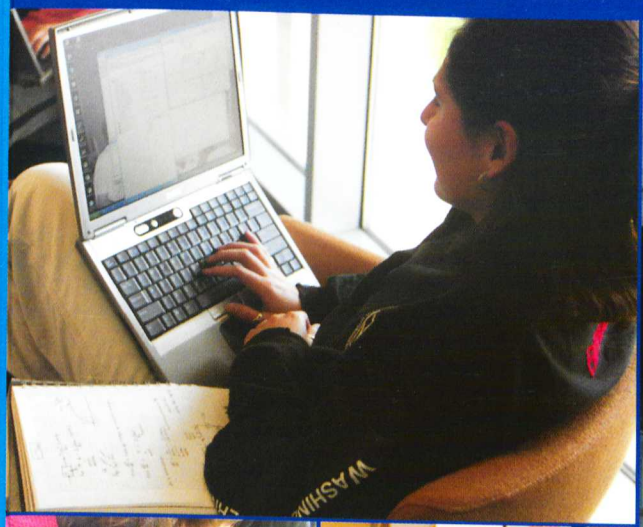
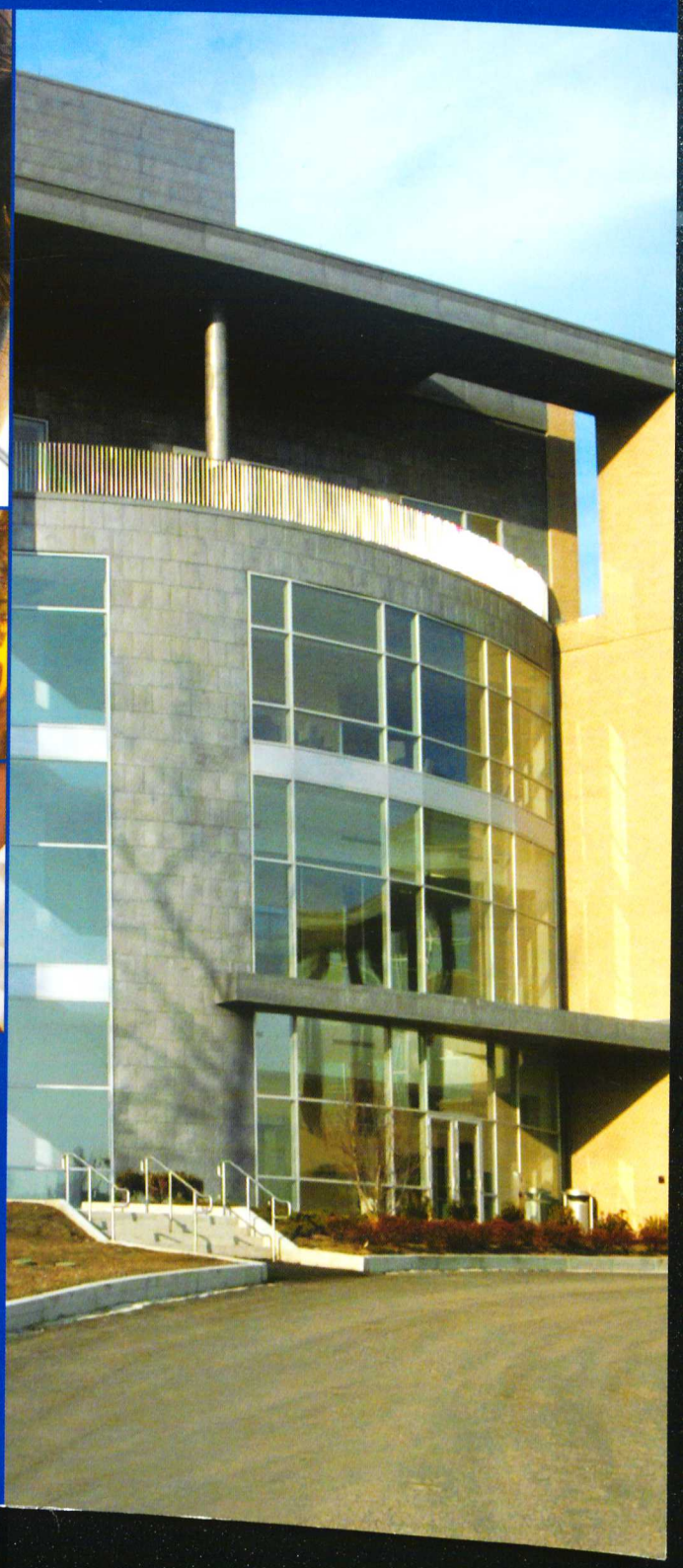
Franklin W. Olin College of Engineering

