disturbances generate waves that are associated with the transmission of light and sound. These same waves generate responses in living organisms as sensory systems detect them, including nerves in some species. Electromagnetic waves, interactions among light, matter, and living systems, and the responses of nerve cells are examined. Changes during the maturation of organisms are explored at the molecular level as well. In addition, evolution is introduced as the fundamental means of propagating change that gives rise to new species in the living world. Laboratory exercises fuse physics, chemistry and biology as students engage in projects related to recombinant DNA technology, gene cloning, and protein synthesis and characterization. *Prerequisite: CCSC-110.*

CCSC--SHU 113 *Foundations of Science 6: Biology.* Foundations of Science 6, “Oscillations,” examines how repetitious or cyclical events, although presumably predictable, are associated with inherent uncertainty in their outcomes. This is embodied in physics and chemistry in quantum theory and the Heisenberg uncertainty principle. But living systems, especially when populations are studied, provide countless examples of oscillatory events that possess inherent uncertainty when scientists try to predict outcomes. Indeed, this final chapter in Foundations of Science challenges students to consider the very nature of studying complex problems and systems and assessing the uncertainty associated with the scientific method. The laboratory exercises involve collaborative projects in which teams of students must apply their acquired knowledge and skills to design experiments focused on answering a question or solving a problem, keeping uncertainty in mind as they report their results and discuss additional data that would be needed to provide a better answer or solution. *Prerequisite: CCSC-111.*

CCSC--SHU 114 *Foundations of Science 6: Physics.* Foundations of Science 6, “Oscillations,” examines how repetitious or cyclical events, although presumably predictable, are associated with inherent uncertainty in their outcomes. This is embodied in physics and chemistry in quantum theory and the Heisenberg uncertainty principle. But living systems, especially when populations are studied, provide countless examples of oscillatory events that possess inherent uncertainty when scientists try to predict outcomes. Indeed, this final chapter in Foundations of Science challenges students to consider the very nature of studying complex problems and systems and assessing the uncertainty associated with the scientific method. The laboratory exercises involve collaborative projects in which teams of students must apply their acquired knowledge and skills to design experiments focused on answering a question or

solving a problem, keeping uncertainty in mind as they report their results and discuss additional data that would be needed to provide a better answer or solution.

Prerequisite: CCSC-112.

Experimental Discovery in the Natural World.

CCEX--SHU 111 *The Domain of Crystals.* Knowing the three-dimensional structure of a molecule is important for understanding its functional properties. Is it indeed possible to visually analyze a molecule and use the observed experimental data to build a three-dimensional model? This structural information can be obtained using a variety of analytical techniques such as X-ray crystallography, and can lead to significant breakthroughs in pharmaceuticals. Students grow crystals of different colors, shapes, and sizes and harvest them for physical and morphological characterization in order to understand the basic principles of atomic structure and theory, chemical bonding and reactions, thermochemistry, periodicity, and solution chemistry. *Prerequisite: None.*

CCEX--SHU 112 *Mutations and Disease.* The very word “mutations” tends to raise fear and apprehension since it is so often associated with physical deformities or exposure to harmful agents, including radiation. Perhaps such fear is warranted since many human diseases, including cystic fibrosis and cancer, are caused by “mutations”, which are mere changes in the genetic information in DNA. Starting with basic concepts, this course explores important cellular macromolecules, such as DNA, and proteins as well as their three-dimensional structures that endow them with their specific functions. In fact, understanding how mutations induce alterations to macromolecular structures often sheds light on the characteristic symptoms and prognoses of some human diseases and syndromes. Laboratory projects, which focus on introduction to computer modeling, emphasize visualizing in a three-dimensional environment the normal and altered macromolecules associated with some common but complex human maladies. *Prerequisite: None.*

CCEX--SHU 113 *Brain and Behavior.* The relationship of the brain to behavior, beginning with the basic elements that make up the nervous system and how electrical and chemical signals in the brain work to effect behavior. Using this foundation, we examine how the brain learns and how it creates new behaviors, together with the brain mechanisms that are involved in sensory experience, movement, hunger and thirst, sexual behaviors, the experience of emotions, perception and cognition, memory and the brain's plasticity. Other key topics include whether certain behavioral disorders like schizophrenia and bipolar disorder can be accounted for by changes in the function of the brain, and how drugs can alter behavior and brain function. *Prerequisite: None.*

CCEX--SHU 114 *The Molecules of Life.* Our lives are increasingly influenced by the availability of new pharmaceuticals, ranging from drugs that lower cholesterol to those that influence behavior. We examine the chemistry and biology of biomolecules that make up the molecular machinery of the cell. Critical to the function of such biomolecules is their three-dimensional structure that endows them with a specific function. This information provides the scientific basis for understanding drug action and how new drugs are designed. Beginning with the principles of chemical bonding, molecular structure, and acid-base properties that govern the structure and function of biomolecules, we apply these principles to study the varieties of protein architecture and how proteins serve as enzymes to facilitate biochemical reactions. We conclude with a study of molecular genetics and how recent information from the Human Genome Project is stimulating new approaches to diagnosing disease and designing drug treatments. *Prerequisite: None.*

CCEX-116 *Where the City Meets the Sea: Studies in Coastal Urban Environments.* Over half of the human population lives within 100 km of a coast and coastlines contain more than two-thirds of the world's largest cities. As a result, the world's natural coastal environments have been substantially modified to suit human needs. This course uses the built and natural environments of coastal cities as laboratories to examine the environmental and ecological implications of urban development in coastal areas. Using data from multiple coastal cities, student teams use fieldbased studies and Geographic Information System (GIS) data to examine patterns and processes operating in coastal cities. This course uses the local terrestrial, marine, and built environments as a laboratory to address these issues, and team projects requiring field work form a core component of the learning experience. As part of the NYU Global

Network University initiative this course is being offered simultaneously in several NYU sites globally and students are collaborating extensively with students from their sister campuses through the duration of this course. no this course in the system. *Prerequisite: None.*

CCEX-117 *The Legacy of Tradition I: The Growth of Science in the West.* This course will consider the origins and development of science in the West. What ancient principles are preserved? Beginning with early Greek “proto scientific” philosophy we will explore emerging paradigms of science through a consideration and replication of great experiments that had significant impact by changing accepted world views. Before turning to the scientific and ontological revolution of the 16th and 17th centuries we will investigate the assumptions of pre-modern science. Philosophical, religious and scientific arguments will be studied and evaluated. Representative works of Bacon, Descartes, Galileo and Newton will be read to introduce the outlook of early modern science. The course will conclude with a survey of some contemporary scientific theories that evoke the legacy of tradition. One lecture and laboratory each week. In the lab students will, to the extent possible, replicate classic experiments from the history of science (list and descriptions of experiments in preparation). *Prerequisite: None.*

Science, Society and History The courses in this category emphasize the impact of science on society as well as cultural and historical reactions to scientific discovery. They focus on pressing world issues and current technology addressed by the natural sciences and mathematics.

CCST--SHU 121 *The Atom and Energy.* $E=mc^2$: One simple equation encapsulates the power to grant life and death in equal measure. Life associated with fusion in the sun, radiation therapy, and nuclear energy; death via nuclear bombs and nuclear disasters. This course uses nuclear physics as a prism for exploring science as a human endeavor, focusing on the physics of the atomic nucleus and its technological applications. Arguments for and against nuclear power plants are analyzed, while the power and threat of nuclear weapons are assessed. The international treaties designed to limit the spread of nuclear weapons are scrutinized, emphasizing the challenges that lawmakers and citizens face in determining and guiding the uses of nuclear power as we grapple with the moral responsibility that all of us—scientists, politicians, and citizens—must bear for ourselves, our nations, and ultimately, for humanity. *Prerequisite: None.*

CCST--SHU 122 *Life in the Universe.* Why is Earth the only object in the solar system with obvious signs of life? How did the building blocks of life form on Earth? What is the likelihood that there are other forms of life out there? This course addresses these questions and more, by covering the chemical evolution of the Universe, the formation of our solar system, the search for and study of extra-solar planets, and the possible cosmological implications of life’s existence. *Prerequisite: None.*

CCST--SHU 123 *State and Fate of the Earth.* What is the current state of Earth in terms of human well-being and human impact on Earth’s natural systems? Issues such as energy, CO₂, climate, agriculture, water, and material fluxes are intricately tied together as a global system that has expanded by about 3% per year. This growth rate will lead to a world in 2050 in which the average world citizen will have a life approximately equal to that of the average European or Japanese today. Will this be possible and what will be the implications for the issues above? In this inquiry-based seminar, substantial portions of the course will require students to conduct research by locating, using, and sharing technical papers and data bases, synthesizing facts and viewpoints, making presentations, and writing short technical papers that will be peer-reviewed by the other “researchers” in the class. The course includes field trips relevant to the topics above. *Prerequisite: None.*

CCST--SHU 124 *Social Issues in the New Biosciences.* While the 20th century has often been characterized as the Century of Physics, many have already named the 21st century as the Century of Genetics. Important markers highlight the speed and drama of the molecular genetic revolution. These include the technique of somatic nuclear cell transfer (with the realization of mammalian cloning and the specter of human cloning) and germ-line gene therapy (with its specter of altering the genetic makeup of future generations). Alongside these markers is the promise of stem cell cures for many human ailments and diseases, and DNA identification technology to exonerate the innocent and convict the guilty. But this

is only the beginning, since the newest developments promise to go far beyond “cure” to delve into human “enhancements” of mental acuity and physical prowess. This course examines these and other developments, lodging the heated debates that each generates in both social and cultural histories and current incarnations. *Prerequisite: None.*

CCST--SHU 125 *Interconnected: The History and Theory of Networks.* Since the formation of trade routes connecting early civilizations, networks have been central to human exchange. Silk, jade, gold, and other goods, as well as the cultural elements of language, art, scientific discovery, philosophy and religion traveled the 6,500 km between southeast Asia and southern Europe on an elaborate system of trails, roads and waterways. This course will explore the development of several human made networks beginning with these early trade routes. Further consideration will be given to the construction of transcontinental railways, the development of electrical telegraph and telephone systems, in addition to the evolution of modern digital communication platforms such as the world wide web. The cultural conditions that encouraged the emergence of these networks, as well as the social outcomes resulting from their adoption, will both be explored through readings and critical dialog. Students will become familiar with: economic principles; network theories and topologies; the development and standardization of protocols; methods for encoding information; concerns about infrastructure, logistics, and security; as well as legislation governing information ownership, privacy, and censorship. Students will also be asked to consider the future of networks as it relates to themes such as crowd-sourcing, software-defined networks, and the Internet of Things. *Prerequisite: None.*

CCST--SHU 126 *From Ancient Cosmology to Science.* This course will consider the origins of science in ancient cosmologies. What principles are preserved? Considering the classical Chinese, Indian and Western traditions, the question of how and to what extent culture determines the paradigms of science will be investigated. We begin with formative texts from the Chinese, Indian and Western traditions, including the Rig Veda, the Upanishads (India), the I Jing, Dao De Jing, and the neo-Confucian synthesis (China) and the pre-Socratic Ionian physicists (Western), then turn to the development of modern science. Representative works of Bacon, Descartes, Galileo and Newton will be read in parallel with seminal texts describing the rise of modern science in China and India. The course will conclude with a survey of contemporary cosmological theories to see how some ancient ideas are retained in modern science. *Prerequisite: None.*

CCST--SHU 127 *Serendipity in Science.* In 1754 the antiquarian Horace Walpole coined the word serendipity based on the Persian fairy tale “The Three Princes of Serendip,” whose heroes “were always making discoveries, by accidents and sagacity, of things they were not in quest of.” In the ensuing centuries, the word has had a colored history. Many of the major scientific and technological developments that shape our modern economy and culture had serendipitous components, including X-rays, penicillin, nylon, vulcanization of rubber, Post-Its, Velcro, saccharin, Nutrasweet, Teflon, insulin, the Pap test, super glue and a host of others. In this course we examine the history of serendipity, the synergism between the scientific background and experience of the individual scientist and researcher, and some of the many serendipitous breakthroughs that have changed and extended our lives and continually improved our standard of living. *Prerequisite: None.*

CCST--SHU 128 *The Rise of Modern Science.* This is a survey of the history of scientific disciplines and scientific methods from the “Scientific Revolution” of the seventeenth century to the present. We will discuss the ways of knowing such as reason, observation, experiment, and modeling. Our topics include science and religion, science and war, and the development of key scientific disciplines, institutions, and forms of communication. While focusing on physical and life sciences we will also ask about connections between a science of things and a science of human beings and human society. Students read original works by Newton, Lavoisier, Darwin, Freud, and Einstein, among others. *Prerequisite: None.*

CCST--SHU 129 *Information Societies.* Proclamations of the “personal computer revolution” and the advent of the “Information Age” are now history, if only three decades old. Recently developed digital media have also been associated with radical changes and even the “death” of traditional forms of communication. This class will evaluate the relationship between information technology and society, “the media and the message,” from a broad historical perspective. Students will learn about the major material

transformations in information support, from scroll to web, with a focus on Western civilization. A comparative attention to the Middle East and East Asia for the Early Modern period and the Soviet political project for twentieth century developments will allow for a more nuanced interpretation of the notion of “modernity” associated with the “from printing press to Internet” narrative arc. We will build toward an understanding of the interdependencies between technological and social systems in several steps. First, we will establish a longue duree perspective by surveying the scroll-to-codex transformation, and sketch contours of a Eurasian geographical plane by following paper's transition from China to the Middle East and Europe. Next, we will read foundational texts on the history of the printing press with a special focus on transformations in science and religion. We will then overview the famous nineteenth-century developments in information and communication technologies. We will ask about their roles in shaping individuals' gender and professional identities as well as in the governance of transatlantic empires. The emergence of big corporations in parallel with the modern bureaucratic apparatus and new recording and data processing technologies is our fourth step. Toward the end of the class, we look at how the WWII calculating machine, the computer, acquired the functions of a “media machine” and took center stage in the debates about alternative political systems. We conclude with an exploration of contemporary visions for blurring space and time, ubiquitous computing, and promises of ultimate technological transcendence: trans-humanism. To preserve a uniting element in this wide ranging material, each of these steps will systematically explore particularly important locations where technological and social changes are negotiated, such as the library, the printing workshop, the publishing house, the office, and, finally, the classroom and the body itself. *Prerequisite: None.*

CCST--SHU 130 *Animals, Nature, Environment.* This course will explore urgent issues concerning the relation of human civilization to the natural environment in which it is embedded. There are three main components: The first investigates the human relationship with animals, starting from what are the differences between us and animals, and what these differences mean today. Second, we explore broader issues of "nature": how we humans have conceived of ourselves as distinct from, or even superior to Nature; or, alternatively, enslaved to our inner nature. Third, we study global environmental issues, including how environmentalism emerged in the industrial era, what is its place in today's world, and what the prospects are for finding solutions to the most urgent global problems. *Prerequisite: None.*

Social Foundations

CCSF-101L & 102L *Global Perspectives on Society I and II* In this two-semester course, we will examine central questions about how people should act as members of communities. These questions engage the moral underpinnings of individual human relationships, the principles according to which people assemble into societies of different scales, and the bases for interaction among societies in a world of accelerating interdependence.

Students will encounter foundational texts in moral philosophy and social science, as well as arguments and cases that extend these texts' theories into a complex contemporary context.

While studying each topic, students will be encouraged to consider, and to revisit, several central questions:

- * How do we know “facts” about the world to be empirically “true”?
- * Are ethical duties contextual, relative, and socially constructed, or are there "universals"?
- * How do we construct our identities and values in an increasingly globalized world?

The course will follow a weekly pattern --

Students will meet as an entire class in a single 75-minute session taught by the vice chancellor.

Students will also be divided into 25-student recitation sections that meet in one 75-minute session taught by global postdoctoral fellows.

Students will also be divided into 15-student writing workshops that meet in two 75-minute sessions taught by experts in expository writing.

CCSF--SHU 101W1 *Global Perspectives on Society I - Writing Workshop I and II.* This is the Writing Workshop attached to the Global Perspectives on Society I Lecture.

CCSF--SHU 102 W1 *Global Perspectives on Society II - Writing Workshop I and II.* This is the Writing Workshop attached to the Global Perspectives on Society II Lecture.

