



Fall 2003

Olin College

Registration Booklet

Volume 2, Number 1.1

Updated August 15, 2003

Fall 2003 Registration Information

When Do I Register?

Freshmen: Registration will take place on Wednesday morning, August 27, 2003 at orientation using the on-line system. There will be two groups for registration.

Sophomores: Registration for Olin courses and submission of cross-registration requests is Wednesday, April 23rd and Thursday, April 24th. There will be one round of on-line registration. Access to the Web Registration site <https://sis.olin.edu> will open on Wednesday, April 23th at 10:30pm and will close on Thursday, April 24th at 11:59pm. Additionally, there will be an add/drop period prior to the summer break to make any additional changes to your schedule due to cross-registration issues or other factors.

(Registration will be open to eligible students only. An eligible student is one who does not have an outstanding financial balance with the college.)

How do I Register?

1. Log into the Web Registration system at <https://sis.olin.edu> .
2. Click the "For Students" Button on the bottom and enter the secure connection using your username and password (new student distribution on Wednesday, August 27th).
3. Make sure your "Set Options" are selected for Fall 2003. This can be done from the **MAIN** page at the bottom of the screen.
4. Select the **Registration** option from the directory structure on the left frame of the web page.
5. Enter the course number and the section of your choice and click **Add**. (For course numbers and sections refer to the course listing in Appendix III of this booklet.)
6. Confirmation Messages appear above the schedule in the **blue bar**. If you are not successful with an add function (due to a conflict or a full course), try another course and/or section. If you make a mistake, you can **Drop** the confirmed course and **Swap** it for another by using the **Swap** option. To use the swap option, select a course to "drop" and then enter the course number and section that you want to swap for it. You can also drop courses by selecting the radial button next to the course and clicking the "drop" key. You can only drop one course at a time. When you are finished, close the browser.

What about Co-Curriculars?

Co-curricular registration will begin on August 28, 2003 and will end September 5, 2003. Students can register using the on-line system at anytime during these dates. Descriptions can be found in Appendix II of this document and as a separate document on Blackboard – Olin Community – Documents – Semester Schedules and Registration Booklets.

What about Passionate Pursuits or Non-Degree Research?

If you are interested in doing a Passionate Pursuit, consult the Student Handbook for FAQ's. In order to get non-degree credit for your Passionate Pursuit, you must submit a credit proposal to at least one faculty member and get approval from your adviser. Credit approval forms are available on Blackboard. In order to be listed as semester work, an approved credit proposal for a Passionate Pursuit must be submitted to the Registrar during the semester the work is to be completed. Remember that the maximum amount of non-degree credit you can receive in a semester is three (3). Non-degree research is available to students after the completion of their first semester. Contact a member of Independent Study and Undergraduate Research Board (ISURB) or Blackboard for more information.

Cross-Registration

Students interested in cross-registration should use the following guidelines to find a course to meet their AHS or elective "slot." (Note: First Year students are restricted from cross-registration in the fall semester, with the exception of a Babson foundation level AHS.)

Keep in mind the time constraints of the *integrated course blocks* and any other Olin course you may be interested in taking. The process for cross-registration during this developmental phase is time consuming in getting information back and forth from Olin to the other schools. As a result, there will be opportunities after registration to finalize any and all details. In other words, don't panic. Every effort will be made to accommodate your learning objectives for the upcoming semester.

Note: When looking for a course at a BBW school, it is important to check for course pre-requisites and the enrollment. Under most circumstances, if the course is full, you will not be able to register for the course. Enrollment is generally found under course "tally" or listed with the course section information.

Babson College: You can find their offerings at <http://newton.babson.edu/registrar/>. You do not need a log-in to access the information.

Choose "course listing" from the menu options on the left menu bar and then follow the prompts from that point. It is best to sort by course title and course number. If you find a course you are interested in, complete a cross-registration form (found on Blackboard in Olin Community → Documents → Academic Forms on Blackboard) and send it to linda.canavan@olin.edu. Linda will work with Babson to facilitate the registration.

Brandeis University: You can find Brandeis offerings at http://www.brandeis.edu/registrar/reg-sched/033_prereg/index.html. If you find a course you are interested in, complete a cross-registration form (found on Blackboard in Olin Community → Documents → Academic Forms on Blackboard) and send it to linda.canavan@olin.edu. Linda will work with Brandeis to facilitate the registration.

Wellesley College: You can find their offerings at <http://www.wellesley.edu/Registrar/fall03sched.html>. Students interested in pursuing a course at Wellesley should complete a registration form (found on Blackboard in Olin Community → Documents → Academic Forms on Blackboard) and send it to linda.canavan@olin.edu. Linda will facilitate the registration for Olin students.

Note to class of 2006: Cross Registration Requests will be accepted through May 12, 2003. Requests received after this date will be processed in August.

Engineering Curriculum: Year One, Semester One

What do I register for?

First Year students: The fall semester at Olin College is composed of an Integrated Course Course Block (ICB), sometimes called “cohorts,” Modeling and Control, and a foundation Arts, Humanities and Social Sciences (AHS) course. Students may elect to take their foundation AHS course in the spring semester by taking an elective in the fall.

ICB Overview – (Choose 1 of 3)

An ICB is a large course block (equivalent to three conventional courses) taught by a multidisciplinary faculty team. The block combines two disciplinary topics, Math and Physics, with a large interdisciplinary project, which connotes the “flavor”. ICBs enable tight coordination between the **understanding** of underlying disciplines and the **application** of this disciplinary knowledge to real engineering problems. ICBs also provide a logical environment for students to develop **entrepreneurial skills**, such as opportunity assessment and teamwork. Finally, ICBs address **student choice** by allowing them to relate material to an application of their choosing – in any given semester, students can opt for one of three “flavors” of the ICB.