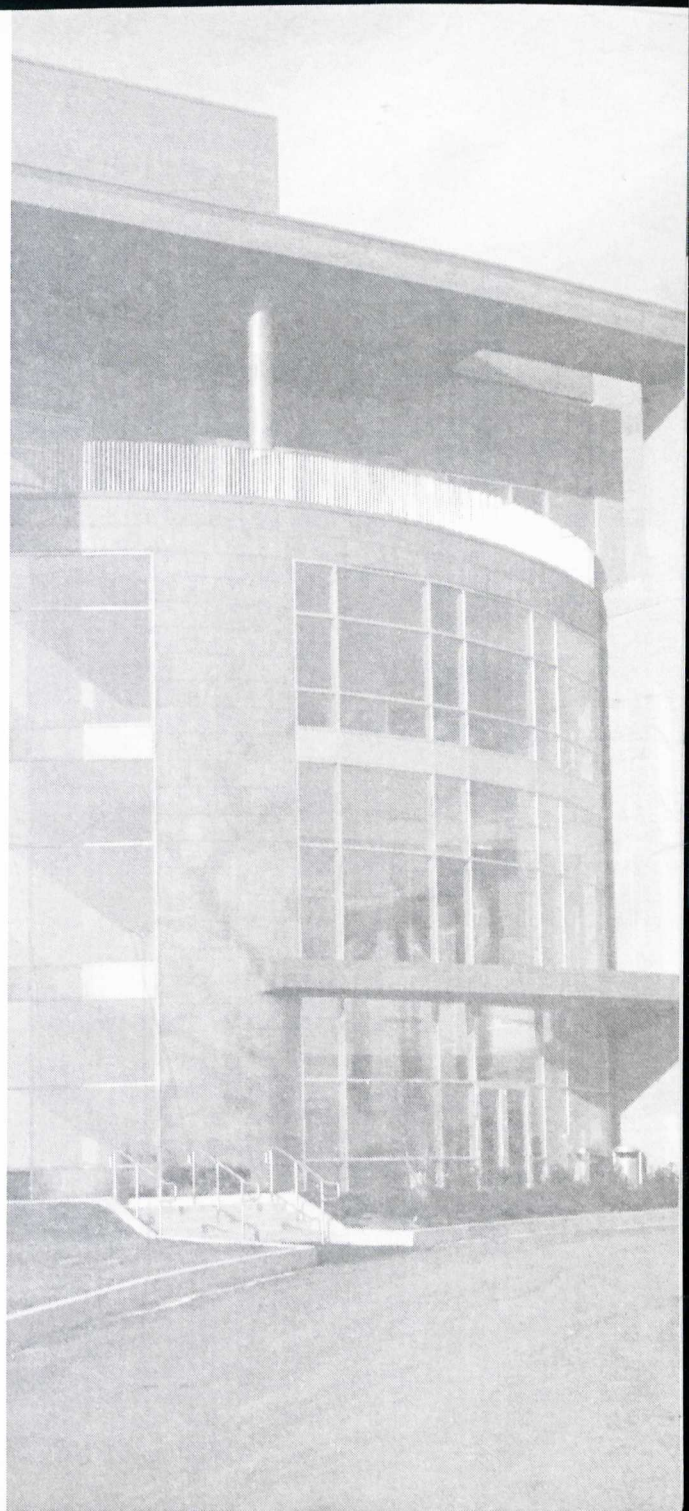




Catalog 2004–05

Franklin W. Olin College of Engineering

Catalog 2004–05



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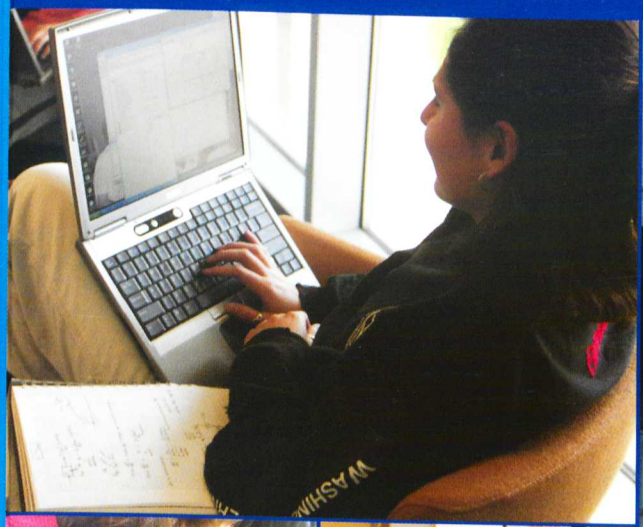