CCSF--SHU 120 *The Rise of Modern China.* China's development in recent decades has benefited greatly from its integration into the world market. The rise of modern China also has significant impact on the global economy and systems. This course focuses on the linkages and interactions between China's domestic development and the world economy, covering trade and finance. Presentation will stress key concepts (e.g., comparative advantage, gains from trade, internal and external balance, exchange rate), basic analytical frameworks, and their application to current events. It will also discuss new developments since the 2008 global financial crisis and the rethinking on policies, such as changing patterns of global supply chains, regional and global trade negotiations and liberalization, global financial imbalances and rebalancing, and reform of the international systems. *Prerequisite: None.*

CCSF--SHU 121 *China's Development in a Comparative Perspective.* This course focuses on China's political and economic development over the last century and a half with particular attention to the last 33 years, the so-called Reform Period. Our three primary objectives are to (1) understand the historical trajectory of China's development path; (2) consider in what ways and to what degree the growth experiences of East Asia's high-performing economies helped inform China's economic policymakers decisions and shed light on the prospects for the long-term success of reforms in China; (3) assess the state of China's contemporary political economy. *Prerequisite: None.*

CCSF--SHU 122 *Traditional Chinese Wisdom and Its Transformation in Modern Times.* This course will give a brief survey of Chinese philosophy from the pre-Qin period to the present in the perspective of world philosophy. To capture the quintessence of traditional Chinese wisdom, we will focus on three most influential schools of thought in ancient China, namely, Confucianism, Taoism and Buddhism. We will delineate the evolution of Confucianism from Confucius to Neo-Confucianism in Song and Ming dynasties, distinguish Taoism as philosophy from Taoism as religion, and examine the process of sinicization of Buddhism, taking Zen Buddhism as a paradigm case. In modern times, against the background of the exchange between the Chinese and the Western cultures, traditional Chinese wisdom, through the creative work of modern Chinese thinkers, obtained a new lease of life. Under the heading of the modernization of traditional Chinese wisdom, we will examine three most prominent schools in the 20th century Chinese philosophy, namely, contemporary Neo-Confucianism, Tsinghua school of realism (the Chinese analytic philosophy), and Chinese Marxism. Students are required to read the assigned texts before each class and actively participate in class discussions. *Prerequisite: None.*

CCSF--SHU 123 *China's Political Thought in the Post-Maoist Era.* This course introduces to students contemporary Chinese political thought. It also explores in depth China's developmental path in the last three decades. During the course students will learn about official discourses such as Deng Xiaoping's theory on socialist reform as well as influential intellectual discourses including liberalism, the New Left, nationalism, etc. Questions such as "how do Chinese leadership and prominent thinkers understand China's prosperity and rapid development?" will be addressed and discussed. The course takes students step by step to see China from an "inner angle." Via a thorough examination through such inner angle, students will acquire a better understanding of China's developments, as well as the problems it faces. Hence the course will be organized around such key words: market reform, democratization, socialism with Chinese characteristics, liberal globalization, the New Left, Nationalism, political Confucianism, good governance, the China model. This course will provide: (1) a survey of post-Maoist Chinese thought; (2) critical analyses of various aspects of the "China path" or the "China model," as well as "Chinese interpretations" of China's prosperity,; (3) an investigation of those critical "key ideas" (e.g. "harmonious society," "good governance" etc.) which constitute the dominant ideology in today's China, and how these ideas shape Chinese understandings of present-day mainland society and China's relations with the world. During the term students will examine their views on various aspects of today's China. Along the way they will: (1) see how those political discourses and "key ideas" discussed in the course can help them understand China's

present reality; (2)read academic texts on China's development, in order to analyze the authors' arguments and evaluate their answers to the questions of the course; (3)learn about how the Chinese Communist Party thinks about itself, its organization and management, its ideology and theories of institutional reforms, its links to society and the economy, and its role in the world; and (4)express their understandings and observations on China through arguments – both verbal and written. *Prerequisite: None.*

CCSF--SHU 124 *Growing Shanghai, Shrinking Detroit.* Less than a century ago, the Paris-of-the-East Shanghai and the Paris-of-the-West Detroit belonged to the most modern, booming metropolises in the world, until both cities declined. Today, the global city of Shanghai has revived its old glory days, while Detroit officially filed for bankruptcy in July this year. In this course, we take Shanghai and Detroit as case studies to examine the challenges and consequences of our fast-urbanizing world. We will explore the historical and economic factors influencing the transformation of these cities, as well as look at how its citizens are experiencing these sweeping changes. *Prerequisite: None.*

CCSF--SHU 125 *Global Cultural Heritage.* In this course we explore the special place of "cultural heritage" in global life today. We will trace the journeys of cultural heritage items around the world — from the war trophies and curiosity cabinets of history, to our modern era's museums, and the global movements in antiquities, art, and other objects from the global South to collectors and museums in the global North, through looting, smuggling, and trade. Topics we'll investigate include "biographical objects" and the anthropology and psychology of collecting; the social life of objects of desire; the construction of value and knowledge in the representation and display of such objects; the beginnings of museums and their global spread; the concepts of national and global cultural heritage; as well as a series of ongoing international legal and moral battles over heritage, including cases related to China. *Prerequisite: None.*

CCSF--SHU 126 *Public Policy Perspectives on China: An Introduction to Policy Analysis.* This two-course series provides an introduction to the field of public policy and the exciting and complex work of policy analysis. It has three aims. The first aim is to introduce you to key concepts and contexts for public policy and policy analysis. In so doing, it explores such questions as, what are different ideas about the appropriate role of government in a society? What are some limitations to both market- and governmental solutions to societal problems? How is the process of globalization changing what governments can and should do? The two courses explore these questions throughout the entire policy process, from the way problems are framed and selected for the attention of governmental and other actors, to the way policies are practically implemented on the ground.

The second aim of the series is to get you doing policy analysis across a range of issues and cases. We present a framework and set of tools for carrying out policy analysis in a manner that is both systematic and creative, and – it is hoped – can make a real contribution to public problem solving.

The third aim is to deepen your understanding of the specifically Chinese context of public policymaking, using readings, guest speakers and your own in-depth research of a selected policy problem as an extended case study.

ECONOMICS

ECON--SHU 150 *Microeconomics*. Basic microeconomic principles: applications of supply and demand analysis; consumer choice; theory of the firm under perfect and imperfect competition; game theory and strategy; and theory and policy issues in market imperfections, such as monopoly and antitrust, externalities and regulation, imperfect information and regulation, income distribution, etc. *Prerequisite: MATH-SHU 121.*

ECON--SHU 201 *Mathematics for Economists*. In order to enter the economics major, students must have completed Calculus and Mathematics of Systems and Dynamics. This course builds on those courses by introducing students to the way in which advanced mathematical techniques in calculus and statistics are applied to empirical problems in economics. *Prerequisite: MATH-121.*

ECON--SHU 202 *Intermediate Macroeconomics*. Study of aggregate economic analysis with special attention paid to the determination of the level of income, employment, and inflation. Critically examines both the theories and the policies associated with them. *Prerequisites: ECON-150 & 201.*

ECON--SHU 203 *History of Economic Thought*. Begins with a short introduction to mercantilism, then moves to the classical school, examining the contributions of its main figures (Smith, Malthus, Ricardo, Mill, and others). Ends with Marx's reaction to classical doctrines and the Marginalist Revolution of the late 19th century, which set the foundation of modern neoclassical economics. Conceptually, covers a variety of topics but focuses on two main entities: first, the normative aspects of the debate on the factors determining the value of commodities and the related issue of the principles that ought to govern the allocation of wealth; and second, various theories of economic growth and historical change, including predictions made on the future of capitalism. *Prerequisite: ECON-150.*

ECON--SHU 204 *Ethics and Economics*. Study of the interface between ethical and economic theories. Specific topics covered include a brief overview of various ethical ideas, an analysis of the ethical presuppositions of modern economic theory (especially welfare economics), utilitarian ethics, the moral status of free exchange, the ethical implications of imperfect knowledge between bargaining parties, cost-benefit analysis and human rights, the economic content of the "general welfare," and laissez-faire. *Prerequisite: ECON-150.*

ECON--SHU 205 *Poverty and Income Distribution*. Defines poverty and welfare. Analyzes who the poor are, why some people are rich and others poor, equality of opportunity, income and status, inequality, trends in the degree of inequality, government's role in income distribution, and international comparisons of inequality. *Prerequisite: ECON-150.*

ECON--SHU 206 *Economics of Energy and the Environment*. Economic analysis of major policy issues in energy and the environment, both domestic and international. Emphasis on market solutions to various problems and market limitations in the allocation of environmental resources. Energy issues focus on OPEC and world oil markets, with attention to reducing oil import vulnerability; taxation and regulation of production and consumption; conservation of natural resources; and the transition to alternative energy sources. Environmental issues include policies to reduce pollution. Substantial attention is paid to global warming caused by consumption of fossil fuels. *Prerequisite: ECON-150.*

ECON--SHU 207 *Urban Economics*. The city as an economic organization. Urbanization trends, functional specialization, and the nature of growth within the city; organization of economic activity within the city and its outlying areas, the organization of the labor market, and problems of urban poverty; the urban public economy; housing and land-use problems; transportation problems; and special problems within the public sector. *Prerequisite: ECON-150.*

ECON--SHU 208 *Money and Banking*. Money supply; banking as an industry; banks as suppliers of money; the Federal Reserve System and monetary control; monetary theory; and contemporary monetary policy issues. *Prerequisite: ECON-150.*

ECON--SHU 209 *Financial Crises*. This course will allow students to understand the origin and evolution of financial crises. Various policy options that may prevent and mitigate financial crises and the restructuring of the global financial architecture to prevent or limit future crises will be examined. Although the course will focus mostly on the US and on the most recent financial crisis, it will also examine earlier financial crises in the US (such as the Great Depression) and past financial bubbles such as the 17th century Dutch Tulip mania and the 1997 Asian crisis. *Prerequisite: ECON-150.*

ECON--SHU 211 *The Political Economy of East Asia: China's Development in a Comparative Perspective*. This course focuses on China's political and economic development over the last century and a half with particular attention to the last 33 years, the so-called Reform Period. Our three primary objectives are to (1) understand the historical trajectory of China's development path; (2) consider in what ways and to what degree the growth experiences of East Asia's high-performing economies helped inform China's economic policymakers decisions and shed light on the prospects for the long-term success of reforms in China; (3) assess the state of China's contemporary political economy. *Prerequisite: ECON-150.*

ECON--SHU 212 *Contemporary Chinese Economic Issues*. This course presents a practical and timely overview of the dynamic set of issues related to the major, ongoing changes in the Chinese economy and their effects both in China and abroad. Topics of discussion cover major issues on the macroeconomic, microeconomic, and political-economical front in China today: what China has done and where it is going, China's coming onto the world economic stage, market entry and access issues, dealing with important cultural issues, moving goods and capital around China, the "winners" and "losers" coming out of the reform, the ongoing process of China's transition from a primarily agricultural to a primarily industrial/service economy, protecting trade secrets, and other key issues. The readings are meant to be a background to build knowledge, and as this will be structured as a seminar, students are encouraged and graded on their active class participation and address issues of personal interest regarding the Chinese economy. *Prerequisite: ECON-202.*

ECON--SHU 250 *Economics of Global Business*. This course, intended for Economics students, examines the forces driving toward globalization: the integration of national business activities into globally competitive markets. International trade is a key driver of global integration. The role of comparative advantage as a determinant of the location of production is examined. Also examined are the reasons for and effects of government policies that create impediments to international trade. The second part of the course surveys the role of money and finance in global economic activity. The role of exchange rates as key variables in global finance is introduced. Also examined is the role of government policies toward the foreign exchange market, including the choice between fixed and floating exchange rates and the use of exchange controls to create impediments to currency exchanges. The course also introduces the concept of foreign direct investment and discusses the rising importance of multinational corporations. *Prerequisite: ECON-150.*

ECON--SHU 251 *Economics of Global Business for BUSF*. This course, intended for Business and Finance students, examines the forces driving toward globalization: the integration of national business activities into globally competitive markets. International trade is a key driver of global integration. The role of comparative advantage as a determinant of the location of production is examined. Also examined are the reasons for and effects of government policies that create impediments to international trade. The second part of the course surveys the role of money and finance in global economic activity. The role of exchange rates as key variables in global finance is introduced. Also examined is the role of government policies toward the foreign exchange market, including the choice between fixed and floating exchange rates and the use of exchange controls to create impediments to currency exchanges. The course also introduces the concept of foreign direct investment and discusses the rising importance of multinational corporations. *Prerequisite: ECON-150.*

ECON--SHU 255 *Economic Development*. Studies the problem of economic underdevelopment, with special reference to the countries of Asia, Latin America, and Africa. The building blocks of economic theory are used to understand the historical experiences of these countries. Macroeconomic topics covered

include economic growth, income distribution, and poverty, with particular emphasis on the concept of underdevelopment as a circular, self-reinforcing trap. Microeconomic topics include the study of particular markets that are especially relevant to developing countries: those for land, labor, and credit. Notions of market fragmentation, limited information, and incentive problems receive emphasis. Ends with international issues: trading patterns, capital flows, and global financial crises are studied from the viewpoint of developing countries. *Prerequisite: ECON-150.*

ECON--SHU 301 *Econometrics.* Examines a number of important areas of econometrics. The topics covered include identification and estimation of simultaneous equations models; model specification and testing; estimation of discrete choice models; and the analysis of duration models. In addition to covering the relevant theoretical issues, the course includes the application of these methods to economic data. *Prerequisite: ECON-201.*

ELECTRICAL ENGINEERING

EENG--SHU 251 Circuits. This course covers Passive DC circuit elements, Kirchoff's laws, electric power calculations, analysis of DC circuits, Nodal and Loop analysis techniques, voltage and current division, Thevenin's and Norton's theorems, and source-free and forced responses of RL, RC and RLC circuits. *Prerequisite: MATH-121.*

EENG--SHU 301 Advanced Circuits. The course concentrates on differential and multistage amplifier, current mirrors, current sources, active loads; frequency response of MOSFET, JFET and BJT amplifiers: Bode plots; feedback amplifiers, gain-bandwidth rule and feedback effect on frequency response; Class A, B and AB output stages; op-amp analog integrated circuits; piecewise-linear transient response; determination of state of transistors; wave-shaping circuits; MOS and bipolar digital design: noise margin, fan-out, propagation delay; CMOS, TTL, ECL; and an alternate week laboratory. The course studies design and analysis of analog integrated circuits, frequency response of amplifiers, feedback amplifiers, TTL and CMOS digital integrated circuits. *Prerequisite: EENG-251.*

EENG--SHU 303 Signals and Systems. This course centers on linear system theory for analog and digital systems; linearity, causality and time invariance; impulse response, convolution and stability; the Laplace, z- transforms and applications to Linear Time Invariant (LTI) systems; frequency response, analog and digital filter design. Topics also include Fourier Series, Fourier Transforms and the sampling theorem. Weekly computer-laboratory projects use analysis- and design-computer packages. The course establishes foundations of linear systems theory needed in future courses; use of math packages to solve problems and simulate systems; and analog and digital filter design. *Prerequisite: MATH-124.*

EENG--SHU 304 Electromagnetic Fields and Waves. Electromagnetic wave propagation in free space and in dielectrics, starting from a consideration of distributed inductance and capacitance on transmission lines. Electromagnetic plane waves are explored as a special case. The reflection and transmission of pulsed sources at discontinuities are discussed, while impedance transformation and matching are presented for harmonic time dependence. Snell's law and the reflection and transmission coefficients at dielectric interfaces are derived for obliquely propagation plane waves. Guiding of waves by dielectrics and by metal waveguides is demonstrated. Alternate-week laboratory. Objectives: Establish foundations of electromagnetic wave theory applicable to antennas, transmissions lines and materials; increase appreciation for properties of materials through physical experiments. *Prerequisite: CCSC-110.*

EENG--SHU 306 Instrumentation, Sensors and Actuators. The course focuses on electrical circuits and components, passive and active filtering for signal conditioning, dynamic measurement system response characteristics, analog signal processing, digital representation, data acquisition, sensors, actuators and actuator characteristics. Studies of measurement systems via computer simulation also are discussed. The laboratory experiments draw upon examples from all disciplines of engineering such as data acquisition, operational amplifiers, temperature measurement, and motion and force measurements. *Prerequisite: EENG-251.*

EENG--SHU 322 Electronics. This course focuses on circuit models and amplifier frequency response, op-amps, difference amplifier, voltage-to-current converter, slew rate, full-power bandwidth, common-mode rejection, frequency response of closed-loop amplifier, gain-bandwidth product rule, diodes, limiters, clamps and semiconductor physics. Other topics include Bipolar Junction Transistors; small-signal models, cut-off, saturation and active regions; common emitter, common base and emitter-follower amplifier configurations; Field-Effect Transistors (MOSFET and JFET); biasing; small-signal models; common-source and common gate amplifiers; and integrated circuit MOS amplifiers. The alternate-week laboratory experiments on OP-AMP applications, BJT biasing, large signal operation and FET characteristics. The course studies design and analysis of operational amplifiers; small-signal bipolar junction transistor and field-effect transistor amplifiers; diode circuits; differential pair amplifiers and semiconductor device-physics fundamentals. *Prerequisite: EENG-251.*

EENG--SHU 351 Analog and Digital Communication Theory. The course introduces the principles of the various analog communication fundamentals. Amplitude modulation and demodulation, angle modulation and demodulation. Noise performance of various receivers and information theory with source coding theorem are also dealt. The labs emphasize experiential learning of basic analog and digital communication theory concepts and applications, including experiments demonstrating analog and digital modulation techniques. *Prerequisite: EENG-303.*

EENG--SHU 352 Control Systems. The course introduces the principles of dynamic system modeling, analysis, and feedback control design with extensive, hands-on computer simulation. Modeling and analysis of dynamic systems. Description of interconnected systems via transfer functions and block/signal-flow diagrams. System response characterization as transient and steady-state responses and error considerations. Stability of dynamical systems: Routh-Hurwitz criterion and Nyquist criterion. Graphical methods for dynamical system analysis and design: root locus and Bode plot. Computer-aided feedback control design for mechanical, aerospace, robotic, thermo-fluid, and vibratory systems. *Prerequisite: MATH-124.*

EENG--SHU 353 Very Large Scale Integrated (VLSI) Circuit Design. The course offers an overview of integrated circuit-design process: planning, design, fabrication and testing; device physics: PN junction, MOSFET and Spice models; inverter static and dynamic behavior and power dissipation; interconnects: cross talk, variation and transistor sizing; logic gates and combinational logic networks; sequential machines and sequential system design; subsystem design: adders, multipliers, static memory (SRAM), dynamic memory (DRAM). Topics include floor planning, clock distribution, power distribution and signal integrity; Input/Output buffers, packaging and testing; IC design methodology and CAD tools; implementations: full custom, application-specific integrated circuit (ASIC), field programmable gate arrays (FPGA). The course provides foundations of VLSI design and custom VLSI design methodology and state-of-the-art CAD tools. *Prerequisite: EENG-322.*

EENG--SHU 354 Electrical Energy and Power Systems. Introduction to electric-energy sources, energy-storage devices, energy economics, environmental issues and electrical hazards. Principles of electric power systems transmission and distribution. Basic electromechanical conversion systems pulse and distribution transformers, induction rotating machines. Principles of electric energy conversion, static power supplies, static controllers and electric-power quality. Fundamentals of power management heat-sinks and cooling systems. Experiments with basic electrical machines. *Prerequisite: EENG-304.*