Students will register for the entire ICB based on their interest in one of three “flavors.” The ICB consists of three courses, each of which is graded individually at the end of the semester. The student schedule will reflect the times that the disciplinary subjects are offered and the nine hours of scheduled project time (3 of these hours are in the evening to help facilitate common Team time).

The three disciplinary topics for the first semester of the freshmen year are:

FND1210

Physical Foundations of Engineering I

The physics component of this integrated course provides a thorough introduction to classical mechanics. The course covers kinematics, the basis of Newton’s laws, particle dynamics, and the concepts of momentum, work, energy, and rotational motion. Additionally, this course establishes the basics of solid and fluid mechanics, concluding with introductory topics in thermodynamics.

FND1312

Mathematical Foundations of Engineering I: Calculus & Differential Equations

The mathematics component of this integrated course block introduces and reinforces several concepts from Calculus and Differential Equations. Calculus material includes the theory and applications of sequences, series, limits, parametric equations, and integrals. The Differential Equations component covers various methods for solving certain first- and second-order differential equations that arise in engineering and scientific applications. Skills of mathematical modeling and solution analysis are developed.

FND1410

Foundations of Mechanical Design

This project-based course integrates concepts in Mathematical and Physical Foundations I with applications and hands-on mechanical design. This course introduces the tools of Mechanical Engineering, including CAD (computer aided design), fabrication techniques, and teamwork skills.

In addition to the disciplinary topics, the ICB “flavors” are defined by the projects below:

ICB (Cohort) 1: Mechanical Nature

What can we learn from the birds and the bees and the fishes in the sea? The answer is a lot. Engineers frequently study the ingenuity and beauty of the natural world to find inspiration for their work, investigating such diverse things as fish eyes, insect legs and plant seeds. And, the results can be remarkable. Think airplanes and gecko tape (coming to a store near you). In this cohort, you will design and prototype simple mechanical devices that are bioinspired. We will learn about mechanisms by taking apart existing devices, finding examples in nature and building them. We will also explore patterns, shapes and structures in nature and begin to develop a vocabulary of biological form.

ICB (Cohort) 2: High Impact

Many mechanical devices work smoothly, delivering constant levels of power. Others lead more exciting lives, accumulating and suddenly releasing energy. Examples range from a 200 year old pump that can lift water up a hill using only 2 moving parts to common tools such as hammers and impact wrenches. Even nature utilizes accumulate and release mechanisms, such as in the righting behavior of the click beetle (which accelerates at 400 g) and the jumping mechanism of the grasshopper.

In this project, you will have the opportunity to learn how accumulate and release mechanisms work, and what they're good for. Deep philosophical questions such as "How come the mechanic using an air wrench doesn't spin around the other way?" will be addressed. Besides learning prototyping skills along with the other cohorts, you'll be disassembling and reverse-engineering some tools, and designing and prototyping your own accumulate and release machines.

ICB (Cohort) 3: Things that Go

Did you ever wonder what you could do with a bicycle pump? In this cohort you'll design, construct, and test simple vehicles ranging from water rockets to solar dragsters. Along the way you'll learn plenty of math and physics as well as design, modeling, and fabrication skills. Grab your safety glasses, because after your dragsters are honed to perfection, you'll gear up for some friendly team competition. If you think you can handle the pressure, join us as we pump up the volume in Things That Go.

Modeling & Control Overview:

FND1510

Modeling & Control

Professors Gill Pratt, Brian Storey

In this laboratory-based course we will learn about computer tools that assist student and professional engineers to design and analyze physical systems. We will write programs in Matlab, SimuLink, and C that acquire data from experiments, analyze that data, perform simulations on models of physical system, and control these systems in real-time. We will briefly touch on signal conditioning and amplification, and also examine the mathematics of numerical methods that underlie the analysis, simulation, and control methods we use.

Arts, Humanities and Social Sciences (AHS) Overview

All students are required to take a foundation AHS course in their first year. For the fall, you have 2 subject choices, AHS1101: History & Society taught by Babson Professor Fritz Fleischmann OR AHS1102: Arts & Humanities taught by Babson Professor Marty Tropp. (Note: Arts & Humanities and History & Society will be taught on the Olin campus and with Babson students. This is a great opportunity to meet the "neighbors.")

If you elect **not** to take your foundation course in the fall, you may choose an elective or one of the two non-foundation AHS courses, *Wired Ensemble* or *Seeing & Hearing*. Descriptions can be found in the AHS/Electives section.

Elective Overview

If you would like to take an elective in lieu of an AHS course, you will have to take your foundation AHS course in the spring semester. Elective courses are listed beginning on page 9. The two elective courses open to freshmen are *Interactive Programming* and *Discrete Math*.

Engineering Curriculum: Year Two, Semester One

What do I register for?

Sophomores: The fall semester marks the beginning of defining your major at Olin. There are six remaining foundation courses that all sophomores must take: Signals & Systems, Principles of Materials Science, Biology, Applied Mathematical Methods, Foundations of Business and Entrepreneurship (FBE) and Foundations of Engineering Project III (including sophomore design preparation). In general, there will be a total of three sections of each course offered during the academic year. Usually, there will be two options in the fall and one in the spring or one in the fall and two in the spring. For example, if a student takes an integrated course block of Biology in the fall with FBE and a Project, he or she needs to be sure to take the Signals & Systems, Materials Science and Applied Mathematical Methods at some point in the fall or the spring semesters. To assist you with your plan, refer to the tentative list of courses and sections for spring 2004 below.

To begin planning accordingly, it is **strongly** recommended that students review the March 1, 2003 Academic Recommendations Board (ARB) curriculum document for degree and major requirements.