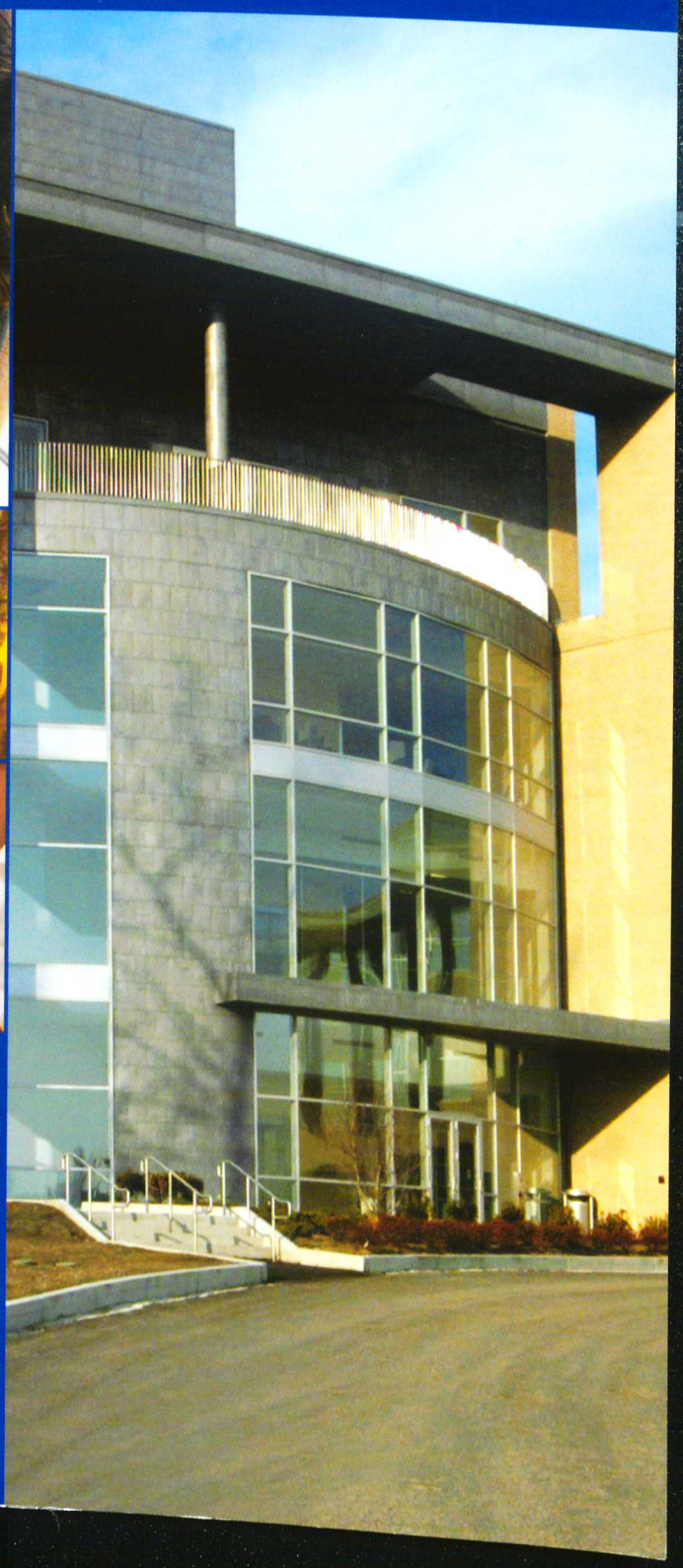

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