EENG--SHU 355 Digital Signal Processing. The course introduces the principle concepts of discrete-time signals and systems, frequency analysis, sampling of continuous time signals, the z-transform, implementation of discrete time systems, the discrete Fourier transform, fast Fourier transform algorithms, filter design techniques. The labs cover experiential learning of digital signal processing concepts, and require students to use knowledge to create and build prototypes that demonstrate their understanding of the material covered in the lecture. *Prerequisite: EENG-303.*

EENG-356 Communication Systems. The course introduces the principles of the various analog communication fundamentals. Amplitude modulation and demodulation, angle modulation and demodulation. Noise performance of various receivers and information theory with source coding theorem are also dealt. The labs emphasize experiential learning of basic analog and digital communication theory concepts and applications, including experiments demonstrating analog and digital modulation techniques. *Prerequisite: EENG-303.*

EENG--SHU 375 Robotic Systems. This course presents an overview of Robotics covering a selection of topics including Controls, Localization, Motion Planning, Sensing, Kinematics, and Human-Robot Interaction. Practical lab and simulation exercises complement the lectures. The students will further specialize and consolidate their knowledge through semester-long hands-on projects that involve the design, implementation, and testing of robotic systems and applications. *Prerequisite: EENG-352.*

EENG--SHU 400 Senior Capstone Design Project I. The goal of The Capstone Design Project is to provide students with a major design experience that leverages the knowledge and skills acquired through their undergraduate studies and co-curricular experiences. Its structure includes a process of design with measurable metrics, and incorporation of appropriate engineering standards and multiple realistic constraints. Emphasis is placed on clearly framing the design problem and following the design process to result in an optimized design solution. Students are encouraged to build prototypes of their designs and seek validation of their solutions through simulations and experiments, as appropriate. The Capstone Project aims to be collaborative and trans-disciplinary across several engineering streams. The emphasis is on students applying the design process to solve real-world problems in a 21st century, global context. The projects address engineering and technology topics that overlap with the sciences, social sciences, liberal arts or business. The Capstone provides an opportunity to integrate technical, human, aesthetic, business and ethical concerns with engineering design. Students practice critical skills in communication, team-building, and project management. There is a mid-semester review of the projects. Students complete their design, as well as build and test their prototypes, if applicable, in spring semester. The senior year culminates in a comprehensive project report and design review by a committee of faculty and other professionals. Senior Capstone Design Project I (ENGR-AD-400) and Senior Capstone Design Project II (ENGR-AD-401) both consist of two, seven-week modules. Module I, in the fall semester, has a lecture and a project component focusing on the design process, problem definition, project management and Ethics. Module II in the fall is focused on creating the design solution, which is implemented in Module III and tested and validated in Module IV. *Prerequisite: Senior Standing.*

EENG--SHU 401 Senior Capstone Design Project II. The goal of The Capstone Design Project is to provide students with a major design experience that leverages the knowledge and skills acquired through their undergraduate studies and co-curricular experiences. Its structure includes a process of design with measurable metrics, and incorporation of appropriate engineering standards and multiple realistic constraints. Emphasis is placed on clearly framing the design problem and following the design process to result in an optimized design solution. Students are encouraged to build prototypes of their designs and seek validation of their solutions through simulations and experiments, as appropriate. The Capstone Project aims to be collaborative and trans-disciplinary across several engineering streams. The emphasis is on students applying the design process to solve real-world problems in a 21st century, global context. The projects address engineering and technology topics that overlap with the sciences, social sciences, liberal arts or business. The Capstone provides an opportunity to integrate technical, human, aesthetic, business and ethical concerns with engineering design. Students practice critical skills in communication, team-building, and project management. There is a mid-semester review of the projects. Students complete their design, as well as build and test their prototypes, if applicable, in spring semester. The senior year culminates in a comprehensive project report and design review by a committee of faculty and other professionals. Senior Capstone Design Project I (ENGR-AD-400) and Senior Capstone Design Project II (ENGR-AD-401) both consist of two, seven-week modules. Module I, in the fall semester, has a lecture and a project component focusing on the design process, problem definition, project management and Ethics. Module II in the fall is focused on creating the design solution, which is implemented in Module III and tested and validated in Module IV. *Prerequisite: EENG-400.*

ENGLISH

ENGL-SHU 100A *English for Academic Purposes: Storying Science.* The objective of this seminar is for students to develop and practice academic speaking, listening, reading, and writing skills that will enable them to engage in discourse about how we view science as a discipline. We will explore the history of scientific rhetoric by investigating two co-dependent narrative arcs in the “story” of science: the way scientists write/talk/think in scientific discourse, and the way we write/talk/think about science and scientists. For centuries, science bore little resemblance to the empirical discipline that we recognize today, yet, while modern science has claimed the language and tools of objectivity, it is wrong to believe that it is free of argument, controversy, and bias. We will consider how science emerged from philosophy, advanced, and adjusted its methodology through ages of renaissance, enlightenment, industrialization, and global expansionism, and usurped religion as the ultimate authority on the “great” questions of life along the way. We will discuss the genres of science writing, science in media and digital science, and debate questions of ethics and popularization. In parallel, we will look at the ways in which science and scientists have been portrayed in popular culture, literature and the visual arts, and equally, how a desire to appear “scientific” has influenced everything from literary theory to advertising. As students engage with this content, they will practice high-level language, communication, and discourse skills required for the university setting, with an emphasis on speaking and listening. The EAP Seminar is designed to model a college classroom—students will engage with the content of the course individually and in small groups; in formal and informal writing and speaking assignments; and by participating in group projects—but there will be additional emphasis on refining and expanding English language skills.

ENGL-SHU 100B *English for Academic Purposes: Where do we go from here?*

This freshman EAP course is designed to help develop your academic speaking, listening, reading and writing skills in English. At the same time, as a content-based EAP course, it will aim to help you better understand, discuss, and apply some key concepts from social science and philosophy. Specifically, this course will examine a distinction many have made in the Twentieth and Twenty-first Centuries (and earlier) between two ways of knowing and living that human beings exhibit. These two ways are summed up in the course’s title as 1) Massification (a.k.a. objectification, alienation, dehumanization) and 2) Humanization (a.k.a. authenticity, critical consciousness, liberation). To examine this theme, the course will be further divided into four parts: (1) To begin, we will explore and discuss theories regarding how human beings psychologically & socially construct knowledge/reality. (2) We will then go on to apply these concepts in order to examine a critical feature of our modern world, namely how it is shaped by consumerism/materialism. (3) This will, in turn, lead us to examine the social, environmental, psychological effects consumerism is having on our world and ourselves. (4) This will finally lead us to examine some fundamental, philosophical questions human beings have asked for ages, such as: What is happiness and how can it be attained? How can one live a meaningful life at this time? How can we improve our society (locally, national and globally)? As you engage with this content, you will practice high-level language, communication, and discourse skills required for the university setting, with an emphasis on speaking and listening. The EAP Seminar is designed to model a college classroom—you will engage with the content of the course individually and in small groups; in formal and informal writing and speaking assignments; and by participating in group projects—but there will be additional emphasis on refining and expanding English language skills.

ENGL-SHU 100C *English for Academic Purposes: Cities and Urban Consciousness.* Cities and Urban Consciousness aims to develop students’ speaking, listening, reading, and writing skills while at the same time engendering an intuitive sense of the city. Instead of lectures delivering factual knowledge, the course relies on the mutually enriching interaction between knowing, understanding, thinking and feeling to achieve as comprehensive a sense of urban reality as possible. While all four language modalities will be practiced, there is a special focus on speaking and listening. The emphasis is on sensibility and communicating sensibility, encouraging the much-neglected ‘unquantifiables’ as a legitimate area of enquiry, as capable of contributing to research as any other. The course draws on and replicates the lived urban experience in the student’s learning, straddling the Humanities, Social Science and STEM. As students engage with this content, they will practice high-level language, communication, and discourse skills required for the university setting. The EAP Seminar is designed to model a college classroom—

students will engage with the content of the course individually and in small groups; in formal and informal writing and speaking assignments; and by participating in group projects—but there will be additional emphasis on refining and expanding English language skills.

ENGL-SHU 100D *English for Academic Purposes: The Corporation and the Individual.* In this English for Academic Purposes seminar, we will develop speaking, listening, writing, and reading skills while exploring the relationship between the corporation, or business organization, and the individual. The root of the word “corporation” is “corps” or “body,” and this body has become a complex being in the 21st century. How is it like and not like an individual? What is its obligation to its human parts and what obligation do those human parts have to the whole? In a time of globalization, those human parts are in motion and the borders of the body itself have become more fluid, less narrowly defined. What new models of this “body” are emerging? How is it positioned (or not) to meet the demands of the developing century? Are there parallels to this “body” in nature itself? Who are traditional “insiders” and “outsiders” and how might such roles be reimagined? As we interrogate the role of innovation and creative problem-solving in a business setting, we will apply such principles to our own work in the classroom and evaluate their impact. What lessons can be learned or new models explored? As students engage with this content, they will practice high-level language, communication, and discourse skills required for the university setting, with an emphasis on speaking and listening. The EAP Seminar is designed to model a college classroom—students will engage with the content of the course individually and in small groups; in formal and informal writing and speaking assignments; and by participating in group projects—but there will be additional emphasis on refining and expanding English language skills.

ENGL-SHU 100S1 *English for Academic Purposes: Storying Science: How the narratives of science have changed - Part I.* Part I of two sections: The objective of this seminar is for students to develop and practice academic speaking, listening, reading, and writing skills that will enable them to engage in discourse about how we view science as a discipline. We will explore the history of scientific rhetoric by investigating two co-dependent narrative arcs in the “story” of science: the way scientists write/talk/think in scientific discourse, and the way we write/talk/think about science and scientists. For centuries, science bore little resemblance to the empirical discipline that we recognize today, yet, while modern science has claimed the language and tools of objectivity, it is wrong to believe that it is free of argument, controversy, and bias. We will consider how science emerged from philosophy, advanced, and adjusted its methodology through ages of renaissance, enlightenment, industrialization, and global expansionism, and usurped religion as the ultimate authority on the “great” questions of life along the way. We will discuss the genres of science writing, science in media and digital science, and debate questions of ethics and popularization. In parallel, we will look at the ways in which science and scientists have been portrayed in popular culture, literature and the visual arts, and equally, how a desire to appear “scientific” has influenced everything from literary theory to advertising. As students engage with this content, they will practice high-level language, communication, and discourse skills required for the university setting, with an emphasis on speaking and listening. The EAP Seminar is designed to model a college classroom—students will engage with the content of the course individually and in small groups; in formal and informal writing and speaking assignments; and by participating in group projects—but there will be additional emphasis on refining and expanding English language skills.

ENGL-SHU 100S2 *English for Academic Purposes: Cities and Urban Consciousness - Part I.* Part I of two sections: Cities and Urban Consciousness aims to develop students’ speaking, listening, reading, and writing skills while at the same time engendering an intuitive sense of the city. Instead of lectures delivering factual knowledge, the course relies on the mutually enriching interaction between knowing, understanding, thinking and feeling to achieve as comprehensive a sense of urban reality as possible. While all four language modalities will be practiced, there is a special focus on speaking and listening. The emphasis is on sensibility and communicating sensibility, encouraging the much-neglected ‘unquantifiables’ as a legitimate area of enquiry, as capable of contributing to research as any other. The course draws on and replicates the lived urban experience in the student’s learning, straddling the Humanities, Social Science and STEM. As students engage with this content, they will practice high-level

language, communication, and discourse skills required for the university setting. The EAP Seminar is designed to model a college classroom—students will engage with the content of the course individually and in small groups; in formal and informal writing and speaking assignments; and by participating in group projects—but there will be additional emphasis on refining and expanding English language skills.

ENGL-SHU 101A *English for Academic Purposes: Seminar: Storying Science – Advanced.*

Advanced Level: The objective of this seminar is for students to develop and practice academic speaking, listening, reading, and writing skills that will enable them to engage in discourse about how we view science as a discipline. We will explore the history of scientific rhetoric by investigating two co-dependent narrative arcs in the “story” of science: the way scientists write/talk/think in scientific discourse, and the way we write/talk/think about science and scientists. For centuries, science bore little resemblance to the empirical discipline that we recognize today, yet, while modern science has claimed the language and tools of objectivity, it is wrong to believe that it is free of argument, controversy, and bias. We will consider how science emerged from philosophy, advanced, and adjusted its methodology through ages of renaissance, enlightenment, industrialization, and global expansionism, and usurped religion as the ultimate authority on the “great” questions of life along the way. We will discuss the genres of science writing, science in media and digital science, and debate questions of ethics and popularization. In parallel, we will look at the ways in which science and scientists have been portrayed in popular culture, literature and the visual arts, and equally, how a desire to appear “scientific” has influenced everything from literary theory to advertising. As students engage with this content, they will practice high-level language, communication, and discourse skills required for the university setting, with an emphasis on speaking and listening. The EAP Seminar is designed to model a college classroom—students will engage with the content of the course individually and in small groups; in formal and informal writing and speaking assignments; and by participating in group projects—but there will be additional emphasis on refining and expanding English language skills.

ENGL-SHU 101B *English for Academic Purposes: Where do we go from here? Massification vs.*

Humanization – Advanced. This freshman EAP course is designed to help develop your academic speaking, listening, reading and writing skills in English. At the same time, as a content-based EAP course, it will aim to help you better understand, discuss, and apply some key concepts from social science and philosophy. Specifically, this course will examine a distinction many have made in the Twentieth and Twenty-first Centuries (and earlier) between two ways of knowing and living that human beings exhibit. These two ways are summed up in the course’s title as 1) Massification (a.k.a. objectification, alienation, dehumanization) and 2) Humanization (a.k.a. authenticity, critical consciousness, liberation). To examine this theme, the course will be further divided into four parts: (1) To begin, we will explore and discuss theories regarding how human beings psychologically & socially construct knowledge/reality. (2) We will then go on to apply these concepts in order to examine a critical feature of our modern world, namely how it is shaped by consumerism/materialism. (3) This will, in turn, lead us to examine the social, environmental, psychological effects consumerism is having on our world and ourselves. (4) This will finally lead us to examine some fundamental, philosophical questions human beings have asked for ages, such as: What is happiness and how can it be attained? How can one live a meaningful life at this time? How can we improve our society (locally, national and globally)? As you engage with this content, you will practice high-level language, communication, and discourse skills required for the university setting, with an emphasis on speaking and listening. The EAP Seminar is designed to model a college classroom—you will engage with the content of the course individually and in small groups; in formal and informal writing and speaking assignments; and by participating in group projects—but there will be additional emphasis on refining and expanding English language skills.

ENGL-SHU 101C *English for Academic Purposes: Seminar: Negotiating Self and Other – Advanced.*

This seminar is meant to develop English for academic purposes literacy in all four language modalities (speaking, listening, reading, and writing) by exploring an interdisciplinary theme that, while grounded in the social sciences, also cuts across the humanities, especially philosophy. The “self” is a natural place to begin. The problem is that this is all-too-often simply taken for granted. What are selves? Are we what we say we are? But what about the way we appear to others? An important constraint on what we may become is our membership in various communities. Students will be presented with a variety of texts (written and visual, including video, audio clips, and print advertising) in order to assist them in forming their opinions

about the process of negotiation between self and other in society. Moreover, the concept of ‘negotiation’ itself will be highlighted and explored in this context. Some of the subthemes that will be discussed will be self-concept and identity construction, culture and sub-culture, treatment of minority groups, gender identity development, and material and consumer identities. As students engage with this content, they will practice high-level language, communication, and discourse skills required for the university setting, with an emphasis on speaking and listening. The EAP Seminar is designed to model a college classroom—students will engage with the content of the course individually and in small groups; in formal and informal writing and speaking assignments; and by participating in group projects—but there will be additional emphasis on refining and expanding English language skills.

ENGL-SHU 110 *English Language Seminar: Intercultural Communication.* This short course will provide students with the opportunity to practice their academic English by learning about intercultural communication and etiquette. Students will be engaged to think about ‘intercultural variables’ and ‘communication styles’ that involve both verbal and non-verbal communication. Much of the course will include reflection on short case studies of intercultural contact between Chinese and Americans (other cultures may also be considered). Students will be encouraged to question assumptions they have about “normal” communication. They will also be prompted to develop their own set of intercultural values in light of what they have learned. The course will include focused practice in the use of all four language modalities: speaking, listening, writing, and reading..

ENGL-SHU 120 *English Language Seminar: British Literature, 18th Century to the Present.* This course will offer a survey of British literature from the eighteenth century to the present, beginning with the Romantic period and ending with postcolonial literature. Students will study the process of canon formation and the writing of literary history, the growing division between popular and high literature, and the representation of imperialism and postcolonialism. Students will develop critical thinking skills and practice English reading and writing skills through class discussion, essay writing, and short weekly writing assignments. Authors will include Jane Austen, William Wordsworth, Lord Alfred Tennyson, Virginia Woolf, and others.

GLOBAL CHINA STUDIES

GCHN-SHU 110 *The Concept of China.* From the Warring States period to the present, what have Chinese and others understood to be the meaning of “China,” and what have been the broad implications of this understanding? This course is divided into four chronological periods: Antiquity—from the period of the ‘central kingdoms’ to the formation of the early empire; Middle Period—China Among Equals; Early Modern: 1350-1910—China, Global Trade, and Imperialism; Modern: 1910-present—China Redux
Prerequisite: None.