Requirements Overview – Entire Sophomore Year

- FND2240 Principles of Materials Science
- FND2350 Applied Mathematical Methods
- FND2410 Foundations of Engineering Project III (fall only)
- FND2510 Signals & Systems
- FND2610 Foundations of Business & Entrepreneurship
- FND2710 Biology
 - AHS course
 - Elective course
- FND2490 Sophomore Design Project (spring only)
- One of the following:
 - Thermo (for ME and E with MSAC majors) (spring only)
 - Systems (for E with Systems Design major) (spring only)
 - Software (for ECE and E with C majors) (fall or spring)
 - (aka - ELE1050: Interactive Programming: The Design of Software Systems)
 - Biomechanics (for E with Bio-Engineering) (spring only)

Fall 2003 Helpful Hints:

1. Register for 1 of the 3 Integrated Course Blocks (ICB)
 - Paul Revere – Tough as Nails (MatSci + Project)
 - Software Using Images&Sound (SigSys + Project)
 - Bio Biz (Bio + FBE + Project)
2. 2 additional requirements from the list on the left

Tentative List of Spring 2004 Course Offerings

Course #	# Sections Offered	Course Title
Courses listed below are required offerings		
FND2350	2	Applied Mathematical Methods
FND2490	4	Sophomore Design Project
FND2710	2	Principles of Modern Biology
FND2240	1	Material Science and Applied Chemistry
FND2610	1	Foundations of Business & Entrepreneurship
FND2510	1	Signals & Systems
ELE1050	1	Interactive Programming: The Design of Software Systems (may have a name and number change)
XXX_ _ _ _	1	Thermodynamics and Chemistry of Combustion
XXX_ _ _ _	1	Systems
XXX_ _ _ _	1	Biomechanics
Courses listed below are possible elective/ahs offerings		
ELE / AHS	1	AHS course upper level for Xreg with BBW
ELE	1	CS Elective
ELE	1	Elective with BioPhys flavor
ELE	1	Organic Chemistry
ELE1025 / AHS1125	1	Musical Design and Aesthetics
ELE1010 / AHS1111	1	Responsive Drawing and Visual Thinking
AHS1160	1	What is I?

COURSE DESCRIPTIONS

Sophomore Foundation Options

FND2410

Foundation Project III (fall only)

The Integrated Course Blocks in the third semester combine technical and non-technical subjects. Consequently, the nature of the associated projects will be more variable, and tailored to suit the requirements of the constituent courses. Part of the scheduled project time in each ICB will be devoted to developing technical laboratory skills, often in a project context. Extended team projects will either be developed by the course instructors, or, in some cases, may be sponsored by outside parties, such as engineering or biotechnology firms.

FND2411 (.5 credits)

Sophomore Design Project Preparation (fall only)

This .5 credit course is being developed to assist students in the planning of their sophomore design project. Group meetings will take place on Friday during the designated "project time block." All sophomore students must register for this course and will be graded using Pass/No Credit.

Section 01 – Professor: Jonathan Stolk

Paul Revere: Tough As Nails

"I'm going to get you copper!" Paul Revere cried as he ran through the darkened streets of 18th century Boston. But contrary to public opinion and historical record, Revere was not spitefully disparaging the colonial police officers. Indeed, Revere was simply expressing frustration at his inability to control the behavior of atomic number 29, a reddish-brown, ancient substance known as cuprum, or "copper." Revere was not a derelict, delinquent, hooligan, or ne'er-do-well; he was a hero. And despite your sketchy past, the Paul Revere cohort will take YOU from zero to hero in three easy steps. But be warned; if copper isn't already your favorite material, there's a good chance it will be by the end of the semester.

In Phase 1, your team will complete small, well-defined projects that focus on fundamental knowledge and skill development in key materials science topics, laboratory and analytical techniques, historical research methods, and effective written and oral communication.

In Phase 2 of the project, you will explore the connections between historical and technological materials science developments through an examination of Paul Revere's metallurgical work. Your team will select an alloy system (brass, iron, copper, or silver) and fabrication technique (rolling, drawing, forging, or casting) and produce Revere-like artifacts. You will design experiments and use modern laboratory equipment to answer a historical question of importance to Revere and to shed light on materials processing-microstructure-property relationships that were unclear in Revere's day. By the end of Phase 2, you will understand how to control, modify, and predict material properties and microstructure; you will be able to increase the strength, decrease the brittleness, refine the grain size, and change the microstructural features of alloy systems while talking and dressing like a historian.

In Phase 3, we'll take a student-initiated design approach to the history-materials connections. Your team will select a materials science topic of technological and historical significance (superalloys, nanomaterials, steelmaking, biomimetic materials, famous materials failures or disasters, synthetic thermoplastics, or whatever), and you'll explore this issue through a self-designed program of research and laboratory experimentation. The final report will include an analysis of the relevant social, environmental, political, and economic aspects of your research topic.

Throughout the semester, teams will share their knowledge and project experiences through formal peer instruction sessions and informal class discussions.

Section 02 – Professor: Jill Crisman
Software Using Images and Sound

In this project, we will be learning to program in C or C++ (advanced exercises will be provided for those who already have programming skills and want to further develop their abilities.) We will be manipulating images and sounds in our programs to allow students to utilize and visualize concepts taught in the companion class Signals and Systems. Example assignments may include recognizing voices from the students in the class, reading a MIDI file and playing it on the speakers of your computer, and finding peoples eyes in images and removing "red-eye."

Section 03 – Professor: Elaine Allen
Bio-Biz

The 21st century is often predicted to be "the century of biology." The pace of development of biological knowledge and the sophistication of technology based on molecular and cellular biology has been astounding. Modern biological methods have led to major economic developments, and have spawned important industries for biotechnology and bioengineering. This Integrated Course Block will combine elements of modern biology, business and entrepreneurship, and a project. Students will learn the fundamentals of molecular and cellular biology. They will develop basic laboratory competencies that will be applied to a lab project that reinforces biological concepts and experimental design skills. Students will also study the fundamentals of business and entrepreneurship. Projects will be developed with assistance from local biotechnology or bioengineering companies; these projects will provide the environment within which to understand how scientific advances in biology are developed in a business context.