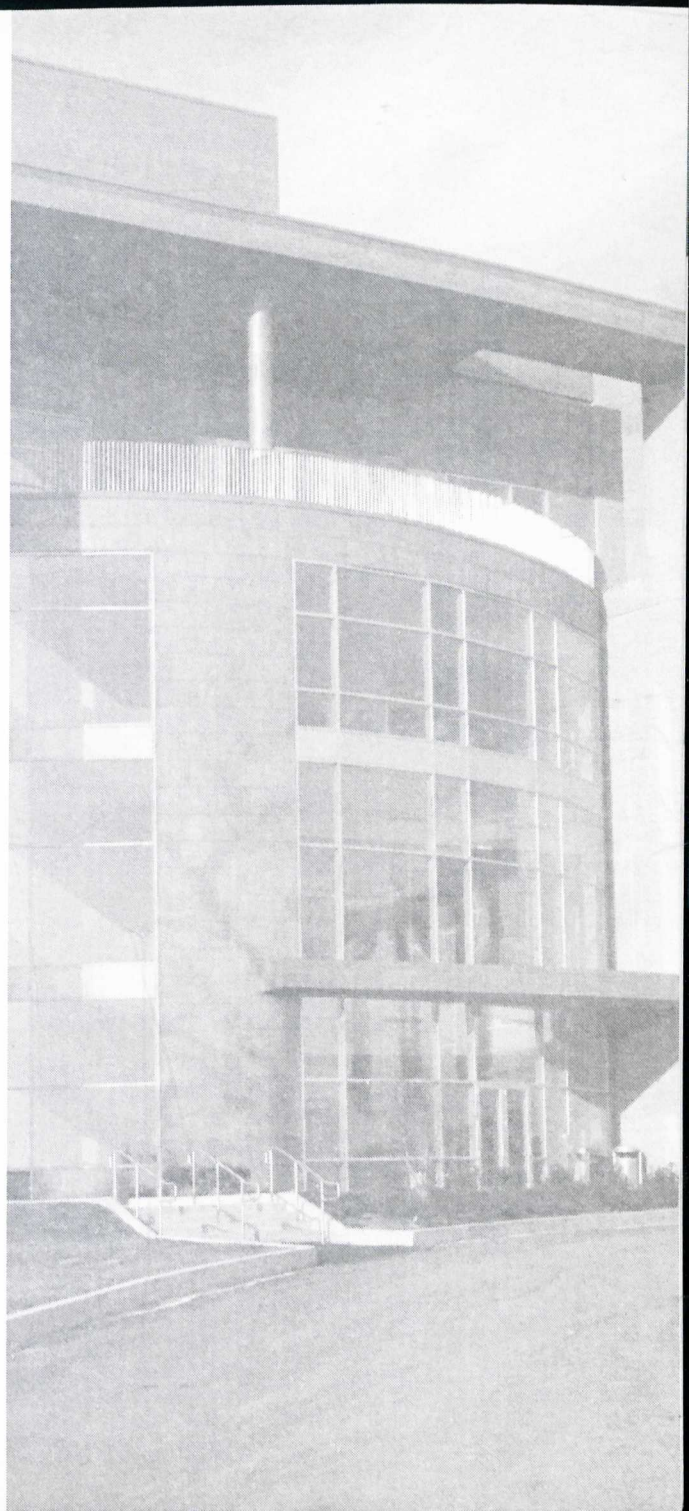
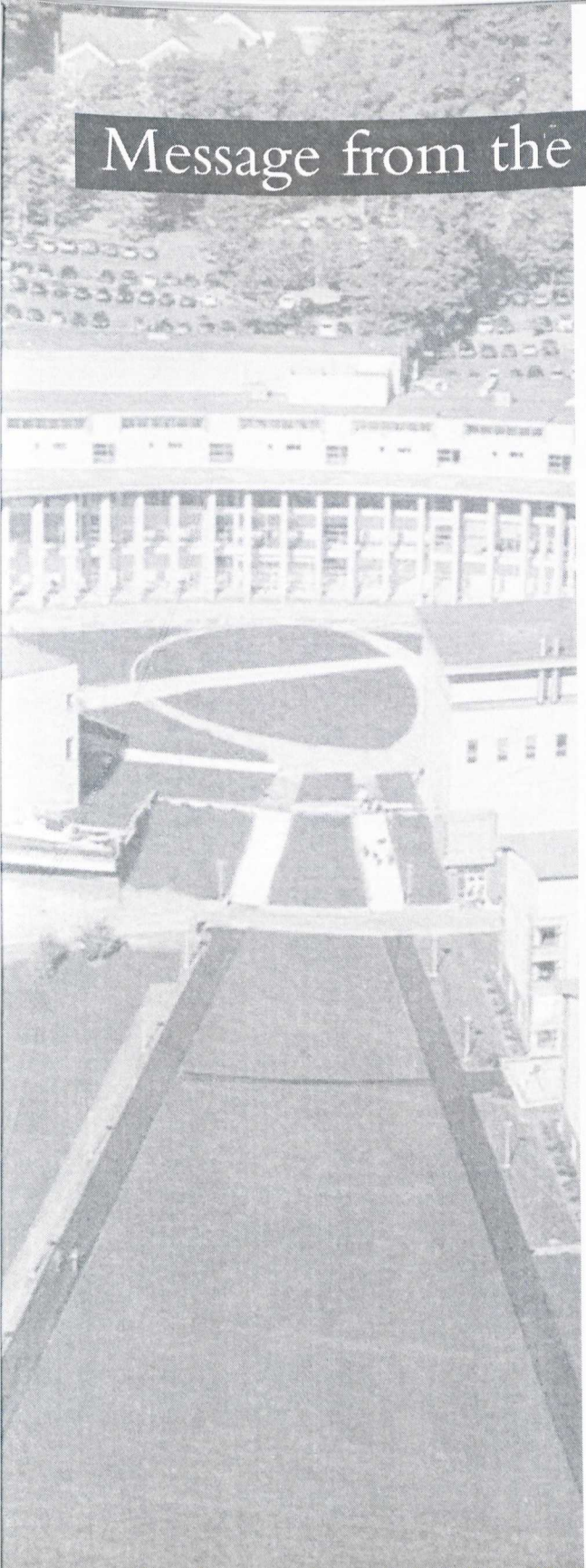