GCHN- SHU 201 *Digital Chinese Humanities*

This course introduces students to computational thinking with specific reference to Global China Studies, and provides a foundation for future research. Areas of focus may include the creation, enhancement, and analysis of digitized written texts, especially primary sources; methodologies for the use of the internet as a research and translation tool; the production and processing of photographs: audio recordings: video clips: and geospatial data. *Prerequisite: None.*

GCHN- SHU 202 *Archaeology in China:* Archaeological discoveries since the early twentieth century and especially in recent years have transformed our understanding of China’s past. This courses addresses those discoveries, introduces students to the art and science of Chinese paleography, and to issues related to site preservation and the world cultural heritage. *Prerequisite: None.*

GCHN- SHU 203 *Art of War in China:* Strategic thought and military practice from Sun Zi to Mao, with attention to the relationship of representations to reality. Introduces to Chinese military history on its own terms rather than viewed through Western eyes. *Prerequisite: None.*

GCHN- SHU 204 *Ethnic Diversity in China.* Aims to dispel the image of China as monolithic and unvarying by focusing attention on the ebb and flow of in-migration and out-migration in China and on the historical role of ethnic and minority peoples and individuals in China at every level, from everyday life to scientific collaboration to religious belief to leadership. *Prerequisite: None.*

GCHN- SHU 206 *Global (Chinese)Texts.* Global and local perspectives in the production and consumption of literary texts. The course will focus on a single text or the work of a single author that serves or could serve as the focal point for a cultural heritage that belongs to the entire globe. What made a text “global” in its own day; how has its afterlife transformed it into a global cultural commodity, and how do global media forms carry on its cultural legacy today? *Prerequisite: None.*

GCHN- SHU 207 *20th-century Chinese Writers in Global Context.* The literary scene in the 20th century Chinese-speaking world is diverse in sound and script, vast in the scope of subject matters, and challenging for those migrant or exilic minds whose creative energy is driven by their critical insight to the world around them. Working in, outside, and between places like mainland China, Taiwan, Hong Kong, Malaysia, America, and France, Chinese-language writers may have in mind an imagined community of fellow countrymen when they write. Oftentimes, however, they may also ask provocative questions about nationalism, linguistic loyalty, and authenticity as Anglophone, Francophone, or bilingual writers living in the West. From and across multiple cultural margins, they speak to probe the nature of modernity, cultural contact, and otherness amid the global flows of labor and ideas. How do Lu Xun, Lao She, Ha Jin, Alai, and Gao Xingjian represent China on the world stage and find their place in this picture? Where in their works can we find stylistic and cultural hybridization? How do novels and stories by Zhang Ailing, Bai Xianyong, Maxine Hong Kingston, Gish Jen, and Shirley Lim cement or deconstruct the conventional ground on which we compare Eastern and Western civilizations? What kind of an alternative literary geography, and worldview, do these writers offer? *Prerequisite: None.*

GCHN-210 *Topics in Global China Studies.*

GCHN- SHU 220 *Chinese Science:* This course adopts an interdisciplinary approach to the study of Chinese science and technology analyzed in their intellectual, social, and cultural and global context. We

will examine the history, philosophy and anthropology of science and technology in China, including its intersection with natural philosophy, and will also assess the conclusions about culture and national power that used science and technology as the basis of comparison. *Prerequisite: None.*

GCHN- SHU 221 *Chinese Inventions in Global Context.* To what extent were the “four great inventions” for which China is known--the compass, gunpowder, printing and paper—the product of collaboration and how did they both enable China to expand its reach into the world beyond its borders and attract outsiders into China? *Prerequisite: None.*

GCHN- SHU 222 *History of Chinese Medicine.* Introduction to the history of Chinese medicine: its origins and transformations. We will explore the history of healing and the medical professions in China from earliest times down to the present, taking into account the interactive development of Traditional Chinese medicine and Western biomedicine, and of developments and discoveries in China and overseas. Students will become familiar with some of the canonical literature on medicine in China and will gain an understanding of the ways in which those texts and ideas have influenced medical practices. *Prerequisite: None.*

GCHN- SHU 223 *Muslim Science and China.* Chinese-Islamic scientific exchanges across the Silk Roads, covering such areas as astronomy, anatomy, chemistry and other fields as well as the interaction of science and religion in a non-western context. *Prerequisite: None.*

GCHN- SHU 224 *Chinese Maritime History.* Investigates China’s long tradition of shipbuilding and navigational practice in terms of internal riverine communication, coastal defense, and ocean voyages; its early naval dominance; the famous Ming treasure fleets that sailed as far the Persian Gulf and the east coast of Africa; Qing shipyards; and recent developments. *Prerequisite: None.*

GCHN- SHU 240 *Modern Chinese Governance.* State structure and governance and the question of transition from single party authoritarian rule in a poor society. Considers alternative trajectories from a single party authoritarian rule in a middle income society to a democratic society like those of the formerly authoritarian East Asian societies surrounding China. *Prerequisite: None.*

GCHN- SHU 241 *Chinese Revolutions:* Revolutions both successful and unsuccessful in China; foreign influences and their significance in this context. Ideology, participation, leadership, strategies and tactics adopted by such diverse groups as the White Lotus, Taiping, and Boxers; the 1911 nationalist and 1949 communist revolutions, and their legacies. *Prerequisite: None.*

GCHN- SHU 242 *Mao and the Chinese Revolution.* This course introduces the historical relationship established in the twentieth century between Mao Zedong, his philosophy of history and revolution, and the Chinese Revolution in global context. The course provides a thematic lens through which to view one aspect of modern Chinese and global history. The working premise is that the revolution made Mao as much as Mao made the revolution. We will investigate Mao’s thought and theories, as well as his revolutionary practice, not as biographical artifacts but as products of and contributors to the revolutionary situation in China and the world in the twentieth century. We end with Mao’s afterlives. *Prerequisite: None.*

GCHN- SHU 243 *Chinese Environmental Studies.* How and why has the understanding of humans’ relationship to nature changed in China, and how effectively has the Chinese state responded to environmental challenges at the local, national and global levels? Examines changing approaches to resource exploitation and sustainable development taking into account the impact of different political frameworks. *Prerequisite: None.*

GCHN- SHU 250 *Chinese Geographies* This course examines questions of geography, topography, and ethnography from the early imperial period to the present with special attention to Chinese borderlands. Topics include the relation between center and periphery; cross-border relations; the changing population

of residents and sojourners. Han and minorities; travel and transportation networks; and trade and material exchanges including the “tributary system”. *Prerequisite: None.*

GCHN- SHU 251 *Worldwide Chinese Diaspora.* This course introduces students to the history and cultural formations of worldwide Chinese migrations and diasporic communities, including change over the last two centuries and evolving global diasporic relationships and interactions. Some topics of interest include Zheng He’s legendary maritime travels on the imperial treasure fleets, the opium trade and its implication for early transnational Chinese capitalism, labor migration and exclusion in North America, socio-political and cultural indigenization of Chinese communities in Southeast Asia, and the coolie trade in the Caribbean region. Materials of study include history, essay, literature, and film. *Prerequisite: None.*

GCHN- SHU 252 *20th-Century East Asia-U.S. Relations.* This is a lecture course focusing on the changing relationship between East Asian countries and the United States in the 20th-century. On the basis of reviewing the early encounters between East Asia and America in the 18th and 19th centuries, this course covers the major political, economic, military, and cultural developments, as well as the dynamics underlying them, that have shaped the confrontation and cooperation between various East Asian countries and the United States in the past 100 years. In particular, this course aims to help students develop a better understanding of how nations with different values, cultural-historical backgrounds, political institutions, and levels of economic development may coexist in today’s world. *Prerequisite: None.*

GCHN- SHU 260 *Modern Chinese Economy.* Examines the major economic transitions (and failures to transform) in China since the establishment of the People’s Republic, and spends considerable time on the current transition from a centrally planned economy to a state-dominated market economy, considering possible future trajectories. *Prerequisite: None.*

GCHN- SHU 261 *China and the Great Depression.* How a combination of global economic depression, domestic political instability, imperialist remnants, and partial occupation affected Chinese economy and society in the 1930s, paying attention to regional and urban/rural difference. *Prerequisite: None.*

GCHN- SHU 262 *China Trade in Global Context.* Overview of Chinese international trade from the ancient Silk Roads to the advent of Europeans and from Chinese control of eighteenth-century intra-Asian markets to its entry into the World Trade Organization. *Prerequisite: None.*

GCHN-263 *Tea, Silver, and Opium in China.*

GCHN-280 *Play and Games in Early China.*

GCHN-281 *Beliefs and Social Practice in China.*

GCHN-282 *China and Global Religions.*

GCHN-290 *Topics in Global China Studies,* specific topics vary from semester to semester. *Prerequisite: None.*

HUMANITIES

HUMN- SHU 201 *The Theory and Practice of History.* What is history? This course offers an introduction to theories and practices of history drawn from different parts of the world. It considers the utility of such different historical sources as written documents, excavated artifacts, oral histories, and visual culture and how to balance contradictory accounts of the same event. *Prerequisite: None.*

HUMN- SHU 202 *Literary Interpretation.* Introduces students to the demands and pleasures of university-level investigation of literature. Students develop the tools necessary for advanced criticism, including close-reading skills, knowledge of generic conventions, mastery of critical terminology, and skill at a variety of modes of analysis, from the formal to the historical. Also emphasizes the writing process, with the production of four to five formal papers. *Prerequisite: None.*

HUMN- SHU 203 *Central Problems in Philosophy.* This course introduces students to the discipline of philosophy by way of several philosophical problems, including skepticism, the ethics of punishment, and the existence of God. But philosophy is more than a set of specific problems. It is a way of attacking problems. We focus on the method of philosophy: clear, careful, analytical reasoning. We practice this method and hone our philosophical skills both in class discussions and in written work. *Prerequisite: None.*

HUMN- SHU 204 *Logic.* All philosophers are wise. Socrates is a philosopher. Therefore, Socrates is wise. Our topic is the nature of this therefore. Logic is the science of reasoning—the study of the ways in which statements support or contradict one another. We investigate the logical structure of everyday language and see how the correctness or incorrectness of reasoning depends on this structure. We develop a formal language in order to make this structure more perspicuous. *Prerequisite: None.*

HUMN- SHU 210 *Modern South Asia.* Situated at the center of the Indian Ocean world, the South Asian region is home to over a billion people, and is the site of a rich and vibrant history. The course explores this history, with a focus on understanding major political, economic, cultural, and environmental changes as they affected ordinary people and shaped the nature of collective identities (religious, caste, class, regional, linguistic, national, etc.) in the region over time. Learning how collective identities have been produced historically will enable you to appraise and navigate competing models of nationalism, cosmopolitanism, and universalism in the world today. *Prerequisite: None.*

HUMN- SHU 211 *The Making of the Muslim Middle East.* Islam changed and shaped the Middle East, the Mediterranean world, and South Asia following its emergence in the seventh century. Muslims subsequently developed and expressed their faith in the disciplines of law, theology, and mysticism, even as their religious communities fractured into a variety of Sunni and Shi'a groups. This course focuses on primary sources to examine the richness of Islamicate civilization in the pre-modern world, including inter-religious relations as well as political and economic trends. *Prerequisite: None.*

HUMN- SHU 212 *Africa since 1940.* Examines how Africa got to be where it is now. Covers the period from the beginning of the crisis that shook colonial empires in the 1940s through the coming to power of independent African governments on most of the continent in the 1960s to the fall of the last white regime in South Africa in 1994, by which time the already independent countries of Africa had found themselves in deep crisis. By bridging the conventional divide between “colonial” and “independent” Africa, the course opens up questions about the changes in African economies, religious beliefs, family relations, and conceptions of the world around them during the last half century. Students read political and literary writings by African intellectuals, as well as the work of scholars based inside and outside Africa, and view and discuss videos. The course emphasizes the multiple meanings of politics—from local to regional to Pan-African levels—and aspires to give students a framework for understanding the process of social and economic change in contemporary Africa. *Prerequisite: None.*

HUMN- SHU 213 *The Age of Euro-American Empires.* Examines European expansion in the early modern period and the creation of an interconnected Atlantic world with particular emphasis on North America and the Caribbean; the roles of Europeans, American natives, and Africans in forming systems of

trade and patterns of settlement; the evolution of slavery; and the development of new political structures, changing religious beliefs, and evolving family relationships in America. The course also assesses the imperial context of these developments. *Prerequisite: None.*

HUMN- SHU 214 *European Thought and Culture: 1750-1870.* Study of major themes in European intellectual history from the end of the Enlightenment to the last decades of the 19th century, considered in the light of the social and political contexts in which they arose and the cultural backgrounds that helped shape them. Topics include romanticism, liberal and radical social theory, aestheticism, the late 19th-century crisis of values, and the rise of modern social science. *Prerequisite: None.*

HUMN- SHU 215 *The U.S. in a Transnational and Global Perspective: America and the World since 1898.* This course is designed to explore ways of narrating a history of the United States that are not wholly contained within the territory of the United States. It seeks to identify histories larger than that of the United States within which the history of America is embedded and entangled, with the aim of rethinking the basic narrative of American history. Chronologically, it examines America's place in the world from the Spanish-American War to the presidency of Barack Obama. Themes range from immigration and economics to culture and politics in their global and transnational aspects. The course focuses on readings and discussion. *Prerequisite: None.*

HUMN- SHU 216 *The Ancient Mediterranean World.* The ancient Mediterranean, from Spain to Egypt and the Levant, is the cradle from which Western civilization grew. This course covers the different cultures of the region, with particular interest in their interaction and the conquest of the entire region by Rome. The course examines the complex dynamics of Rome's relationship to its subject peoples, as Roman trappings were overlaid upon native traditions. *Prerequisite: None.*

HUMN- SHU 217 *The Crusades.* The history of the Crusades (1095–1291 C.E.) is an important chapter in European imperialism and a manifestation of deep religious conviction. Examines the background in Europe leading to the Crusades; the social, political, and economic situation in the eastern Mediterranean before the Crusades; the fortunes of the Crusader (Latin) Kingdom of Jerusalem; and the reactions of Europeans and Easterners to one another. Examines and reevaluates the legacy of the Crusades on both the Eastern and the Western worlds. *Prerequisite: None.*

HUMN- SHU 218 *Global Environmental History.* This course offers an overview of global environmental history with a focus on the period from 1500 C.E. to the present—a time marked by a dramatic intensification in the use of land, water, and energy resources around the world. Our central goal is to understand the relationship between globalization, natural resource use, and environmental change, and to explain how this relationship unfolded (and continues to unfold) differently in major world regions. This course assumes no background knowledge in either world or environmental history. *Prerequisite: None.*

HUMN-2 SHU 19 *Global History of Medicine.* This course explores the history of medicine from a global perspective. We study both the circulation and exchange of ideas, texts, and materia medica among different regions, and explore how healing was differently practiced and experienced in regions characterized by distinctive disease ecologies, social relations, and cultural understandings of illness and the body. In teasing out the relationship between "global" and "local", we probe important questions about the agency of non-western and lower-class people in shaping the history of medicine, including "western" biomedicine. *Prerequisite: None.*

HUMN- SHU 220 *Cold War.* The subject is the Cold War as global conflict. The course focuses on Europe and the Third World, as well as on the United States and the Soviet Union. It examines issues in international politics and diplomacy, nuclear rivalry, and the culture of the bomb, Cold War economic competition and development policies, and the impact of the Cold War on culture and gender in various countries. *Prerequisite: None.*

HUMN- SHU 221 *Chinese Civilization: A Historical Survey.* This course surveys Chinese civilization from its pre-historical origins to around 1800. For over two thousand years, China stood as a major center

of civilization in East Asia, and its cultural influence reached far beyond. Students are introduced not only to the formation and development of Chinese civilization but also to the continuous contacts and exchanges between China and the outside world. The main topics on which the course focuses are the formative/axial age (700-200 B.C.E.), the first unification and the early empires (200 B.C.E.-200 C.E.), the medieval transformation (750-1200 C.E.), and the later imperial period and the advent of early modern society (1400-800 C.E.). The goal of this survey is to give students a better understanding of the essence of Chinese culture, the historical patterns within China's past, and the achievements and scope of Chinese civilization. *Prerequisite: None.*

HUMN- SHU 222 *China in the Global Context.* This course examines China in the global context since long before the coming of Europeans in the 1500s. Topics include religion and belief systems, including Buddhism, Confucianism, Daoism, Christianity, and Islam; trade in tea, silver, opium, foodstuffs, silk, and other exotica; intellectual exchange; art; law; travel; diasporas; shipping; weaponry; foreign representations of China and Chinese representations of others. *Prerequisite: None.*

HUMN- SHU 223 *Empires and Imperialism in East Asia.* This course examines empire building and cultural encounters in the East Asia region, comparing the character of empires across time and space, as well as the politics of human diversity. We look at the nuts and bolts of empire building, as well as how cultures of conquest shape identity (especially ethnicity and gender) and regional geopolitics. *Prerequisite: None.*

HUMN- SHU 224 *Silk Roads Past and Present.* Aspects of the Silk Roads from ancient times to the very recent past, including actual conditions and representations, accurate, and imagined. For centuries travelers have moved between China and points west along the various ancient routes that became known as the Silk Roads. The area they covered, corresponding to most of today's Central and Inner Asia, remains a contested area drawing global attention from various powers vying for control. *Prerequisite: None.*

HUMN- SHU 225 *Topics in Asia-Pacific History.* Course topics may include: ancient China; the Mongols; food and drugs in Chinese history; history of Vietnam; Asian diasporas past and present; Japan in World War II; Pacific Rim history; and others. *Prerequisite: None.*

HUMN- SHU 226 *The Global Economy in the 20th Century.* This course explores global economic history from the second industrial revolution and colonial economies of the late nineteenth century to the multipolar globalization of the late twentieth and early twenty-first centuries. It will trace the rise and relative decline of different national economies, especially the United States, and chart how technology, trade, investment, and politics created different economic connections. Topics will include different forms of production, changing cultures of consumption, shifting labor forces, economic crises, and the economic theories such as Keynesianism, neoliberalism, communism, and modernization, which have shaped economies across the long twentieth century. Jeffrey Frieden's *Global Capitalism: Its Fall and Rise in the Twentieth Century* will be the basic text for the course. Additional articles and book chapters will supplement this book. Excerpts from documentaries and feature films on such themes as microcredit, mass consumption and deindustrialization/reindustrialization will be shown. Students will write two six page papers and have a final exam. In addition, they will be asked to track one country and its changing place and fortunes/misfortunes in the global economy and submit brief reports on that throughout the term. Students will choose a smaller country rather than one of the major global players about whom we will read more extensively. Those reports will be 1-2 pages each and will be submitted every third week of the semester, for a total of 4 reports and a total of 6-8 pages of writing. The final exam will be a mixture of short identifications and two essay questions. A list of 5 essay questions will be given out in advance and on the day of the exam, Professor Nolan will choose the questions on which students will write. *Prerequisite: None.*