FND2240
Principles of Materials Science with Lab

Section 1A or 1B – Professor: Jonathan Stolk
(This is an Integrated Course Block with AHS2110 and FND2410-01.)

Section 02 or 03 – Professor: Debbie Chachra
(This section is a stand-alone version.)

Note:
Students in Jon Stolk's course should choose section 1A **OR** 1B (not both).

Note:
Choose section 02 **OR** 03 depending on the lab time.

This laboratory-based course introduces students to the relationships among structure, processing, properties, and performance of engineering materials including metals, ceramics, polymers, composites, and semiconductors. Students apply materials science principles in laboratory projects that focus on analysis of material microstructure, measurement and modification of material properties, and selection of materials for engineering designs.

FND2350
Applied Mathematical Methods

Professor: Michael Moody

An introduction to standard statistical and analytical techniques used to solve mathematical problems that arise in science and engineering. Topics include an introduction to probability and statistics with additional topics in linear algebra and ordinary differential equations, such as linear stability theory of systems of ordinary differential equations, bifurcation theory, generalized eigenspaces, Lagrange multipliers, and other solution techniques to optimization problems.

FND2510
Signals & Systems

Section 01 - Professor: Diana Dabby
(This is an Integrated Course Block with FND2410-02)

Section 02 – Professor: TBA
(This section is a stand-alone version.)

Signals (functions of one or more independent variables) and Systems (devices that perform operations on signals) presents fundamental concepts that arise in a wide variety of fields. The ideas and techniques associated with these concepts inform such diverse disciplines as Biomedical Engineering, acoustics, communications, aeronautics and astronautics, circuit design, seismology, energy generation and distribution systems, chemical process control, the Arts, Humanities, and Social Sciences. Topics include dynamic systems (continuous and discrete), transforms (Laplace, Z, Fourier), frequency analysis, feedback (stability, performance), convolution, generalized functions, modulation (AM and FM), sampling, and filtering (analog, digital).

FND2610

Foundations of Business & Entrepreneurship (FBE)

Professors: John Bourne and Stephen Schiffman

Section 01 - Integrated Course Block with
FND2710 and FND2410-03

Section 02 – Stand Alone version

The course is designed to provide Olin students with experience in planning and growing a business venture. The learning experience is centered on “doing” (e.g., engaging in a business simulation) while building a student’s competence in the functional areas of business including accounting, finance, marketing, and strategy. The course extends teaming skills and builds and expands on the entrepreneurial model introduced in the Opportunity Assessment Practicum during the first year of the Olin curriculum.

FND2710

Biology with Lab

Professor: Joanne Pratt

(This is an Integrated Course Block with FND2610-01 and FND2410-03.)

This course introduces students to the fundamental aspects of biological science including biochemistry, molecular biology, human molecular genetics, and cellular communication. Students gain experience with contemporary research methods and scientific reasoning through laboratory experiments. The relevance of Biology to the environment and health is emphasized.

AHS and Elective Options

For additional information on AHS requirements, see Appendix I

AHS1101

History and Society: “Bodies in Motion: Migration and Meaning in the 20th-Century U.S.”

Professor: Fritz Fleischmann

(This course fulfills a foundation AHS requirement.)

In the 20th century, human societies changed at an unprecedented pace, raising new questions about how individual and collective identities are made and remade in the face of movement and instability. By focusing on narratives of belonging and exclusion, "Bodies in Motion" explores the social and psychological construction, destruction and reconstruction of identity in the United States during the past century. We will ask how diverse peoples have defined themselves and how they have been defined in the context of such major political and social phenomena as immigration and migration; the rise and decline of racial, ethnic, and religious identification; changing gender and sexual norms and the development of new forms of family; war and its consequences; and oppression and movements of liberation.

AHS1102

Arts and Humanities

Professor: Marty Tropp

(This course fulfills a foundation AHS requirement.)

In this course we will examine a range of texts in art, film, and literature that fall into genres such as the detective story, fantasy, tragedy, or comic form, as well as relevant philosophical concerns such as agency, rationality, and pragmatism, in order to explore a number of questions: How do works of art get categorized into different genres? Do these categories affect our expectations and experience of the artwork? What determines the difference between examples of high and low art in a particular genre? How do the different works in a genre speak to each other? How does a work of art, film, or literature derive meaning from following or questioning the standards of the genre to which it belongs?

AHS1122

The Wired Ensemble – Instruments & Voices

Professor Diana Dabby

(This course meets an AHS breadth or depth requirement, or is an elective. It is not a foundation AHS requirement.)

Each year *The Wired Ensemble* focuses on a different topic, culminating in a variety of performances. For Fall 2003 students will concentrate on the orchestra, its instruments, voices, and the symbolic language that brings them to life. The course combines understanding of acoustic instruments/voices with orchestral and vocal ensemble writing, performance, and recording—all geared to a dramatic production. Familiarity with instruments and voices, and writing for them in solo/ensemble settings, builds a deeper understanding of how great composers wrote and colored their scores.

By commingling 1st and 2nd year students, the Wired Ensemble exploits vertical integration to create a production, and other performances, that uniquely match the skills and talents of its members. It enables sophomores to link what they learn in an AHS course to a technical discipline (in this case, Signals and Systems) and to utilize the talents of both first and second-year students in their creative work.

For the freshmen the course offers a variety of showcases for their work as performers and/or composers, including Admissions Open House, Family Day, and Candidates' Weekends. Effectively, it helps launch and introduce incoming musicians to the Olin community in a professional, supportive, and fun environment. Admission to the class is based on discussion/audition (as needed).

Both freshmen and sophomores will also have the option of wearing multiple hats. In addition to the Wired Ensemble's class production, students' creative work will provide 'signals' for the project component of the "Signals and Systems" cohort. Thus, members gain practical experience with signals and systems by virtue of their creative endeavors. The class's culminating production will involve composers, performers, writers, dancers, actors, and _____ (your expertise here). Students will define the script and scope of the production. For now, you might imagine an audience seated in an auditorium. Suddenly the lights go out, and only *TWE* knows what's going to hit them.