Photo: M.J. Maloney, Mark C. Flannery (aerial photos)



Message from the Provost

From its inception, Olin College has been about innovation and high standards. Our curriculum is the product of an unusual collaboration among faculty, staff, and students that is aimed at continually improving our academic program. In a sense, our curriculum will never be a finished product. We will always be enhancing it in pursuit of our mission of providing a superb engineering education to the nation's brightest and most enterprising students.

As you will see when you look through this catalog, Olin's academic program consists of more than just traditional engineering courses. Olin students often work in interdisciplinary teams in a project-based learning environment. The curriculum provides not only a first-rate engineering education, but also opportunities to explore entrepreneurship and a broad selection of the liberal arts.

Olin offers a "learning continuum" that includes co-curriculars, research, clubs, community service and "Passionate Pursuits," the study of individual intellectual interests. The learning continuum is vital for the kind of vibrant, student-centered culture we have created here at Olin — a culture that fosters hands-on learning, creativity, entrepreneurial thinking, and discovery. We invite you to explore Olin College.

Dr. David V. Kerns, Jr.
Provost

Mission Statement

Olin College prepares future leaders through an innovative engineering education that bridges science and technology, enterprise, and society. Skilled in independent learning and the art of design, our graduates will seek opportunities and take initiative to make a positive difference in the world.

Long Term Aspiration

Olin College aspires to establish and maintain a position as a national leader in the development of new and effective approaches to undergraduate engineering education. It is our intent that, as we realize our mission, the educational and student life concepts and approaches we develop will inspire change at other respected engineering schools.