HUMN- SHU 240 *Gender, Sexuality, and Culture.* This course invites students to think about some of the most carefully controlled but also fervently sought-after questions since the time of Plato: what is the difference between gender and sex? What is the relationship between our gendered bodies, behaviors, and identities? How does sex, something we do, translate to the discourse of sexuality, something we talk

about? What is the measurement of normality? If art indeed imitates and even changes life, in what ways do images of gender performance in literary and visual culture also reproduce and perhaps reshape our own experiences as gendered and sexed beings in a society? What can gender and sexuality tell us about the construction of culture, its boundaries, and its “outlaws”? Through the reading of philosophical, literary, historical, medical, and visual texts, and through discussions of case studies in mass media, we learn to see gender and sexuality as an evolving historical phenomenon rather than essentialist notions. We ask how the development of human interest in sexuality coincides with the burgeoning of governing techniques in modern times to police and promote sex simultaneously—as desirable and useful on the one hand, but also forbidden and harmful on the other. Lastly, as humanists, we ask how the boundary of our body (that is, our inside and outside in the most literal sense) is marked less by our blood cells, skin pores, or molecules than by our use of language. *Prerequisite: None.*

HUMN- SHU 260 *Critical Theories and Methods of Literary Studies.* Major texts in critical theory from Plato to Derrida are considered in relation to literary practice. The first half of the course focuses on four major types of critical theory: mimetic, ethical, expressive, and formalist. The second half turns to 20th-century critical schools, such as Russian and American formalism, archetypal criticism, structuralism, psychoanalytic criticism, feminism, reader-response theory, deconstruction, and historicism. *Prerequisite: None.*

HUMN- SHU 261 *History and Theory of the Novel.* An introduction to the history of the novel in a comparative context, with special emphasis on contemporary critical theory (including circulation studies, deconstruction, new historicism, and psychoanalysis). Theoretical readings include works by Bakhtin, Barthes, Lukacs, McKeon, Moretti, and Watt, among others. *Prerequisite: None.*

HUMN- SHU 262 *History of Drama and Theater.* Examines selected plays central to the development of world drama, with critical emphasis on a cultural, historical, and theatrical analysis of these works. Texts are drawn from the major periods of Greek and Roman drama; Japanese classical theater; medieval drama; theater of the English, Italian, and Spanish Renaissance; French neoclassical drama; English Restoration and 18th-century comedy; and Russian dramatic traditions. Genres to be considered include romanticism, naturalism, realism, antirealism, and postcolonial theater. *Prerequisite: None.*

HUMN- SHU 263 *Literary Translation.* This course explores the craft of and the market for literary translation. Why do some translators aim for familiarity and others for estrangement? What is gained and lost in a text’s cultural relocation? Translation, and translation projects such as Abu Dhabi’s *Kalima*, play a pivotal role in shaping intercultural exchange and globalizing literary markets and canons. The course involves conversations with translators and authors in Abu Dhabi and abroad. Case studies include *The Epic of Gilgamesh*, the quatrains of Khayyam, sonnets of Shakespeare and Camões, and modern and contemporary works by Borges, Pessoa, Saramago, Kundera, Ondaatje, and Paz Soldan. *Prerequisite: None.*

HUMN- SHU 264 *Reading The Dream of the Red Chamber.* *The Dream of the Red Chamber* is an epic literary classic produced by Cao Xueqin in the middle of the 18th century. Following the traditional form of Chinese fiction, known as “the chaptered novel,” it covers a vast terrain of Chinese culture and social life and is widely regarded as the culmination of the vernacular novel of imperial China and a synthesis of Chinese aesthetic and philosophical traditions. With the tragic love story between two teenage members of an aristocratic clan in southern China at its dramatic center the novel intimately explores the questions concerning what is eternal and what is ephemeral; love and affection, or “qing,” as the heart of being that both animates and destroys life; the nature of individual talent and its fragility; the excesses and decadence of the privileged; as well as the growing, if hidden, social and class tensions. Its manifold structure, intricate plot development, coupled with its dazzling array of memorable characters, makes this novel the most complex and colorful of all times. Both reading and discussions are conducted in English. *Prerequisite: None.*

HUMN- SHU 265 *Country and City in Modern Chinese Literature and Film.* The story of modern China is, in a sense, the story of the transformation of a rural society into an urban, industrial one. This change has

altered people's experience and consciousness and, in turn, their cultural visions and artistic expressions. This course focuses on the tension and mutual dependency between country and city in modern China as viewed through the prism of Chinese fiction and film. The class discusses such works as Lu Xun's *Hometown* and *New Year's Sacrifice*, Mao Dun's *Spring Silkworm*, Shen Congwen's *Vegetable Garden*, Ailing Chang's *Sealed Off*, and Shi Zhecun's *One Evening in the Rainy Season*, and such films as *Crows and Sparrows* and *The World*. *Prerequisite: None.*

HUMN- SHU 266 *Shanghai Stories.* This course provides an introduction to the history and culture of Shanghai through the eyes of fiction writers. We will read short stories (in English translation) by Chinese, British, American, Japanese, French, Polish, and South African writers who lived in the city between 1910 and 2010. Their stories will take us on an imaginary city tour through time and space: from businessmen, politicians, and prostitutes gathering in the nightclubs of the old Bund, to Jewish refugees struggling to find a home in the poor shikumen neighborhoods of Hongkou, to teachers and students fighting political battles at the university campuses during the Cultural Revolution, and young urban youth pursuing cosmopolitan lifestyles in the global city of today. The course also includes trips to various places featured in the stories and guest lectures by some of Shanghai's most famous writers today. *Prerequisite: None.*

HUMN- SHU 267 *Representing Ethnicity in Mainland China and Beyond A Comparative Study.* This course introduces students to the various theories, practices, and representations of multiculturalism in mainland China, Taiwan, Hong Kong, and Singapore from the 20th century onwards. Setting focus on how ethnicity (minzu) and race (zhongzu) emerge as a historically grounded and changing public discourse, we engage in a comparative examination of multiculturalism as an incomplete ideal. Within and across each of these multiethnic, or multiracial, societies where Han Chinese constitute the majority, we ask how nation-building processes bear on the transformation of minority culture, and vice versa. Toward the end of the course, we also probe the growing impact of domestic and transnational labor migration on the so-called ethnic mosaic. Our goal is not only to understand diversity as a social reality; in asking how such a reality finds voice in various artistic forms including short story, novel, documentary and fiction film, we also train students to do the rigorous work of literary and cultural criticism. *Prerequisite: None.*

HUMN- SHU 268 *Empires & The Political Imagination.* Empires—polities which maintained and enhanced social and cultural distinction even as they incorporated different people—have been one of the most common and durable forms of political association. This course will focus on the comparative study of empires from ancient Rome and China to the present, and upon the variety of ways in which empires have inspired and constrained their subjects' ideas of rights, belonging, and power. The study of empire expands our ideas of citizenship and challenges the notion that the nation-state is natural and necessary. Students in this course will explore historians' approaches to studying empires. We will investigate how empires were held together—and where they were weak—from perspectives that focus on political, cultural, and economic connections over long distances and long time periods. Readings will include historical scholarship on the Roman, Chinese, Mongol, Ottoman, Habsburg, Russian, French, British, and American empires, as well as primary sources produced by people living in these and other imperial polities. *Prerequisite: None.*

HUMN- SHU 269 *Empires in World History.* Throughout history, few people lived for very long in a polity that consisted entirely or even mainly of people with whom they shared a language and culture. Any examination of the variety of human cultures must take account of the political structures within which people tried to make their way, sometimes seeking higher degrees of autonomy, sometimes accommodating to rulers' authority, sometimes trying to extend their own power over others. Empires—polities which maintained and enhanced social and cultural distinction even as they incorporated different people—have been one of the most common and durable forms of political association. This course will focus on the comparative study of empires from ancient Rome and China to the present, and upon the variety of ways in which empires have inspired and constrained their subjects' ideas of rights, belonging, and power. The study of empire expands our ideas of citizenship and challenges the notion that the nation-state is natural and necessary. Students in this course will explore historians' approaches to studying empires. We will investigate how empires were held together—and where they were weak— from perspectives that focus on political, cultural, and economic connections over long distances and long time periods. Readings will

include historical scholarship on the Roman, Chinese, Mongol, Ottoman, Habsburg, Russian, French, British, German, and American empires, as well as primary sources produced by people living in these and other imperial polities. *Prerequisite: None.*

HUMN- SHU 280 *Biomedical Ethics.* An examination of the pressing moral questions that arise in medical practice and research. Do we have a basic right to health care? Are euthanasia and physician-assisted suicide ever morally permissible? Do we have the right to decide the course of our medical treatment, or to determine the timing and manner of our own deaths? Do we have a right to privacy and confidentiality? Should we allow medical research that harms animals (or that makes use of human stem cells)? Are there compelling moral objections to genetic testing or genetic engineering? *Prerequisite: None.*

HUMN- SHU 281 *Freedom and Responsibility.* Do we have free will? Some philosophers have argued that if our actions are causally determined, then freedom of the will is impossible. Others have argued that freedom does not depend on the truth or falsity of causal determinism. Is free will possible in a world where every event is causally determined? Are there different kinds of freedom? If so, are all kinds of freedom equally worth having? Must we act freely in order to be responsible for our actions? Do the social institutions of reward and punishment depend for their justification upon the existence of responsible, free agents? We discuss the nature of persons, action, freedom, and responsibility in an effort to answer these questions. *Prerequisite: None.*

HUMN- SHU 282 *Philosophy of Religion.* An examination of several major questions that arise in philosophical discussions of religion, such as: Is it always irrational to form beliefs about matters which transcend the realm of the empirical, given that such beliefs cannot be directly supported by evidence? If so, then many religious beliefs are irrational. Is this the case, or can religious beliefs be supported by other means? Can philosophical reflection help us to prove the existence of God? Can it bring clarity to such puzzling matters as God's relationship to time, or the question of how a benevolent and omnipotent God could permit the existence of evil? Alternatively, is the entire project of evaluating religious discourse as a set of claims about transcendent realities misguided, perhaps because religious language work differently than the language we use to speak about ordinary objects? *Prerequisite: None.*

HUMN- SHU 283 *Classical Chinese Philosophy.* An examination of important ideas and texts in the Chinese philosophical tradition, including those developed in Confucianism, Daoism, Mohism, and Chinese Buddhism. *Prerequisite: None.*

HUMN- SHU 284 *Modern European Philosophy.* An examination of major philosophical ideas and texts in Europe in the 17th and 18th centuries, from the scientific revolution to the beginning of German Idealism, including works by Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, and Kant. *Prerequisite: None.*

HUMN- SHU 285 *Epistemology.* Considers questions such as the following: Can I have knowledge of anything outside my own mind—for example, physical objects or other minds? Or is the skeptic's attack on my commonplace claims to know unanswerable? What is knowledge, and how does it differ from belief? *Prerequisite: None.*

HUMN- SHU 286 *Metaphysics.* Discusses general questions concerning the nature of reality and truth. What kinds of things exist? Are there minds or material bodies? Is change illusory? Are human actions free or causally determined? What is a person and what, if anything, makes someone one and the same person? *Prerequisite: None.*

HUMN- SHU 287 *Philosophy of Science.* An examination of philosophical issues about the natural and social sciences. Central questions include: What is the nature of scientific explanation? How does science differ from pseudoscience? What is a scientific law? How do experiments work? *Prerequisite: None.*

INTERACTIVE MEDIA ARTS

INTM- SHU 101 *Interaction Lab*

In this foundation course students will be asked to think beyond the conventional forms of human computer interaction (i.e. the keyboard and mouse) to develop interfaces that consider the entire body, the body's capacity for gesture, as well as the relationship between the body and its environment. Students will learn the principles of electronics and programming as they build projects using the Arduino microcontroller platform, a small computer based on open source hardware and software. When used in conjunction with various sensors and actuators, Arduino is capable of gathering information about and acting upon the physical world. In addition to these physical computing techniques, students will also learn to harness the methods of traditional computation for the purposes of self-expression. The fundamentals of programming: variables, conditionals, iteration, functions and objects, will be explored first through the use of JavaScript, an approachable scripting language most commonly associated with the Web, and later by using the Java based Processing language. Students will gain a deeper appreciation of the expressive possibilities of computation as they learn to author their own software, and not simply use that which is provided to them. Additional topics will include digital fabrication using 3D printers and laser cutters, the exchange, manipulation, and presentation of data, algorithmic drawing and animation techniques, as well as the synthesis of images, audio, and video. Structured weekly exercises are aimed at building practical skills, however students are encouraged to experiment wildly, and are free to pursue their own diverse interests in their midterm and final projects. Required Course. (Formerly known as Introduction to Computational Media & Physical Computing) *Prerequisite: None.*

INTM- SHU 120 *Communications Lab.* In this foundation course, designed to provide students with a framework to effectively communicate through digital means, students will explore the possibilities of digital media by successively producing projects that make use of digital images, audio, video, animation, and the Web. Students learn in a laboratory context of hands-on experimentation, and principles of interpersonal communications, media theory, and human factors will be introduced in readings and investigated through discussion. Adobe Creative Cloud and other relevant software applications will be examined, and the basics of fundamental web languages HTML and CSS will be studied, to establish a diverse digital toolkit. Weekly assignments, group, and independent projects, as well as project reports will be assigned in each of the core areas of study. Required Course. *Prerequisite: None.*

INTM- SHU 211 *Animation and Dynamic Surfaces.* Contemporary animation is no longer constrained to the single flat screen; it can now be seen on surfaces of any shape and size. This course takes students from traditional animation techniques to contemporary outputs. In the first part of the course students will learn the process of character design as well as script and storyboard development to create two animated shorts. The course then examines outputs afforded by new technologies, such as interactivity, multiple screens and projection mapping. Software includes DragonFrame (for stop motion capture), Adobe After Effects and Premiere (for digital compositing, animating, and sequencing), as well MadMapper (for projection mapping), and Processing (for interactivity). Drawing skills are not necessary for this course, however students will keep a personal sketchbook. *Prerequisite: None.*

INTM- SHU 212 *Sound & Vision.* In this course students will explore various techniques, both practical and experimental, for sound and video synthesis as it relates to the production of multimedia applications as well as live audio visual performance. Comprehensive practical experience and substantial applied knowledge will be acquired through lectures, coursework, and critique. Students will begin by learning to work with the Max graphical programming environment, which is based on a patch bay metaphor, to produce their own programs (Max patches). Working with Max involves the visual arrangement and interconnection of blocks representing various inputs, outputs, and functions. Through the application of Max's MSP and Jitter extensions, students will take advantage of the real-time audio and video processing capabilities of the application. Additionally, sound sequencing software, Ableton Live, will be integrated with Max. The application of sound control protocols, such as MIDI (Musical Instrument Digital Interface) and OSC (Open Sound Control), will be introduced and investigated. Students will be encouraged to consider new possibilities for input and output afforded by the use of various sensors and actuators with

Arduino. Existing off-the-shelf motion controllers, for example the Wii Remote, Microsoft Kinect, and Leap Motion will also be adopted to capture and interpret movement and gesture for the purposes of controlling audio and video. For their final projects, students will create a unique musical instrument. The class culminates in a live performance where students will perform their instruments in front of an enthusiastic audience. Elective: Arts & Entertainment and Skill Development. *Prerequisite: INTM-SHU 101 or 120 or Permission of the instructor.*

INTM- SHU 220 Machine Life. This course explores the frontiers, intersections and increasingly intimate intermixing of humans and machines. It does so by examining developments in wearable and embedded computing, genetic engineering, robotics and Artificial Intelligence. These more empirical investigations will occur alongside theoretical discussions and science fiction speculations on cyborgs, virtual reality and the future of the human species. In addition to research and writing assignments this course will involve a practical recitation in which students create or design sketches of a machine that reflects the themes discussed in the course. *Prerequisite: INTM-SHU 101 or 120 or Permission of the instructor.*

INTM- SHU 231 Developing Web. The Web now permeates most aspects of modern existence, and as a result, web development has become an indispensable skill complementary to many diverse disciplines. Students in this course will gain fluency in essential web languages and development approaches through a series of creative yet practical exercises aimed at touching on many important aspects of today's multi-faceted World Wide Web – by building responsive websites, engaging games, and rich internet applications for the desktop, mobile devices, and Arduino microcontroller. Design principles will be explored through corresponding HTML and CSS structures, and will be based on a consideration for typography, images, audio and video. Dynamic data and interaction will be investigated through client-side scripting techniques using JavaScript, including the popular jQuery library. User generated content and the importance of content management will be reflected on through server-side scripting techniques utilizing the PHP based WordPress platform. Data storage and retrieval will be made possible through the application of MySQL databases and the HTML5 Local Storage specification. And universal data exchange formats, JSON and XML, will be part of an ongoing experimentation with third party APIs (Application Programming Interfaces) such as Flickr, Freebase, Google Maps, Twitter, Xively & YouTube. *Prerequisite: None.*

INTM- SHU 234 Rapid Prototyping. Beginning with a design problem or challenge, and following a period of analysis and research, a designer can begin to draft, prototype, test, and evaluate possible solutions, often repeating these operations several times until the design reaches maturity. Agile software development methodologies, which involve the formation of self-organized cooperative teams, frequent deadlines with deliverables, and a willingness to accept changing conditions and requirements, have radically changed the way software is being produced. Additionally, new applications, such as Fritzing, 123D Circuits, and Eagle have greatly facilitated the process of electronic circuit design. And Computer Aided Design (CAD) applications, for example Rhinoceros and Tinkercad, and newly available digital fabrication equipment have dramatically quickened the pace with which designers can create physical prototypes. Students in this course will be confronted with a series of design challenges for which they have to propose and prototype possible solutions. The first design challenge will entail the entire class working together to produce a software prototype by adopting agile strategies. The second design challenge will involve students in the process of refining a circuit, and will require bringing a prototype from schematic, to breadboard, perfboard, and finally resulting in a printed circuit board. For the third design challenge, students will explore the use of 3D printers, laser cutters, computer numerical control (CNC) machines, and other tools to produce a physical prototype. Students will then be free to work on a personal design challenge for their final project. Elective: Design and Skill Development. *Prerequisite: INTM-SHU 101 or Permission of the instructor.*

INTM- SHU 280 Global Media - China. This course looks at the transformation of China's media landscape over the past two decades through market reforms, commercialization and new technology – including the drastic growth of tabloid newspapers and magazines; the transformation of television into a multi-billion dollar industry, with ambitions to go global; and the equally significant rise of the Internet and, with it, the growing influence of online public opinion, along with the way in which this has led to

significant changes both in China's traditional media, and in the way the country is governed. The course will also look at continuing tensions between those seeking to push for greater openness in the media, and the censors and ideological critics who believe it has already gone too far.