Class trips to Boston and New York will feature various orchestral, choral, and theatrical ensembles. The New York trip will give Olin performers a chance to participate in master classes at Juilliard. These trips will bring students more in contact with life outside Olin, plus serve as motivation and inspiration.

The Wired Ensemble is sponsored by Toscanini's Ice Cream.

AHS1130

Seeing and Hearing: Communicating with Photographs, Video and Sound

Professor: Helen Donis-Keller

(This course meets an AHS breadth or depth requirement, or is an elective. It is not a foundation AHS requirement.)

Seeing and Hearing is about the communication of ideas developed by research, reflection, and evolving thought using, as a vehicle for expression, contemporary media tools. Students receive a hands-on introduction to audio recording and editing, digital photography and printing, and video recording and editing. Science and engineering content are integrated in order to provide a reasonably comprehensive understanding of the devices we use to gather sound and images and in order to understand more fully the properties of seeing and hearing. A major goal is to enlarge our awareness of the environment we inhabit and to respond to the perceived environment by producing original visual and sonic artwork. Students complete projects including self-portraiture, a documentary, and the construction and recording of sound-producing devices. Our process is to share work through discussion sessions as we follow projects from their initial stages to completion and final presentation. Additional context for Seeing and Hearing is provided by selected readings, visits by guest lecturers, additional faculty and staff participation, and by viewing work of other professional practitioners. This course does not require prior experience with image/sound gathering or editing.

AHS2110

“The Stuff of History” – Ancient, Revolutionary, and Contemporary Materials Technologies

Professor: Robert Martello

(This course has a pre-requisite of a foundation AHS course.)

The lion's share of our history of technology course features a series of readings, lectures, and discussions on the relationship between materials, science, society, and the environment in three historical periods. We start with the material practices and paradigms of Copper and Bronze Age societies, shift to Paul Revere's "Revolutionary" work with various metals and fabrication processes, and conclude with a look at the technologies and challenges of tomorrow. We will emphasize the development of three skills that are vital to our studies: contextual thinking, communication (both written and oral), and historical research methods pertaining to source evaluation and narrative construction.

ELE1050

Introduction to Interactive Programming: The Design of Software Systems

Professor: Lynn Andrea Stein

This course is an introduction to computer programming. It will be taught in the Java programming language, and will teach the language (i.e., no prior programming experience is assumed), but it is not about the language. Students with no prior background AND students with background comparable to the CS AP should both find this course interesting and worthwhile.

The theme of this course is interactive programming. Most computation these days is not algorithmic question-answering in desktop boxes (as typically taught in introductory computer science). Instead, this course will focus on a model of computation as a set of simultaneous ongoing entities embedded in and interacting with a dynamic environment: computation as interaction; computation as it occurs in spreadsheets and video games, web applications and robots.

A major component of the class will be a weekly three hour in-class laboratory. Much of this laboratory will be spent in collaborative work on program development, with an emphasis on student-student interaction and student-student teaching, facilitated and enriched by the course staff. In addition, design and implementation work will be supplemented with observational laboratory assignments, inviting students to consider not only how to build a program, but how to anticipate its behavior and how to modify that behavior.

MTH2310

Discrete Mathematics

Professor: Sarah Spence

Pre-Requisite: Familiarity with matrices or Permission of Instructor

The topics covered in this course may include, but are not limited to, graph theory, combinatorics, sets, logic, creative problem solving, and the reading/writing of rigorous proofs. Some of the mathematics covered in the course has applications in computer science and electrical engineering.

Appendix I

Olin AHS Requirements ...an introductory primer

Welcome to AHS

At Olin, “AHS” stands for **Arts, Humanities, and Social Sciences**. An Olin AHS education begins with a minimum of eight required AHS courses and includes material delivered in technical courses as well as non-course experiences. This AHS curriculum is a vital cornerstone of a Renaissance engineer’s education and will enable Olin’s graduates to identify, understand, and address the concerns of the 21st century ... and beyond.

Olin’s AHS course requirement consists of an introductory foundation course, a breadth requirement that offers exposure to different disciplines, a depth requirement that offers a concentration and advanced work in one discipline, and a creative AHS Capstone.

You can find additional information concerning the philosophy and mechanics of the Olin AHS experience at <http://projects.olin.edu/AHS>, a web site that, much like Olin College, is continually under development and bursting with the glorious potential for education and fun.

Key disclaimer: all AHS policies are subject to change as the well-meaning and underfed AHS committee continues to assess and improve this program. Olin believes in placing the spirit above the letter of the “law,” and the AHS Committee and your adviser will be more than happy to discuss your concerns and find a way to make the AHS experience work for you.

Overall AHS Course Requirement and Cross Registration

All Olin students must complete *at least*¹ eight AHS courses prior to graduation. These eight courses must satisfy the following requirements, not necessarily in this order:

1. AHS foundation (must be completed in the freshman year)
2. First depth course
3. Second depth
4. Third depth
5. First breadth course
6. Second breadth
7. Unrestricted
8. AHS Capstone

You can take the foundation course in either the first or second semester of your freshman year. If you take the foundation course in the second (spring) semester, you can take either an AHS course or a free elective in the first semester.

Olin students can register for course offerings at Olin, Babson, and Wellesley Colleges and Brandeis University.² Olin will also offer credit for AHS courses taken at many other institutions.

¹ The AHS Committee unanimously urges you to consider using some of your free electives to add additional breadth or depth to your AHS education.

² Registration options at other institutions may be restricted in the first semester of the freshman year.