Olin History

Olin, the Man

Franklin W. Olin (1860–1951) was an engineer, entrepreneur, and professional baseball player. Raised in Vermont lumber camps and lacking a high school diploma, he qualified himself for entrance to Cornell University through self-instruction. At Cornell he majored in civil engineering and was captain of the baseball team. He even played major league baseball during the summers to finance his education. He went on to found the company known today as the Olin Corporation, a Fortune 1000 company.

Olin, the Foundation: F.W. Olin Foundation

In 1938, Mr. Olin transferred a large part of this personal wealth to a private philanthropic foundation. In the 66 years since then, the New York-based Olin Foundation has awarded grants totaling nearly $800 million to construct and fully equip 78 buildings on 58 independent college campuses. Recipients include Babson, Bucknell, Carleton, Case-Western, Colgate, Cornell, DePauw, Harvey Mudd, Johns Hopkins, Marquette, Rose-Hulman Institute, Tufts, University of San Diego, University of Southern California, Vanderbilt, and Worcester Polytechnic. The Foundation's commitment in excess of $400 million to Olin College remains one of the largest such commitments in the history of American higher education.

Olin, the Vision

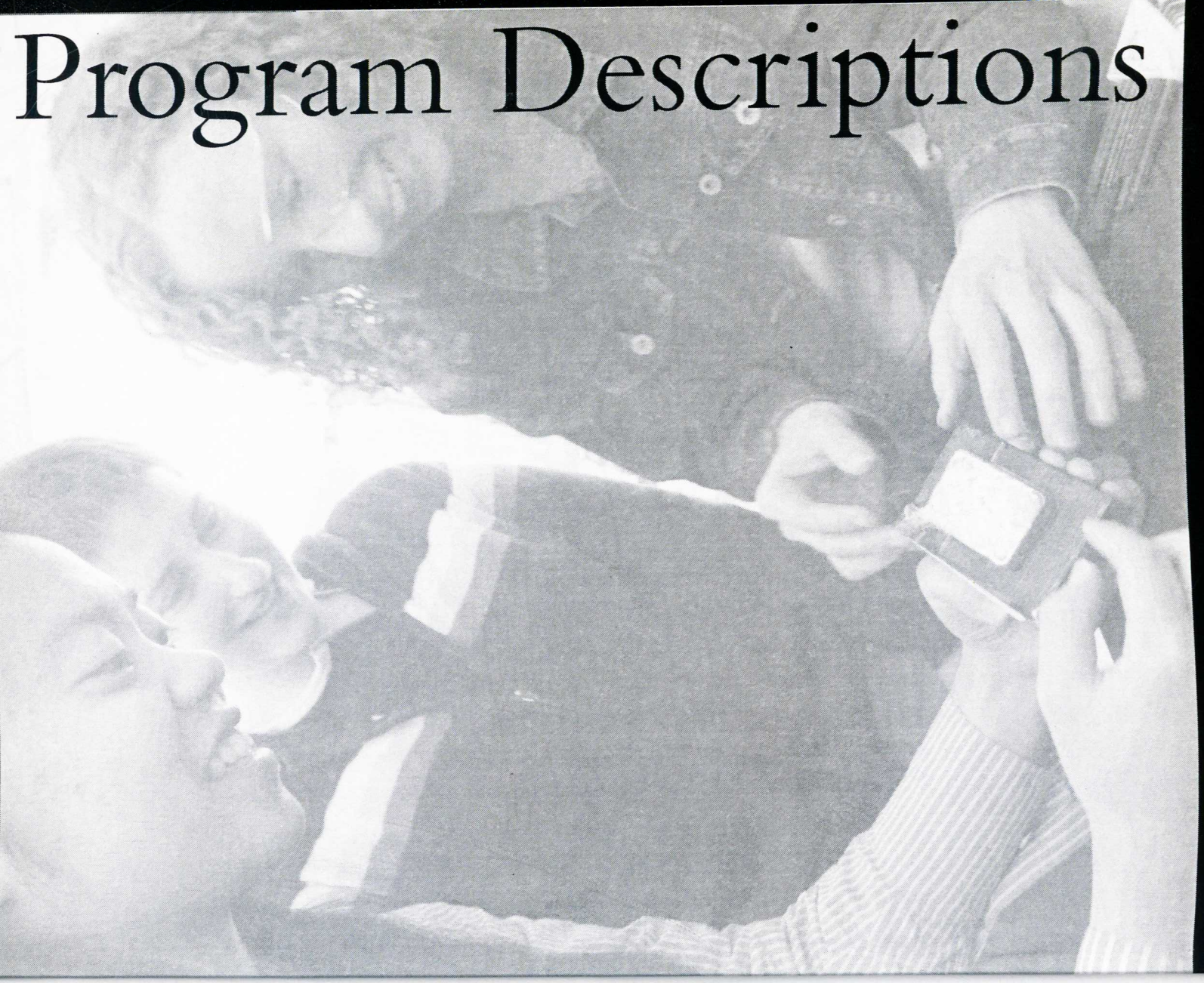
Starting in the late 1980's, the National Science Foundation and engineering community at-large started calling for reform in engineering education. In order to serve the needs of the growing global economy, it was clear that engineers needed to have business and entrepreneurship skills, creativity and an understanding of the social, political and economic contexts of engineering. The F.W. Olin Foundation decided the best way to maximize its impact was to help create a college from scratch that can address these emerging needs.