INTM-281 Digital Chinese Humanities.

INTM-201-219 Studio Courses. These courses are to be taken in conjunction with one or more other, disciplinary courses. Students are expected to generate an idea or ideas inspired by the other course(s) and then build something with new interactive technology, supporting their investigations in the other field(s). Examples might be a device for monitoring traffic at a particular street corner, for a sociology class, or a data visualization for an economics class.

INTM-220-239 Interactive Art and Entertainment Courses.

INTM-240-259 Design Courses.

INTM-260-279 Skill Development Courses.

INTM-300-320 Seminars.

MATHEMATICS

MATH-SHU 009 Precalculus. This course is designed as a preparation for calculus, including study of basic properties of polynomials, rational functions, exponential and logarithmic functions, and trigonometric functions. Systems of linear equations and matrix operations are also covered. *Prerequisite: Placement via NYUSH mathematics placement exam. Equivalent to MATH-UA 009, MATH-AD 101.*

MATH-SHU 010 Quantitative Reasoning: Great Ideas in Mathematics. This one-semester course serves as an introduction to great ideas in mathematics. During the course we will examine a variety of topics chosen from the following broad categories. 1) A survey of pure mathematics: What do mathematicians do and what questions inspire them? 2) Great works: What are some of the historically big ideas in the field? Who were the mathematicians that came up with them? 3) Mathematics as a reflection of the world we live in: How does our understanding of the natural world affect mathematics (and vice versa). 4) Computations, proof, and mathematical reasoning: Quantitative skills are crucial for dealing with the sheer amount of information available in modern society. 5) Mathematics as a liberal art: Historically, some of the greatest mathematicians have also been poets, artists, and philosophers. How is mathematics a natural result of humanity's interest in the nature of truth, beauty, and understanding? Why is math a liberal art? *Prerequisite: None. For students in Humanities. Equivalent to MAP-UA 110.*

MATH-SHU 110 Calculus (See MATH-SHU 121)

MATH-SHU 112 Multivariable Calculus and Differential Equations (See MATH-SHU 124)

MATH-SHU 120 (formerly 237) Discrete Mathematics. This course is an introduction to discrete mathematics, emphasizing proof and abstraction, as well as applications to the computational sciences. Topics include sets, relations, and functions, graphs and trees, algorithms, proof techniques, and order of magnitude analysis, Boolean algebra and combinatorial circuits, formal logic and languages, automata, and combinatorics, probability, and statistics. *Prerequisite: Grade of C or better in MATH-SHU 121 or MATH-SHU 201. Equivalent to MATH-UA 120.*

MATH-SHU 121 (formerly 110) Calculus. This course presents the foundations of calculus by examining functions and their derivatives and integrals. Topics addressed include basic techniques of differentiation and integration for functions of one variable, including approximation and optimization, forming an essential treatment of calculus. *Prerequisite: Placement via NYUSH mathematics placement exam or a grade of C or better in MATH-SHU 009. Equivalent to MATH-UA 121, MATH-AD 110.*

MATH-SHU 123 (formerly 151) Multivariable Calculus. This course explores calculus of functions of several variables. Topics covered include power series, differentiation and integration of functions of several variables, including directional derivatives, the gradient, line and multiple integrals, and the theorems of Green, divergence, and Stokes. *Prerequisite: Grade of C or better in MATH-SHU 110. Equivalent to MATH-UA 123, MATH-AD 112.*

MATH-SHU 124 (formerly 112) Multivariable Calculus and Differential Equations. This course explores advanced topics in calculus. Topics covered include sequences and series, power series, matrix algebra in dimensions two and three, first and second-order differential equations, series solutions of differential equations, and differentiation and integration of functions of several variables, including directional derivatives, the gradient, and double, triple, and line integrals. *Prerequisite: Grade of C or better in MATH-SHU 110.*

MATH-SHU 140 Linear Algebra. This first course in linear algebra covers systems of linear equations, vectors, linear transformations, matrices and their determinants, vector spaces, basis and dimension, eigenvectors and eigenvalues, quadratic forms, and matrix decompositions. In addition to its role as an essential topic within mathematics, linear algebra is also critically useful throughout the sciences: for example, in estimation theory, chemical equations, electrical networks, and heat distributions. *Prerequisite: Grade of C or better in MATH-U 110. Equivalent to MATH-UA 140, MATH-AD 116.*

MATH-SHU 141 (formerly 206) *Advanced Linear Algebra I*. This is the first semester of a 2-semester course in linear algebra for advanced mathematics majors. Topics covered include systems of linear equations, matrices, LU decomposition, determinants, vector spaces, linear independence, basis and dimension, subspaces and quotient spaces, linear transformations, eigenvalues and eigenvectors, Jordan canonical forms, inner products, orthogonality, quadratic forms, extrema of functions, and symmetric and positive matrices. *Prerequisite: Placement on NYU SH mathematics placement exam. Equivalent to MATH-UA 141.*

MATH-SHU 142 *Advanced Linear Algebra II*.
Prerequisite: MATH-SHU 141. Equivalent to MATH-UA 142.

MATH-SHU 150 *Probability and Statistics* (See MATH-SHU 235)

MATH-SHU 151 *Multivariable Calculus* (See MATH-SHU 123)

MATH-SHU 160 *Networks and Dynamics*. This is a post-calculus mathematics course that is designed to prepare students to enter a broad set of majors, from natural sciences through social sciences. The preliminary goal is to address the following challenge: today's science and world at large requires us to understand how the dynamical interactions between individual units in a complex network give rise to collective behavior, be it genetic network that makes us who we are, neural network underlying our brain functions, social network of friends through Facebook or WeChat. The language for providing a scientific understanding of such systems is the mathematics of network theory, linear algebra, and differential equations. These topics are integrated to provide a unifying course that introduces analysis methods and mathematical models for understanding dynamical network behavior. Computer simulations will be a major component of this hands-on course. *Prerequisite: Grade of C or better in MATH-SHU 121. Not open to students who have taken MATH-SHU 264.*

MATH-SHU 201. *Calculus Emphasizing Proofs*. This is an honors course in calculus for mathematics majors, covering material essential to preparation for advanced courses in analysis and with an emphasis on proof. Topics covered include limits and continuity, derivatives of higher order, extrema, the mean-value theorem, L'Hôpital's rule, Taylor expansions, the implicit and inverse function theorems, definite integrals, the fundamental theorem of calculus, functions of several variables, partial derivatives, constrained extrema, multiple integrals, line and surface integrals, and the theorems of Gauss, Green, and Stokes. *Prerequisite: Placement via NYUSH mathematics placement exam.*

MATH-SHU 202 *Analysis I* (See MATH-SHU 328)

MATH-SHU 203 *Analysis II* (See MATH-SHU 329)

MATH-SHU 204 *Analysis I* (See MATH-SHU 328)

MATH-SHU 228 *Earth's Atmosphere and Ocean: Fluid Dynamics & Climate*. This course is an introduction to the dynamical processes that drive the circulation of the atmosphere and ocean, and their interaction. Lectures will be guided by consideration of observations and experiments, with the goal of developing an understanding of the unifying principles of planetary fluid dynamics. Topics include the global energy balance, convection and radiation (the greenhouse effect), effects of planetary rotation (the Coriolis force), structure of atmospheric circulation (the Hadley cell and wind patterns), structure of the oceanic circulation (wind-driven currents and the thermohaline circulation), and climate variability, including El Niño and anthropogenic warming. *Prerequisite: Grade of C or better in MATH-SHU 121 or MATH-SHU 201. Equivalent to MATH-UA 228.*

MATH-SHU 230 *Introduction to Fluid Dynamics*. Fluid dynamics is the branch of physics that describes motions of fluids as varied as the flow of blood in the human body, the flight of an insect or the

motions of weather systems on Earth. The course introduces the key concepts of fluid dynamics: the formalism of continuum mechanics, the conservation of mass, energy and momentum in a fluid, the Euler and Navier-Stokes equations, viscosity and vorticity. These concepts are applied to study classic problems in fluid dynamics, such as potential flow around a cylinder, the Stokes flow, the propagation of sound and gravity waves and the onset of instability in shear flow. *Prerequisite: Grade of C or better in MATH-SHU 112 or MATH-SHU 329. Equivalent to MATH-UA 230.*

MATH-SHU 233 *Theory of Probability*. This course is an introduction for mathematics majors to the mathematical treatment of random phenomena occurring in the natural, physical, and social sciences. Topics covered include axioms of mathematical probability, combinatorial analysis, the binomial distribution, Poisson and normal approximation, random variables, probability distributions, generating functions, and Markov chains and their applications. *Prerequisite: Grade of C or better in MATH-SHU 123 or MATH-SHU 329. Not open to students who have taken MATH-SHU 235. Equivalent to MATH-UA 233.*

MATH-SHU 234 *Mathematical Statistics*. A continuation of Theory of Probability, this course is an introduction to the mathematical foundations and techniques of modern statistical analysis for the interpretation of data in the quantitative sciences. Topics covered include the mathematical theory of sampling, normal populations and distributions, Chi-squared, t, and F distributions, hypothesis testing, sequential analysis, correlation, regression, analysis of variance, and applications to the sciences. *Prerequisite: Grade of C or better in MATH-SHU 233. Equivalent to MATH-UA 234.*

MATH-SHU 235 (formerly 150) *Probability and Statistics*. This course comprises a combination of the theory of probability and the mathematical foundations with techniques of modern statistical analysis. It is designed to acquaint the student with both probability and statistics in the context of their applications to the sciences. In probability: mathematical treatment of chance; combinatorics; binomial, Poisson, and Gaussian distributions; law of large numbers and the normal distribution; application to coin-tossing, radioactive decay, and so on. In statistics: sampling; normal and other useful distributions; testing of hypotheses; confidence intervals; correlation and regression; and applications to scientific, industrial, and financial data. *Prerequisite: Grade of C or better in MATH-SHU 121. Not open to students who have taken MATH-SHU 233. Equivalent to MATH-UA 235, MATH-AD 150.*

MATH-SHU 240 *Combinatorics*. This course introduces basic concepts in combinatorics and techniques for counting and enumeration. Topics covered include generating functions, the principle of inclusion and exclusion, Polya counting, graph theory, and modern algorithms and data structures for graph-theoretic problems. *Prerequisite: Grade of C or better in MATH-SHU 121 or MATH-SHU 201. Equivalent to MATH-UA 240.*

MATH-SHU 252 *Numerical Analysis*. In numerical analysis, one explores how mathematical problems can be analyzed and solved with a computer. This has very broad applications in mathematics, physics, engineering, finance, and the life sciences. This course gives an introduction to numerical analysis for mathematics majors. Theory and practical examples using Matlab will be combined to study a range of topics, from simple root-finding procedures to differential equations and the finite element method. *Prerequisite: Grade of C or better in MATH-SHU 123 and MATH-SHU 140 or MATH-SHU 141 and MATH-SHU 329. Equivalent to MATH-UA 252, MATH-AD 214.*

MATH-SHU 262 *Ordinary Differential Equations*. This course introduces the main ideas of ordinary differential equations. Topics include vector fields, existence and uniqueness of solutions to first-order linear differential equations, stability, higher order differential equations, the Laplace transform and numerical methods, linear and nonlinear systems, and Sturm-Liouville theory. *Prerequisite: Grade of C or better in MATH-SHU 121 and MATH-SHU 140 or MATH-SHU 141 and MATH-SHU 201. Equivalent to MATH-UA 262, MATH-AD 121.*

MATH-SHU 263 *Partial Differential Equations*. Many laws of physics are formulated as partial differential equations. This course discusses the simplest examples, such as waves, diffusion, gravity, and static electricity. Nonlinear conservation laws and the theory of shock waves are discussed, as well as further applications to physics, chemistry, biology, and population dynamics. *Prerequisite: Grade of C or better in MATH-SHU 262. Equivalent to MATH-UA 263, MATH-AD 216.*

MATH-SHU 264 *Dynamical Systems*. Topics will include dynamics of maps and of first order and second-order differential equations: stability, bifurcations, limit cycles, dissection of systems with fast and slow time scales. Geometric viewpoint, including phase planes, will be stressed. Chaotic behavior will be introduced in the context of one-variable maps (the logistic), fractal sets, etc. Applications will be drawn from physics and biology. There will be homework and projects, and a few computer lab sessions (programming experience is not a prerequisite). *Prerequisite: Grade of C or better in MATH-SHU 121 and MATH-SHU 140 or MATH-SHU 141 and MATH-SHU 201. Not open to students who have taken MATH-SHU 160.*

Equivalent to MATH-UA 264, MATH-AD 211.

MATH-SHU 282 *Functions of a Complex Variable*. Complex variables and functions play an essential role in many branches of mathematics and science. In this course, we cover basic aspects of the theory, including differentiation of complex functions, the Cauchy-Riemann equations, Cauchy's theorem and integral formula, singularities, Laurent series, conformal mapping, analytic continuous, and applications to fluid flow. *Prerequisite: Grade of C or better in MATH-SHU 123 and MATH-SHU 140 or MATH-SHU 141 and MATH-SHU 329. Equivalent to MATH-UA 282, MATH-AD 212.*

MATH-SHU 328 (formerly 202) *Analysis I*. This course is a continuation of Calculus Emphasizing Proofs. Topics covered include integration techniques, trigonometric functions, the logarithm, exponential functions, approximation by polynomials, sequences, series, convergence, uniform convergence, power series, Taylor series, complex numbers and functions, Euclidean spaces, and basic topology. *Prerequisite: MATH-SHU 201. Equivalent to MATH-UA 328.*

MATH-SHU 329 (formerly 203) *Analysis II*. This course is a continuation of Analysis I, with emphasis on functions of several variables. Topics covered include the topology of Euclidean space, the Stone-Weierstrass theorem, the implicit and inverse function theorems in several variables, Jordan regions, linear transformations, differentiation of integrals, and integration of differential forms. *Prerequisite: MATH-SHU 328. Equivalent to MATH-UA 329.*

MATH-SHU 349 (formerly 204) *Abstract Algebra I*. This introduction to abstract algebra is a rigorous study the notions of group, ring, and field. Topics covered include symmetric and linear groups, the Sylow theorems, polynomial and quotient rings, ideals, unique factorization, the Nullstellensatz, field extensions and finite fields. *Prerequisites: Grade of B or better in MATH-SHU 140 and MATH-SHU 123 or MATH-SHU 141 and MATH-SHU 329. Equivalent to MATH-UA 349, MATH-GA 2130.*

MATH-SHU 375 *Topology*. This course presents the basic ideas of point-set topology, as well as their interactions with analysis and algebra. Topics covered include topological spaces, metric spaces, compactness, Tychonoff's theorem, separation axioms, Urysohn's lemma, covering spaces, fundamental groups, and homotopy groups. *Prerequisite: MATH-SHU 328. Equivalent to MATH-UA 375, MATH-AD 331.*

MATH-SHU 377 *Differential Geometry*. This course investigates the differential properties of curves and surfaces. Topics covered include differential manifolds and Riemannian geometry. *Prerequisite: MATH-SHU 329. Equivalent to MATH-UA 377.*

MATH-SHU-G 2043 *Scientific Computing*. This course is intended to provide a practical introduction to computational problem solving. Topics covered include the notions of well-conditioned and poorly

conditioned problems, forward and backward stability of an algorithm, basic techniques for numerical solutions of linear and nonlinear equations, numerical optimization, principles of numerical interpolation, differentiation and integration, splines and quadrature schemes, numerical methods for solving ordinary differential equations, matrix factorizations and computational techniques, and basic principles of the discrete (fast) Fourier transform, with applications to signal processing, data compression and solutions of differential equations. *Prerequisite: Grade of B or better in MATH-SHU 123 and MATH-SHU 140 or MATH-SHU 141 and MATH-SHU 329. Equivalent to MATH-GA 2043.*

MATH-SHU-G 2140 *Abstract Algebra II.* A continuation of Algebra II, this course emphasizes ideas in representation theory. Topics covered include representations and characters of finite, compact, and Lie groups, induced representations, the theorems of Artin, Brauer, and Peter-Weyl, Lie algebras, algebraic geometry, and applications of representation theory to algebra and physics. *Prerequisite: Grade of B or better in MATH-SHU 349. Equivalent to MATH-GA 2140.*

MATH-SHU-G 2210 *Number Theory.* This course builds on the ideas of abstract algebra, but also employing analytic techniques. Topics include valuations, Dedekind domains, Minkowski's theorem, ramification, the Riemann-Roch theorem and Riemann-Hurwitz formula, connections to Riemann surfaces and algebraic curves, reciprocity, zeta functions, and the prime number theorem. *Prerequisite: Grade of B or better in MATH-SHU 349. Equivalent to MATH-GA 2210.*

MATH-SHU-G 2430 *Real Variables.* This course is a continuation of the analysis sequence with a focus on measure and function spaces. Topics covered include Lebesgue measure and integration, abstract measure spaces, Lebesgue differentiation, the Radon-Nikodym theorem, Fubini's theorem, L_p and Hilbert spaces, the Riesz representation theorem, and Fourier series. *Prerequisite: MATH-SHU 329. Equivalent to MATH-GA 2430.*