- Wellesley courses often include prerequisite requirements and Olin students are strongly urged to consult the Wellesley course catalog at <http://www.wellesley.edu/Courses/home.html> prior to registration.
- Babson allows Olin students to register for any foundation or intermediate level course at any time. Olin students may register for advanced level Babson courses after completing three foundation or intermediate-level courses, or with permission of the instructor. Babson's course catalog is available at <http://www2.babson.edu/babson/courselist.nsf/ulevel?openform&db=hp>.
- Brandeis courses also often include prerequisite requirements and Olin students are strongly urged to consult the Brandeis course catalog at <http://www.brandeis.edu/registrar/bulletin.html> prior to registration.

AHS Foundation Requirement

All Olin students must take one designated “foundation” course in either the fall or spring of their first year. All foundation courses should accomplish several goals, including introductory writing instruction, exposure to extensive readings and critical analysis techniques, and practice with class discussion and (possibly) presentation skills. These goals will be explained in greater detail in an upcoming publication.

For the 2003-04 academic year the designated Olin AHS **foundation** offerings are:

- *Arts and Humanities Foundation*, offered in the fall and spring (spring at Babson only).
- *History and Society Foundation*, offered in the fall and spring (spring at Babson only).
- *Science, Technology, and Society*, offered in the spring at Olin (Professor Rob Martello).
- *What is It?*, offered in the spring at Olin (Professors Lynn Andrea Stein and Rob Martello).
- Possibly a spring course offered at Olin by Professor Diana Dabby, such as *Heroes of the Renaissance Engineer*.

Depth Requirement

All Olin students must take a sequence of at least three courses in a single AHS field.

- An “AHS field” is an area of intellectual inquiry within the Arts, Humanities, and Social sciences. Traditional fields include art, music, history, literature, philosophy, economics, political science, and many others, but Olin will also consider non-traditional fields such as “The historical and sociological study of China.”
- The three depth courses must build upon each other in some way, enabling advanced study in a field. Three introductory courses do not offer depth.
- The foundation and capstone courses **do not** count towards this requirement.

Breadth Requirement

All Olin students must sample at least two separate AHS fields outside of their area of depth (described above), thereby achieving a “breadth” of coverage of AHS topics.

- “Breadth” means “please explore different areas.” Each student needs to determine how their different breadth courses offer exposure to a range of ideas and thinking styles and skills and content areas. This is how one becomes a well-rounded Renaissance engineer.
- Ideal breadth coverage includes one course offering from the arts, one from the humanities, and one from the social sciences. You do not have to do this, however.
- The foundation and capstone courses **do not** count towards this requirement.

Capstone Requirement

All Olin students must complete a creative and exciting “AHS capstone” activity in their fourth year. The capstone will add depth and breadth to your AHS education. Details will be announced at a later time, but get ready for a once-in-a-lifetime experience.

What about communications, particularly writing?

The communication requirement is very much a work in progress. Please send your ideas to Christina.Shea@olin.edu and Robert.Martello@olin.edu if you would like to shape this vital part of your education.

The purpose of a communication requirement at Olin College would be to integrate the instruction and practice in writing and speaking throughout the curriculum. The objective would not be to add additional subjects to the curriculum, but simply to identify and develop communication intensive or communication concentration (CC) courses from existing courses in both AHS and the major or specialization: a seamless integration that reflects the college’s commitment to the engineer, as both a highly skilled writer and an informed, persuasive speaker.

Note that all AHS foundation courses emphasize communication as an integral learning objective and pedagogical goal.

Appendix II: Fall 2003 Co-Curricular Offerings

Registration for co-curriculars will begin on August 28, 2003. Registration will end September 5, 2003. Registration for co-curricular activities takes place after course registration and the first day of classes. The intent is to make sure students have a sense of their academic time commitments prior to taking on more activities with co-curriculars. You can register using the on-line system at <https://sis.olin.edu> by using the course number and section listed with the title.

CC18, section 01 Amateur Radio

Faculty/Staff Sponsor(s): David Kerns

This co-curricular offering is intended to test the level of student interest in ham radio. If successful, students will be encouraged to form an Amateur Radio Club under the auspices of the Council of Olin Representatives (CORe).

A trustee of Babson College donated ham radio equipment to Olin College late last year. Thanks to this generous donation, this co-curricular offering and a future club will have a running start. Dr. Kerns will share his knowledge of ham radio and advise the future club. It is expected that students will meet with Dr. Kerns once every other week on average and work independently between sessions.

CC13, section 01 Current Events Table

Faculty/Staff Sponsor(s): Ellen Cooney

Do you find it hard to remember that there is a world outside of Olin? Do you know that there are things happening out there, but can't find the time or motivation to learn more? Do you follow current events, but not have the time to discuss this with others? If you follow current events-- or if you don't, but wish you did--this table is for you!

The Current Events Table will meet weekly for an hour at lunch on a day to be determined. We will talk about current events that are of general interest to the group or that catch the eye of individual members. Discussions will be run by students on a rotating basis. Each participant may be asked to share some information about a topic of particular interest relevant to the week's news. We will also encourage faculty and staff members to join us so you can hear what they think about the world outside Olin. These discussions will be informal and informative. Debate, controversy, learning, deeper understanding, laughter—all will be encouraged. You will be encouraged to stay somewhat current through various means (reading the papers in the dining hall, TV news, on-line news, etc.) but are NOT expected to be an expert. If you are

staying away because you think you don't know enough about current events, this table is for you! Join us.

CC03, section 01 For Intelligent Lovers of Movies (F.I.L.M.)