Olin, the College

The Franklin W. Olin College of Engineering received its educational charter from the Commonwealth of Massachusetts in 1997, the same year the Foundation announced its ambitious plans for the college. Planning and architectural design work for a state-of-the-art campus began almost immediately. By the end of 1999, the new institution's leadership team had been hired, and site development work commenced on 70 acres adjacent to Babson College. Olin's first faculty members joined the college by September 2000.

The college officially opened in fall 2002 to its inaugural freshman class. During the prior year, 30 student "partners" worked with Olin's world-class faculty to create and test an innovative curriculum that infused a rigorous engineering education with business and entrepreneurship as well as the arts, humanities, and social sciences. They developed a hands-on, interdisciplinary approach that better reflects actual engineering practice. State-of-the-art facilities matched with first-rate students, nationally renowned professors and unbridled enthusiasm have made Olin an exciting whirlwind of activity and excellence. Olin's commitment to continual innovation and improvement promises to keep Olin College a place where the dust will never settle.

Program Descriptions



The **mission** of Olin College is to prepare students to become leaders in tomorrow's world by providing a thorough engineering education spanning the interdependent fields of science, technology, enterprise and society. The College is also committed to providing students with skills in independent learning and the art of design, enabling graduates to seek opportunities and take initiative to make a positive difference in the world.

Engineering education at Olin is in the liberal arts tradition, with a strong emphasis on the Arts, Humanities, Social Sciences, and Entrepreneurship. Olin is committed to preparing graduates who recognize the complexity of the world, who appreciate the relationship of their work to society, and who are dedicated to creative enterprises for the good of humankind. Olin College endeavors to provide its education at little cost to the student.

Olin College strives to foster in students:

- a deep appreciation and comprehension of the principles of engineering analysis and design;
- a broad knowledge of social and humanistic contexts;
- the ability to identify opportunities, articulate a vision, and see it to fruition; and
- dedication to intellectual vitality, community involvement and lifelong personal growth.

This document represents Olin College's four-year curriculum. As continual improvement is a founding precept of Olin College, all listed policies, degree requirements, and course listings remain subject to revision.