MATH-SHU-G 2550 *Functional Analysis.* This course on applications of concepts in functional analysis gives special emphasis to function spaces used in practice, including Hilbert, Hardy, and Sobolev spaces. Other topics covered include the spectral theorem and its application to differential equations, Fourier series, compact operators, Fredholm determinants, measure, volume, and nonlinear analysis for infinite-dimensional spaces, and Brownian motion. *Prerequisite: MATH-SHU 141 and MATH-SHU-G 2430. Equivalent to MATH-GA 2550.*

NEURAL SCIENCE

NEUR- SHU 201 *Introduction to Neural Science.* An introductory lecture course covering the fundamental principles of neuroscience. Topics will include: principles of brain organization; structure and ultrastructure of neurons; neurophysiology and biophysics of excitable cells; synaptic transmission; neurotransmitter systems and neurochemistry; neuropharmacology; neuroendocrine relations; molecular biology of neurons; development and plasticity of the brain; aging and diseases of the nervous system; organization of sensory and motor systems; structure and function of cerebral cortex; modeling of neural systems. *Prerequisite: CCSC-110.*

NEUR- SHU 251 *Behavioral and Integrative Neuroscience.* This lecture and laboratory course addresses the physiological and anatomical bases of behavior. Lectures and laboratory experiments will emphasize mammalian sensory, motor, regulatory, and motivational mechanisms involved in the control of behavior, and higher mental processes such as those involved in language and memory. *Prerequisite: NEUR-201.*

NEUR- SHU 260 *Development and Dysfunction of the Nervous System.* This course will explore how the nervous system develops in normal animals, and how genetic and epigenetic factors can disrupt these processes. Lectures on normal developmental mechanisms will be interleaved with those on disorders to provide a solid foundation for our discussions of abnormal events during maturation. The lectures on normal development cover a broad range of topics including differentiation, axon outgrowth, synapse formation, specificity of connections, and plasticity. The lectures on dysfunction include autism, dyslexia, mental retardation, specific language impairment, hearing loss, blindness, ADHD, demyelinating or neurodegenerative disorders, and axon regeneration. The major goals of the course will be understand the extent to which current theories can explain the etiology of each disorder, and to learn how basic research can best facilitate advances in our knowledge and, ultimately, lead to treatments or cures. *Prerequisites: CCSC-114 & NEUR-251.*

NEUR- SHU 280 *Special Topics in Neural Science.* A seminar course providing in-depth treatment of an area of current interest neuroscience. Lectures will present background material and address current problems in the area related to the topic. Students will read and discuss review articles and current literature on the topic. Course content will be determined on a semester-by-semester basis. Possible topics include “Decision Making”; “Neurobiology of Learning and Memory”; “Signal Processing in Neural Networks”; “Intro to Computer Modeling of Neuronal Systems”; “Cognitive Neuroscience”; “Can Exercise Change Your Brain?”; “Molecular Mechanisms of Memory”; “Color Vision”; and “Neuroeconomics and Decision-Making.” *Prerequisite: BIOL-201.*

NEUR- SHU 301 *Cellular and Molecular Neuroscience.* A lecture course that provides students with broad exposure to current questions and experimental approaches in cellular neuroscience. Lectures are organized into three areas: cell structure and organization of the vertebrate central nervous system, mechanisms underlying neural signaling and plasticity, and control of cell form and its developmental determinants. *Prerequisites: CCSC-114 & NEUR-251.*

PHYSICS

PHYS- SHU 210 *Computational Physics*. Introduction to computational physics, with an emphasis on fields of current research interest where numerical techniques provide unique physical insight. Topics are chosen from various branches of physics, including numerical solution of ordinary and partial differential equations, eigenvalue problems, Monte Carlo methods in statistical mechanics, field theory, dynamical systems, and chaos. *Prerequisites: CCSC-114 & MATH-124.*

PHYS- SHU 250 *Mechanics*. Intermediate-level course on the principles and applications of dynamics. Topics include rotational kinematics and dynamics, conservation laws, central force motion, Lagrange's and Hamilton's equations, normal modes and small oscillations, accelerated reference frames, Fourier analysis, and chaos theory. *Prerequisites: CCSC-114 & MATH-124.*

PHYS- SHU 251 *Electricity and Magnetism*. Introduction to Maxwell's equations with applications to physical problems. Topics include electrostatics, magnetostatics, the solution of the Laplace and Poisson equations, dielectrics and magnetic materials, electromagnetic waves and radiation, Fresnel equations, transmission lines, and wave guides. *Prerequisites: CCSC-114 & MATH-124.*

PHYS- SHU 252 *Solid State Physics*. Solid state physics cover the principles of crystallography; crystal structure; lattice vibrations; band theory—metals and insulators; semiconductors; magnetism; and superconductivity. Topics of current interest such as high temperature superconductivity, quantum Hall Effect, and fullerenes may be included, depending on interest. *Prerequisite: PHYS-250.*

PHYS- SHU 255 *Biophysics*. Introduction to the physical mechanisms underlying biological processes. Elements of equilibrium and nonequilibrium statistical mechanics are used to explain how the molecular-scale components of biological cells store and process information, how they organize themselves into functional structures, and how these structures cooperatively endow organisms with the ability to eat, move, respond to the environment, communicate and reproduce. *Prerequisite: PHYS-250.*

PHYS- SHU 301 *Quantum Mechanics*. Designed to provide a rigorous mathematical introduction to quantum mechanics, this course covers the Schrödinger and Heisenberg description of quantum systems, application to basic atomic structure and simple boundary condition problems, quantum statistics, and perturbation theory. *Prerequisites: CCSC-114 & MATH-160.*

PHYS- SHU 302 *Statistical Mechanics and Thermodynamics*. Topics include relation of entropy to probability and energy to temperature, the laws of thermodynamics, Maxwell-Boltzmann, Bose-Einstein, and Fermi-Dirac statistics, equations of state for simple gases and chemical and magnetic systems, and elementary theory of phase transitions. *Prerequisite: PHYS-250.*

PHYS- SHU 303 *Advanced Physics Laboratory*. A further development of the experimental techniques introduced in Foundations of Science as applied to modern physics. Following a number of introductory experiments, students have at their option a variety of open-ended experiments they can pursue, including the use of microcomputers for data analysis. Experimental areas include Mossbauer effect, cosmic rays, magnetic resonance, superfluidity and superconductivity, and relativistic mass. *Prerequisite: CCSC-114.*

PHYS- SHU 314 *Astrophysics*. Introduction to modern astrophysical problems with an emphasis on the physical concepts involved: radio, optical, and X-ray astronomy; stellar structure and evolution; white dwarfs, pulsars, and black holes; and galaxies, quasars, and cosmology. *Prerequisite: PHYS-250.*

PHYS- SHU 315 *Nuclear and Particle Physics*. The phenomenology and experimental foundations of nuclear and particle physics are explored in this course, with emphasis on the fundamental forces underlying particle interactions. *Prerequisite: PHYS-250.*

SOCIAL SCIENCE

SOCS- SHU 150 *Introduction to Comparative Politics.*

SOCS- SHU 160 *Introduction to International Politics.* What are the causes of war? Why are some countries able to cooperate over issues like trade or the environment, while others are not? What is the role of international organizations and alliances, such as the UN, NATO, and the EU in the international state system? This course will give students an introduction to thinking analytically and systematically about outcomes in the international system, will teach them the prevailing major theories about these issues, and will equip students to begin to formulate their own answers to these questions. Students will learn a set of formal tools to analyze complex world events, which will prepare them for upper level international relations and other social science courses, as well as to become comfortable applying social science methodologies and theories to better understanding the world around us. The class will use some basic math, including introductory game theory, and some background in inferring statistical results will be helpful, but is not required. Over the course of the semester students will be challenged to apply the models and theories from class to real world situations. *Prerequisite: None.*

SOCS- SHU 225 *Media and Participation.* Making words and images public used to be difficult, complex, and expensive. Now it's not. That change, simple but fundamental, is transforming the media landscape. A publisher used to be required if you wanted to put material out into the public sphere; now anyone with a keyboard or a camera can circulate their material globally. New, cheap forms of communication have opened the floodgates to a massive increase in the number and variety of participants creating and circulating media. This change, enormous and permanent, is driving several effects in the media landscape today. This course covers the transition from a world populated by professional media makers and a silent public to one where anyone who has a phone or a computer can be both producer and consumer. This change, brought about by the technological and economic characteristics of digital data and networks, is upending old industries -- newspapers, music publishing, moviemaking -- faster than new systems can be put in place. The result is chaos and experimentation as new ways of participating in the previously sparse media landscape are appearing everywhere. This course will provide a brief history and economics of the previous media landscape, the design of digital networks that upend those historical systems, and new modes of participation for sharing words, images, audio and video. We will look at the dynamics of both English-language services, such as Twitter, Facebook and Instagram, and, in translation, Chinese-language services such as Sina Weibo, Weixin and QQ. The class will consist of class discussion around readings and lectures, in-class presentations and analysis of new uses of media that you observe (or participate in) outside class. There will be two written analyses of the media landscape, one at mid-term and one final paper. *Prerequisite: None.*

SOCS- SHU 251 *Topics in Law & Society.* We live in a world where there is an emerging global focus on governance—the ways in which government, market and civil society can be used to address public problems—both domestic and global. *Prerequisite: None.*

SOCS- SHU 450 *Chinese Environmental Government.* As the 21st century began, pundits debated whether, like the 20th, it would also be “America’s century,” whether China’s remarkable economic rise would make it “China’s century,” or, perhaps, one seeing the development of “Chimerica.” At the same time, it was also said that environmental limits to development will be the primary shaper of countries and their fortunes—with China (and India), with huge population and rapid development, and the U.S., with high per capita consumption, as keys to the future of the planet. This course will study China’s environmental challenges and governance in the context of America’s own environmental challenges and governance system, and in the context of the challenges to the two countries as the primary sources of the world’s greenhouse gas emissions. We will consider how developments may shape business, government, and culture, and the ways in which China and America may learn from one another. *Prerequisite: None.*

WRIT-159 *Creative Writing.*

Prerequisite: None.

STUDY AWAY SITE COURSES

ARTCR-UE 9077 *Contemporary Art, Architecture and New Media in China.* Over the past three decades, the contemporary art scene in China has expanded fast. The massive political, economic, and social changes the country has undergone since the end of the Cultural Revolution in 1976 have dramatically altered its cultural landscape. In this seminar course, the course will survey the main development areas in Chinese contemporary art. Dedicated to responding to the new textures of China's metropolitan culture, it will look at the relationship between visual arts, new media, architecture and performance in the mega-city of Shanghai, often regarded as the cradle of Chinese modernity. The class will be complemented by guest lectures and visits to public museums, galleries and artists' studios in and around Shanghai. Students will have the opportunity to meet leading figures from the art world in China as well as the international art community, including artists, museum directors, curators, art critics, and art dealers.

ART-UE 9380 *Projects in Photography.* Students will work with traditional and digital photographic practices to engage with the people, art, and traditions of China. The class will include field trips to museums, galleries and studios, allowing students to interact with outstanding local photographers, media-based artists, and the city's creative community. Assigned readings will help students understand the historical and theoretical context of photographic work, and deepen the meaning of critiques and discussions. Experimentation will be encouraged, and students will respond to the experiences, ideas, and influences they encounter abroad through the work they create. Projects may range from classical photographs to digital prints and installation.

BPEP-UB 9042 *The Political Economy of East Asia.* This course introduces students the main characteristics of economies in East Asia with historical perspective and political assessment. Its main purpose is to explore the political, cultural and historical aspects behind the rapid economic growth in the past decades in the region. It also discusses the differences of market institutions and mechanisms in main countries in East Asia and the trend of economic cooperation and integration. This course will also examine the challenges that the East Asian Economies, especially the Chinese economy, are facing and tries to help students to have a better understanding of East Asia.

EAST-UA 9053/HIST-UA 9053 *History of Modern China Since 1840.* In this course we will select a number of critical issues in modern Chinese history to examine the political, social and cultural transformations of modern China. Topics of lectures include Confucianism and its modern fate, popular movements, the Great Leap Forward Movement, the role of Shanghai in modern China, Tiananmen Movement and the prospect of Chinese political reforms. The course will be approached through lectures, site visits, class discussions, and research.

EAST-UA 9540 *Chinese Film and Society.* This course will examine Chinese cinema from its infancy to contemporary film within a social, political and cultural context, focusing specifically on films produced in mainland China. While acknowledging the importance of examining Chinese cinema in the general framework of national tradition and identity, this course also emphasizes the transnational or pan-Asian nature of Chinese film productions at present. In this way, it is hoped that the course will not only help students cultivate a greater command over current trends and debates in analysis and theorization of Chinese cinema, but also help facilitate students' understanding of Chinese cinema/culture in the context of globalization.

No prior knowledge of Chinese cinema and culture is required. All films carry English subtitles. All works are read in English.

ENVST-UA 9450 *Topics in Environment Values and Society: Chinese Environmental Governance.* As the 21st century began, pundits debated whether, like the 20th, it would also be “America’s century,” whether China’s remarkable economic rise would make it “China’s century,” or, perhaps, one seeing the development of “Chimerica.” At the same time, it was also said that environmental limits to development will be the primary shaper of countries and their fortunes—with China (and India), with huge population and rapid development, and the U.S., with high per capita consumption, as keys to the future of the planet.

This course will study China’s environmental challenges and governance in the context of America’s own environmental challenges and governance system, and in the context of the challenges to the two countries as the primary sources of the world’s greenhouse gas emissions. We will consider how developments may shape business, government, and culture, and the ways in which China and America may learn from one another.

EXLI-UF 9301 *Experiential Learning I: Contemporary Chinese Culture and Society.* This course aims to complement and enhance the internship experience. Students will learn to critically examine their fieldwork in order to reflect upon what their particular, concrete experience reveals about life in contemporary Shanghai. Throughout the course each student will develop an independent research paper that provides a theoretical framework and argument within which to analyze their internships. Through assignments and one-on-one meetings, students will learn to choose a research topic, create a bibliography, and prepare a research paper. The course will combine lectures with site visits, film viewing, guest speakers and individual meetings with the instructor. Class work will be based on current issues on the topic of Chinese society, politics, law, business, and culture. Students are encouraged to keep abreast of news regarding China from various sources of media.

JOUR-UA 9202 *Methods and Practice: Journalism.* This class is taught by Duncan Hewitt, who has many years of experience as a journalist in China. It provides an introduction to the work of the reporter, with particular focus on covering China, and offers students a chance to learn and practice basic journalism skills, including news writing, descriptive & feature writing, and writing for TV etc. Feedback on assignments is given in individual meetings. Visiting speakers and field trips also offer insights into the role of the journalist and the challenges faced.

LWSOC-UA 9251 *Topics in Law & Society: Law, Culture, & Politics in China.* This course will study China’s governance in the context of America’s own governance system. We will consider how to compare American and Chinese governance systems, and whether and how concepts can be translated between them—so that the countries, and their citizens can learn from, and cooperate with, one another. In the process, we hope to learn about China, but also to reflect—in the light of 9/11 and Iraq-- more deeply on our own understanding of how American governance works—and how it is seen by the world.

MCC-UE 9451 *Global Media Seminar – Media in China.* This course looks at the transformation of China’s media landscape over the past two decades through market reforms, commercialization and new technology. It covers topics including the drastic growth of tabloid newspapers and magazines; the transformation of television into an advertising-driven, multi-billion dollar industry with global ambitions; and the dramatic rise of the Internet and the growing influence of online public opinion, which has led to changes both in China’s traditional media, and (sometimes) in the way the country is governed. The course will also look at tensions between those seeking to push for greater openness in the media, and censors and ideological critics who believe it has already gone too far.

MCC-UE 9993 *Introduction to Digital Media: Cyberculture in China.* This course introduces the philosophy of cybernetic machines with reference to the technological trends affecting contemporary China. Topics will include: Chinese cyberspace and the Great Fire Wall; the revolutionary potential of microblogs; hacking; gaming; the ICT economy, maker innovations and machine intelligence.

MGMT-UB 9001 *Management and Organizations*. This course investigates the nature, functions, and responsibilities of the management of organizations. The course develops an analytical approach to the identification, structuring, analysis, and solution of organizational problems, and introduces students to organizational policies and structures, functional areas, and production processes (including resource allocation, measurement and evaluation, and control), leadership style, and organizational adaptation and evolution. Teaching methodologies include lectures, case analysis and class discussion.

MKTG-UB 9006 *Introduction to Marketing*. This course explores the field of marketing by introducing and developing central concepts and philosophies of marketing, and exploring the relationship of marketing with other business disciplines. Keeping in mind the perspectives of both producer and consumer, the course examines the planning required for the efficient use of marketing tools in the development and expansion of markets. The course concentrates on the principles, functions, and tools of marketing, including quantitative methods. Ethical issues in marketing are also addressed. In addition to lecture, the course uses case studies and student projects as methods for student learning.

POL-UA 9770 *International Politics and U.S.-China Relations*. This course aims to introduce students to the basic dynamics of strategic thinking and policy-making of both China and the U.S., to give an overview of the history of U.S.-China relations, and to discuss a number of key contemporary issues in the relationship in some detail.

RELST-UA 9270 *Religion and Society in China: Gods, Ghosts, Buddhas and Ancestors*. This course is a survey of the major historical and contemporary currents of China's religious thought and practice, including Buddhism, Confucianism, Daoism and "popular religion". It will focus on the interactions between such teachings and practices, as well as on the role of religion in Chinese society. You will study topics such as divination, visual culture, ritual, ancestor worship, morality, longevity techniques, healing practices and meditation. A selected number of primary and secondary sources will be discussed in each lecture; documentary films and visits to religious sites will be also key constituents of the course

SCA-UA 9042 *Internship Seminar and Field Work*. This course aims to complement and enhance the internship experience. Students will learn to critically examine their fieldwork in order to reflect upon what their particular, concrete experience reveals about contemporary life in Shanghai. Throughout the course each student will develop an independent research project that provides a theoretical framework and argument within which to analyze their internships. Through assignments and one-on-one meetings students will learn to choose a research topic, create a bibliography, write a basic research proposal, and produce a final research paper. Classroom meetings consist of reading based discussions, which focus on some of the crucial issues impacting the workplace in today's urban China (e.g., internet restrictions, guanxi, migrant labor and white collar workers.). These are complimented by a series of guest speakers who will present on issues such as the Chinese internet in China, the music industry in China, and marketing and entrepreneurialism.