Faculty/Staff Sponsor(s): Maruta Vitols

Do you love movies? Does it make you feel all warm and fuzzy inside to watch those beautiful images on a large screen with stereo surround sound? Do you spend more time at the local cinemplex than you do with your family? Is the guy who sells you popcorn and Junior Mints like a brother to you? Do you often experience an unexplainable desire to eat junk food, watch movies with your friends, and wear a tiara? Good news - there's a support group for people like you, and it's called F.I.L.M. (For Intelligent Lovers of Movies). Come join us for our weekly screenings and discussions of movies that will change the way you look at life (or at least the way you appreciate cinema). Plus, it's a fun break from studying (read: no conversations about homework allowed!). Film themes to be explored this semester: B-Movie Bonanza (Movies so Bad They're Scary), an Asian Cinema Series, and The Search for the Self: Film and Identity. Attendance policy: While the screenings themselves are optional (albeit fun), the discussions afterwards are what make F.I.L.M. a co-curricular. SO, if you would like to receive transcript notation, you must not miss more than 3 discussions this semester (i.e., you can miss three discussions and still receive recognition for your participation).

CC19, section 01

Go (a.k.a. Wei qu, Baduk)

Faculty/Staff Sponsor(s): Gus Heck

Go (a.k.a. Wei qi, Baduk) is perhaps the oldest board game, dating back into ancient China over 3000 years ago, though some estimates place it's origins even further back. The rules are very simple (far simpler than chess), but their interactions and application over the course of a game the challenge of a lifetime. Participants will receive beginner equipment and learn:

- The "capture game"
- The full rules of the game
- What do I do with all that space in the beginning?!?!?
- Common corner sequences (Joseki) such as the "kite" or the "avalanche"
- Common opening patterns (Fuseki) such as the "Chinese high opening"
- To recognize the basic dead shapes including the "rabbity-six"
- Basic endgame Tesuji such as the "monkey-jump"
- Strategies for playing against and with a handicap
- Race to capture prediction (time permitting)
- Fundamental strategic concepts (time permitting)
- The meaning of player ratings (such as my AGA 8kyu)
- How to play online at the Kiseido Go Server

At the end of the semester students will have the option to participate in an American Go Association Tournament in Boston. Students with prior experience are welcome. Students with their own equipment may take a credit against the expense of admission to the tournament (not otherwise covered) if they attend.

CC07, section 01

Le Vie Bohème – French Conversation

Faculty/Staff Sponsor(s): Joanne Pratt, Burt Tilley

Le groupe se rencontrera tous les jeudis a 2h30.

La description: On se rencontrera afin de discuter en français et de boire du café (ou de chocolat chaud). Les étudiants qui comprennent déjà un peu de français ne participent que cette activité. On n'aura pas besoin de béret.

CC06, section 01

Olin Dance Project

Faculty/Staff Sponsor(s): Sarah Spence

The mission of this co-curricular offering is to bring an appreciation of the world of dance to Olin College. ODP sponsors workshops in various forms of dance ranging from swing and ballroom to Irish step and jazz classes. ODP also subsidizes a trip to see a performance by a professional dance company in Boston at the end of each semester. ODP is open to any Olin student, faculty or staff member who has an interest in or a love for dance. No experience required.

CC15, section 01

Olin Gallery of Philanthropists

Faculty/Staff Sponsor(s) Mike Moody

To create a portrait gallery of American philanthropists. The inspiration for this project comes from the halls of the Center for Executive Education at Babson College, where they have many framed portraits, with biographies, of distinguished entrepreneurs. Consistent with the founding and mission of Olin, our Gallery project will build the ingredients for a gallery, at a suitable campus location, honoring philanthropists who have made a difference to American life. We will research philanthropists (both those who gave money, and those who gave time and labor), write suitable biographies, acquire permissions for suitable photographs, and plan the gallery. At some point in the future, the works will be framed and put on display on campus.

CC01, section 01

Ornithology for Engineers

Faculty/Staff Sponsor(s): Rod Crafts

Time commitment: Friday mornings from 7:30 to 9:00 a.m. during the first half of the semester (i.e., September 5, 12, 19, 26, October 3, 10), weather permitting.

As many as five students are welcome to accompany Dean Crafts on early morning bird watching walks around the Olin College property and possibly at local sanctuaries. The College owns three pair of binoculars and three field guides. So, if you or your parents have these items, please bring them to the first walk.

CC20, section 01

¡Por supuesto! - Spanish Conversation

Faculty/Staff Sponsor(s): Linda Canavan,
Pedro Perez

Vamos a reunirnos una vez cada semana. El día y la hora dependen en los horarios de los estudiantes que quieren participar; probablemente reunirnos durante el almuerzo o la tarde. Cuando reunirnos, hablaremos solo en español. Es posible también que leamos unos poemas, miremos unas películas en español, y cocinemos platos auténticos. Para tener esta actividad en su transcripción, es necesario que venga a por lo menos 60% de las reuniones.

CC21, section 01

Stammtisch - German Conversation

Faculty/Staff Sponsor(s): Joe Hunter

This co-curricular offering will meet once-weekly for German conversation over lunch. Participants must agree to speak only German at this lunch. Other faculty and staff are welcome.

CC22, section 01

The Triumph of Individual Style

Faculty/Staff Sponsor(s): Leslie Larocca

What's the difference between fashion and style? Why do some people always look so put together and others not so much? How can you achieve an appearance that is both appropriate and authentic? Does appearance matter?

These and other style-related questions, both practical and philosophical, will be addressed in this co-curricular. Meeting in five one and a half hour sessions, we may cover such topics as personal color, the body's design pattern, personality dressing, wardrobe building and shopping, and choosing accessories. Final topics will be chosen at our first meeting. Some independent work between classes may be requested.

Come explore new ways of understanding and expressing yourself. Join this fun and gentle introduction to achieving a triumph in your own personal style.