SCA-UA 9634 *Global Connections: Shanghai*. This course examines Shanghai's attempts to position itself at the forefront of the largest and fastest process of urbanization the world has ever seen. It explores the city's attempts to build itself into the future metropolis of 21st century. It does so by facilitating a deep engagement with the city that combines reading based discussions on issues of urbanism, capitalism and creativity with in depth field trip explorations.

The course has 3 separate but interrelated components:

1. Field-trips designed to provide a direct engagement with the issues of the course.
2. Reading-based lecture and seminar discussions
3. An individual research project.

SOIM-UB 9006 *Law, Business & Society* Every professional business person must be aware of how legal systems work and effect business decisions. Furthermore, the interaction between Law and Business is multidimensional involving international, ethical, and technological considerations. In this course, students examine how key areas of business law, including contracts, torts, and business organizations, influence the structure of domestic and international business relationships. Students actively participate in legal studies

designed to enhance business skills such as analytical thinking, written communication, oral presentation, conflict resolution, and team work problem-solving.

SOIM-UB 9065 *Organizational Communication and Its Social Context* In this course, students learn how to increase their communication effectiveness for business and professional goals. During the semester, students focus on the strategic implications of communication for modern organizations. A variety of assignments are given to stress the following communication competencies: written, spoken and nonverbal communication basics for business; effective team communication strategies; informative, persuasive and collaborative presentations; communication techniques for required junior and senior year projects. Students regularly receive personal feedback about their writing and their oral presentations from the instructor.

APPENDICES

Leadership

Yu Lizhong, Chancellor; Ph.D. in Geography, the University of Liverpool; Home Institution: NYU Shanghai

Jeffrey S Lehman, Vice Chancellor; J.D., University of Michigan Law School; Home Institution: NYU Shanghai

Joanna Waley-Cohen, Provost; Ph.D. in History, Yale University; Home Institution: NYU Shanghai

Hongxia Liu, Associate Vice Chancellor and Chief Operating Officer; M.A. in public policy, New York University; Home Institution: NYU Shanghai

Eitan Zemel, Associate Vice Chancellor for Strategy and Dean of Business; Ph.D. in Operations Research, Carnegie Mellon University; Home Institution: NYU Shanghai

Xiao Jing Wang, Associate Vice Chancellor for Research; Ph.D. in Physics, the University of Brussels; Home Institution: NYU Shanghai

David Fitch, Interim Dean of Arts and Sciences; Ph.D. in Genetics, Connecticut; Home Institution: NYU Shanghai

Keith Ross, Vice Dean of Engineering and Computer Science; Ph.D. in Computer, Information, and Control Engineering, University of Michigan; Home Institution: NYU Shanghai

Tyra Liebmann, Dean of Students; Master of Public Administration degree, Harvard University; Home Institution: NYU Shanghai

Ron Robin, Senior Vice Provost for Global Faculty Development; Ph.D. in history, the University of California at Berkeley; Home Institution: NYU Shanghai

Scott Fritzen, Associate Provost; Ph.D. in Public, Princeton University; Home Institution: NYU Shanghai

Fanghua Lin, Associate Provost for Quantitative Disciplines; Ph.D., University of Minnesota; Home Institution: NYU Shanghai

Yuxin Chen, Vice Dean of Business; Ph.D. in Marketing, Washington University in St. Louis; Home Institution: NYU Shanghai

Nicholas Geacintov, Vice Dean of Science; Ph.D., Syracuse University and the SUNY College of Environmental Sciences and Forestry; Home Institution: NYU Shanghai

Faculty

Zhihua An, Affiliate Professor of Chemistry; Ph.D. in Physical Chemistry, Chinese Academy of Sciences; Home Institution: New York University, Clinical Assistant Professor

Douglas Avraham, Visiting Professor of Mathematics; D.Sc., University of Oxford; Home Institution: Rudolf Peierls Centre Theoretical Physics, England Visiting Miller Professor - Director of Graduate Studies

Benjamin Bacon, Assistant Art Professor of Interactive Media Arts; M.F.A. in Design + Technology, Parsons The New School for Design, New York; Home Institution: Assistant Professor of Computational and Media Design Parsons The New School for Design

Yehuda Band, Visiting Professor of Physics; Ph.D. in Physics, The University of Chicago; Home Institution: Departments of Chemistry, Electro-Optics and Physics and the Ilse Katz Institute for Nanoscale Science and Technology, Ben-Gurion University of the Negev

Amy Becker, Lecturer of Writing; M.A. in Journalism, New York University; Home Institution: NYU Shanghai

Matthew Belanger, Assistant Professor of Interactive Media; M.P.S. in Interactive Telecommunications, New York University; Home Institution: NYU Shanghai

Joel Bernstein, Global Distinguished Professor of Chemistry; Ph.D. in Chemistry, Yale University; Home Institution: NYU Shanghai

Jinghong Bi, Chinese Language Instructor; M.A. in Linguistics and Applied Linguistics, East China Normal University; Home Institution: NYU Shanghai

Shmuel Bittner, Visiting Professor of Chemistry; Ph.D. in Chemistry, Hebrew University

Xinying Cai, Assistant Professor of Neural and Cognitive Sciences; Ph.D. in Bioengineering, Arizona State University; Home Institution: NYU Shanghai

Bruce Carroll, Lecturer of Writing; Ph.D. in English Literature (Renaissance Studies) in University of New Mexico, Albuquerque; Home Institution: NYU Shanghai

Jing Chai, Chinese Language Instructor; M.A. in Teaching Chinese to Speakers of Other Languages, East China Normal University; Home Institution: NYU Shanghai

Jian Chen, Global Distinguished Professor of History; Ph.D. in History, Southern Illinois University; Home Institution: NYU Shanghai

Pen Chen, Chinese Language Instructor; M.A. in Linguistics and Applied Linguistics, East China Normal University; Home Institution: NYU Shanghai

Yuxin Chen (陈宇新), Wenliang Wang Distinguished Global Professor of Business and Finance; Ph.D. in Marketing, Washington University in St. Louis; Home Institution: NYU Shanghai

Zhihong Chen, Research Professor of History; Ph.D. in International History and Sinology, University of Cologne (Universität zu Köln), Germany; Home Institution: NYU Shanghai

Alice Chuang, Lecturer of Writing; Ph.D. in English, Vanderbilt University; Home Institution: NYU Shanghai

Ezra Claverie, Lecturer of Writing; Ph.D. in English, University of Illinois, Urbana-Champaign; Home Institution: NYU Shanghai

Brandon Conlon, Lecturer of Writing; currently pursuing an Ed.D in Higher Education from the University of Liverpool; Home Institution: NYU Shanghai

Pierluigi Contucci, Visiting Professor of Mathematics; Ph.D. in Mathematics, International School for Advanced Studies, Trieste; Home Institution: Alma Mater Studiorum, University of Bologna, Piazza di Porta San Donato 5, Italy, Professor

Nicola Di Cosmo, Visiting Professor of East Asian Studies; Ph.D. in Uralic and Altaic Studies (now Central Eurasian Studies), Indiana University; Home Institution: Princeton University, Luce Foundation Professor in East Asian Studies

Glen Cotton, Lecturer of Writing; Ph.D. in Education (Culture, Curriculum & Change), University of North Carolina; Home Institution: NYU Shanghai

Clayton Curtis, Affiliate Professor of Psychology; Ph.D. in University of Minnesota, Minneapolis, Home Institution: New York University Associate Professor

Chidelia Edochie, Lecturer of Writing; M.F.A. in Creative Writing, Purdue University, West Lafayette, Indiana; Home Institution: NYU Shanghai

Jeffrey Erlich, Assistant Professor of Neural and Cognitive Sciences; Ph.D. in Neuroscience, New York University; Home Institution: NYU Shanghai

William Faris, Visiting Professor of Mathematics; Ph.D. in Mathematics, Princeton University; Home Institution: University of Arizona, Professor Emeritus

Magnus Fiskesjo, Visiting Associate Professor of Anthropology; Joint Ph.D. in Anthropology and in East Asian Languages and Civilizations, the University of Chicago; Home Institution: Cornell University, Associate Professor

Ernest Gilman, Affiliate Professor of English; Ph.D. in English and Comparative Literature
Columbia University; Home Institution: New York University Professor

Alexander Goldenshluger, Visiting Professor of Mathematics; D.Sc. in Operations Research, Technion – Israel Institute of Technology; Home Institution: University of Haifa, Israel Professor

Amy Goldman, Lecturer of Writing; Ph.D. in Comparative Literature, UC Davis; Home Institution: NYU Shanghai

Michael Grubb, Visiting Assistant Professor of Neural and Cognitive Sciences; Ph.D. in Experimental Psychology, New York University; Home Institution: New York University, Teaching Assistant

Hichem Hajaiej, Visiting Associate Professor of Mathematics; Ph.D. in Applied Mathematics, the Swiss Federal Technology of Lausanne (EPFL); Home Institution: NYU Shanghai

Roderick Hills, Affiliate Professor of Law; J.D., Yale Law School; Home Institution: New York University, Chaired Professor

Hillary Hua, Director of Laboratories, Assistant Professor of Practice of Chemistry; Ph.D. in Chemistry, Rensselaer Polytechnic Institute; Home Institution: NYU Shanghai

Celina Hung, Assistant Professor of Literature of Literature; Ph.D. in Comparative Literature, Stony Brook University; Home Institution: NYU Shanghai

John Iacono, Affiliate Professor of Computer Science; Ph.D. in Computer Science, Rutgers, the State University of New Jersey; Home Institution: New York University Associate Professor

Andrea Jones-Rooy, Assistant Professor of Global China Studies; Ph.D. in Political Science University of Michigan; Home Institution: NYU Shanghai

Dan Keane, Lecturer of Writing; M.F.A. in Fiction, University of Michigan; Home Institution: NYU Shanghai

Eun Joo Kim, Lecturer of Writing; Ph.D. in English, University of Minnesota; Home Institution: NYU Shanghai

Moshe Kim, Visiting Professor of Economics; Ph.D. in Economics, University of Toronto; Home Institution: University of Haifa, Israel, Tenured Professor

Gad Landau, Visiting Professor of Computer Science; Ph.D. in Computer Science, Tel-Aviv University; Home Institution: University of Haifa, Israel Research Professor - Head of Computer Science

Jeffrey S Lehman, Vice Chancellor, Professor of Law; J.D., University of Michigan Law School; Home Institution: Founding Vice Chancellor and CEO NYU Shanghai

Cedric Lesage, Visiting Professor of Business and Finance; Ph.D. in Management, University of Rennes; Home Institution: HEC School of Management, 1 rue de la Liberation, France Associate Professor & Coordinator

Shaul Bar Lev, Visiting Professor of Statistics; Ph.D. in The Technion-Israel Institute of Technology, Israel; Home Institution: Professor of Statistics, University of Haifa, Israel

Wenshu Li (李文姝), Assistant Professor of Practice of Biology; Ph.D. in Genetics, Fudan University; Home Institution: NYU Shanghai

Fanghua Lin, Affiliate Professor of Mathematics; Ph.D., University of Minnesota; Home Institution: Courant Institute of Mathematical Sciences, NYU Silver Professor

Yuning Liu, Visiting Assistant Professor of Mathematics; Ph.D. in Applied Mathematics, Universite Henri Poincare Nancy 1, Nancy, France; Home Institution: Post Doc, University of Regensburg, Germany

Ping Ma, Chinese Language Instructor; M.A. in Applied Linguistics, East China Normal University; Home Institution: NYU Shanghai

Sam Meekings, Lecturer of Writing; M.A., Oxford University, M.Sc. with Distinction in Creative Writing, University of Edinburgh; Home Institution: NYU Shanghai

Paul-Andre Mellies, Visiting Associate Professor of Computer Science; Ph. D. Ecole Normale Supérieure (rue d'Ulm) in Mathematics, PhD thesis in Computer Science at INRIA Rocquencourt Master Parisien de Recherche en Informatique (MPRI) ; Home Institution: University Paris Diderot

Maria Montoya, Affiliate Professor of History; Ph.D. in US History, Yale University; Home Institution: New York University, Associate Professor

Debdeep Mukhopadhyay, Visiting Associate Professor of Computer Science; Ph.D. in Computer Science & Engineering, Indian Institute Education of Technology, Kharagpur; Home Institution: Indian Institute of Technology Kharagpur Assistant Professor in the Department of Computer Science and Engineering

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Mary Nolan, Affiliate Professor of History; Ph.D. in History, Columbia University; Home Institution: New York University, Professor

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Nella Pross, Visiting Laboratory Professor of Chemistry; Ph.D. in Organic Chemistry, Hebrew University, Jerusalem; Home Institution: Senior Lecturer in Chemistry and Biotechnology at Ben Gurion University of the Negev, Be'er Sheva, Israel.

Krishnamurthi Ravishankar, Visiting Professor of Mathematics; Ph.D., Yeshiva University; Home Institution: State University of New York at New Paltz, Professor

Avraham Reznik, Visiting Professor of Biology; Ph.D., Inst. of Molecular Biophysics, Florida State University; Home Institution: Visiting Professor, at Albert Einstein College of Medicine of Yeshiva University; Head- Inst. of Gerontology at Albert Einstein College of Medicine; Head- Department of Anatomy and Cell Biology, Faculty of Medicine Technion- Israel Institute of Technology. Haifa, Israel

Leonardo Rolla, Visiting Assistant Professor of Mathematics; Ph.D. in Mathematics, Instituto de Matemática Pura e Aplicada; Home Institution: Universidad de Buenos Aires, Tenured Researcher

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Orly Sade, Visiting Associate Professor of Finance; Ph.D. in Finance, University of Utah; Home Institution: Jerusalem School of Business, Hebrew University of Jerusalem, Israel, Associate Professor (with tenure)

Lena Scheen, Assistant Professor of Literature; Ph.D. in Chinese Literature, Leiden University in the Netherlands; Home Institution: NYU Shanghai

David Schley, Lecturer of Writing; Ph.D. in History, Johns Hopkins University; Home Institution: NYU Shanghai

Offer Moshe Shapir, Visiting Assistant Professor of Economics; Ph.D. in Asset Pricing: Performance Ratings, Credit Ratings and Time Preferences, Ben Gurion University; Home Institution: Ben Gurion University, Adjunct lecturer

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Arthur Larry Wright, Visiting Professor of Mathematics; Ph.D. in Mathematics, University of California at Irvine; Home Institution: Columbia University Associate Professor & Science Advisor

Matthieu Wyart, Affiliate Professor of Physics; Ph.D. in the SPEC, CEA Saclay, Paris; Home Institution: New York University, Assistant Professor

Yisong Yang, Affiliate Professor of Mathematics; Ph.D. in Mathematics, University of Massachusetts, Amherst; Home Institution: New York University, Professor

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John Zhang (张增辉), Professor of Chemistry; Ph.D. in Chemical Physics, University of Houston; Postdoctoral Research at University of California, Berkeley; Home Institution: NYU Shanghai

Jun Zhang (张骏), Professor of Physics; Ph.D. in Physics, Niels Bohr Institute at the University of Copenhagen; Home Institution: NYU Shanghai

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Chenchen Zhao, Chinese Language Instructor; M.A. in Teaching Chinese to Speakers of Other Languages, East China Normal University; Home Institution: NYU Shanghai.

I. NYU SHANGHAI 2014-2015 ACADEMIC CALENDAR

Fall Semester	
Freshman Move In Day	Saturday, August 16
Freshman Orientation Begins	Monday, August 18
Returning/Study Away Move In Day	Sunday, August 24
Fall Semester Classes Begin	Monday, September 1
Mid-Autumn Festival Holiday	Monday, September 8
Legislative Day	Sunday, September 28 (classes meet on a Monday schedule)
National Day Holiday: Fall Break	Wednesday, October 1 - Friday, October 3
Midterm Grades Deadline	Friday, November 7
Registration for Spring Semester 2015 Begins	Monday, November 17 (tentative)
Legislative Day	Monday, November 24 (classes meet on a Wednesday schedule)
Legislative Day	Tuesday, November 25 (classes meet on a Thursday schedule)
Legislative Day	Wednesday, November 26 (classes meet on a Friday schedule)
Thanksgiving Holiday	Thursday, November 27 - Friday, November 28
Last Day of Fall Semester Classes	Friday, December 12
Reading Day	Saturday, December 13
Final Exams	Monday, December 15 - Friday, December 19
Final Grades Deadline	Grades due 72 hours after scheduled final exam
Winter Break	
Winter Break	Friday, December 19 - Monday, January 5
Optional January Term	
January Term Classes Begin	Tuesday, January 6
Last Day of January Term Classes	Friday, January 23
Spring Semester	
Study Away Move In Day	Tuesday, January 20
Study Away Orientation Day	Wednesday, January 21
Spring Semester Classes Begin	Monday, January 26
Spring Festival Holiday	Monday, February 16 - Tuesday, February 24
Spring Recess (includes Qingming Holiday)	Wednesday, April 1 - Monday, April 6
Midterm Grades Deadline	Friday, April 10
Legislative Day	Saturday, April 11 (classes meet on a Monday schedule)
Registration for Fall Semester 2015 Begins	Monday, April 20 (tentative)
China Labor Day Holiday	Friday, May 1
Last Day of Spring Semester Classes	Friday, May 15
Reading Day	Saturday, May 16
Final Exams	Monday, May 18 - Friday, May 22
Final Grades Deadline	Grades due 72 hours after scheduled final exam