Appendix III

Fall 2003 Olin College Course Offerings – Frosh Offerings (additional AHS / Electives on next page)

UG Year	Cohort	Course #	Sect.	Course Title	Instructor(s)	Credits	Time	Location	Enroll Limits
1	C1: Mechanical Nature	FND1210	01	Physical Foundations of Engineering I	Zastavker	3.00	MW 11:20-12:50p	AC113	25
1		FND1312	01	Mathematical Foundations of Engineering I: Calculus & Differential Equations	Tilley	3.00	MW 9:45-11:15a	AC113	
1		FND1410	01	Foundations of Mechanical Design	Linder	4.00	M 6:30-9:30;TR 4:05-6:05p; F 10-12p	AC306	
1	C2: High Impact	FND1210	02	Physical Foundations of Engineering I	Holt	3.00	MW 2:00-3:30p	AC113	25
1		FND1312	02	Mathematical Foundations of Engineering I: Calculus & Differential Equations	Geddes	3.00	MW 3:35-5:05p	AC417	
1		FND1410	02	Foundations of Mechanical Design	Pratt, G; Storey	4.00	MW 9:15-11:15a; M 6:30-9:30p; F 10-12p	AC326	
1	C3: Things That Go	FND1210	03	Physical Foundations of Engineering I	Ballarini	3.00	TR 4:05-5:35p	AC318	25
1		FND1312	03	Mathematical Foundations of Engineering I: Calculus & Differential Equations	Spence	3.00	TR 2:30-4:00p	AC318	
1		FND1410	03	Foundations of Mechanical Design	Somerville	4.00	MW 9:15-11:15a; M 6:30-9:30p; F 10-12p	AC309	
1		FND1510	01	Introduction to Modeling and Control	Pratt, G; Storey; Downey	3.50	MW 11:20-12:50p	AC304	27
1		FND1510	02	Introduction to Modeling and Control	Pratt, G; Storey; Downey	3.50	MW 2:00-3:30p	AC304	27
1		FND1510	03	Introduction to Modeling and Control	Pratt, G; Storey; Downey	3.50	TR 2:30-4:00p	AC304	27
1		AHS1101	01	History and Society (Babson)	Fleischmann	3.00	TR 9:45-11:15a	AC417	12
1		AHS1101	02	History and Society (Babson)	Fleischmann	3.00	TR 11:30-1:00p	AC417	13
1		AHS1102	01	Arts and Humanities (Babson)	Tropp	3.00	TR 9:45-11:15a	AC428	12
1		AHS1102	02	Arts and Humanities (Babson)	Tropp	3.00	TR 11:30-1:00p	AC428	13

Appendix III

Fall 2003 Olin College Course Offerings – Sophomore Offerings & AHS/Electives

UG Year	Cohort	Course #	Sect.	Course Title	Instructor(s)	Credits	Time	Location	Enroll Limits
2	C1 (.5)	FND2240	1A	Principles of Materials Science with Lab	Stolk	4.00	TR 11:20-1:20p	AC413	12
2	C1 (.5)	FND2240	1B	Principles of Materials Science with Lab	Stolk	4.00	TR 2:30-4:30p	AC413	13
2	C1	FND2410	01	Foundations of Engineering Project III: Paul Revere: Tough As Nails	Stolk	2.50	WF 10:00-1:00p	AC413	25
2	C1	FND2411	01	Sophomore Design Project Preparation		0.50			
2		FND2510	01	Signals & Systems	Dabby; Crisman	3.00	TR 9:45-11:15a	AC109 / AC304	25
2	3	FND2410	02	Foundations of Engineering Project III: Software Using Images & Sound	Crisman	3.50	MF 10:00-1:00p	AC417	
2		FND2411	02	Sophomore Design Project Preparation		0.50			
2		FND2710	01	Principles of Modern Biology with Lab	Pratt, J	4.00	MW 11:20-12:50p; W 2-6p LAB	AC428 / AC406 Lab	25
2	3	FND2610	01	Foundations of Business & Entrepreneurship	Bourne, Schiffman	3.00	MW 9:45-11:15a	AC109	
2		FND2410	03	Foundations of Engineering Project III: Bio Biz	Allen	2.50	T 2:30-5:30p; F 10-1pm	AC428	
2		FND2411	03	Sophomore Design Project Preparation		0.50			
Stand Alone Sophomore Requirements:									
2		FND2510	02	Signals & Systems	Dabby; Crisman	3.00	TR 9:45-11:15a; M 4-6p LAB	AC109 / AC304	25
2		FND2240	02	Principles of Materials Science with Lab	Chachra	4.00	MW 8:10-9:40a, M 2:00-5:00p	AC409	13
2		FND2240	03	Principles of Materials Science with Lab	Chachra	4.00	MW 8:10-9:40a, W 2:00-5:00p	AC409	12
2		FND2610	02	Foundations of Business & Entrepreneurship	Bourne, Schiffman	3.00	MW 2:00-3:30p	AC109	25
2		FND2350	01	Applied Mathematical Methods	Moody	3.00	TR 8:10-9:40	AC109	25
Additional Elective / AHS offerings:									
1		ELE1050	01	Introduction to Interactive Programming: The Design of Software Systems	Stein	4.00	TR 11:20-12:50p; M lab 2-6p	AC318	25
1 or 2		AHS1122	01	The Wired Ensemble - Instruments, Voices, Players	Dabby	3.00	TR 11:20-12:50p	AC304 / AC305	12
1 or 2		AHS1130	01	Seeing and Hearing	Donis-Keller	3.00	TR 11:00-1:00p	AC313	8
2	Connect ed to Paul Revere Project	AHS2110	01	"The Stuff of History" - Ancient, Revolutionary, and Contemporary Materials Technologies	Martello	3.00	TR 4:35-6:05p	AC417	22
1 or 2		MTH2310	01	Discrete Mathematics	Spence	3.00	TR 11:20-12:50p	AC113	25

Appendix IV - Fall 2003 Olin College Schedule Grid (For better viewing, open "grid" from Blackboard Site)

	Frosh	Soph	Frosh or Soph	Academic Schedule		Fall 2003		15-Aug-03
	Mon		Tues		Wed	Thurs	Fri	
7:30								
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6:30-9:30p	Frosh Project Team Time 6:30-9:30p							