Curriculum Fundamentals

The Olin College curriculum provides a strong foundation in engineering, mathematics, and applied science subjects and promotes development of engineering analysis, diagnosis, modeling, and problem-solving skills. In addition to student attainment of technical expertise, the Olin College curriculum emphasizes student growth in other key areas described below.

Design

Over the course of four years, students complete design projects that enable them to apply technical and non-technical knowledge and skills, develop understanding of design processes, identify and define problems, explore contextual factors that contribute to design decisions, and muster the resources necessary to realize solutions. Students undertake open-ended design problems in many courses, but design learning is emphasized and explicitly developed through a sequence of required design courses. All students complete Introduction to Design, User-Oriented Collaborative Design, and a design depth course in an area of interest.

A student's final year at Olin centers on an ambitious year-long Capstone Project. A typical Capstone Project is undertaken by a team of three to six students and includes an external partner such as a company or professor from another institution for the purposes of ad-vising and assisting in assessment. The Capstone Project prepares students for life and work in their chosen profession.

Arts, Humanities, and Social Sciences (AHS)

Olin students study the AHS in order to complete their liberal arts education, develop broad knowledge of social, cultural, and humanistic contexts, and foster their ability to apply contextual thinking in the study of engineering and other disciplines. A firm foundation in AHS content, skills, and attitudes is an essential aspect of an engineering education. Students select AHS courses from offerings at Olin and neighboring institutions (Wellesley, Brandeis and Babson) in order to satisfy their individual needs and interests. All students complete a

"foundation" AHS course that offers an overview of an AHS discipline, writing instruction and practice, an introduction to contextual and critical thinking, and integration of the content and perspectives of different disciplines. In addition, students can design a sequence of AHS courses to provide greater depth in a single AHS field and may also elect to complete additional AHS courses to explore an area of interest. The AHS experience culminates in an AHS or Entrepreneurship Capstone, requiring students to integrate acquired skills and knowledge in an interdisciplinary project.

The Olin Curriculum

The Olin College curriculum provides for considerable flexibility and student choice about how to meet requirements. This chart is an example of one way a student might progress through the four-year program.

1ST YEAR

1st Semester

ENGINEERING Engineering of Compartment Systems	MATH Calculus	SCIENCE Physics: Mechanics	ENGINEERING Design Nature	AHS Arts, Humanities or Social Science Foundation Course	= 16 credits

INTEGRATED COURSE BLOCK (ICB)

2nd Semester

ENGINEERING Engineering of Spatially Distributed Systems	MATH Vector Calculus	SCIENCE Physics: Electromagnetism and Waves	SCIENCE e.g., Biology	EI FOUNDATION Foundations of Business and Entrepreneur-ship	= 16 credits

INTEGRATED COURSE BLOCK (ICB)

2ND YEAR

1st Semester

MATH Linear Algebra Probability and Statistics	ENGINEERING Engineering Design	SCIENCE e.g., Chemistry OR Math and Science	AHS Arts, Humanities or Social Science Foundation Course	= 16 credits

2nd Semester

MATH MATH or SCIENCE	ENGINEERING Engineering Core	ENGINEERING Engineering Core	ENGINEERING Design Core: User-Oriented Collaborative Design	= 16 credits

3RD YEAR

1st Semester	GENERAL ELECTIVE	ENGINEERING Engineering Core	ENGINEERING Engineering Core	AHS Humanities or Social Science Course	= 16 credits
2nd Semester	ELECTIVE	ENGINEERING Engineering Depth	ELECTIVE	AHS/EI Humanities or Social Science Course	= 16 credits

4TH YEAR

1st Semester	SCIENCE or MATH MATH or SCIENCE	ENGINEERING Design Depth	ENGINEERING Capstone Project	AHS/EI Humanities or Social Science	= 16 credits
2nd Semester	ENGINEERING Technical Self-Study	ENGINEERING Technical Elective	ENGINEERING Capstone Project	AHS/EI Capstone Project	= 16 credits

Entrepreneurship (E!) and Opportunity Assessment

Entrepreneurship is the process of identifying opportunities, fulfilling human needs and creating value. An understanding of the knowledge, skills and behaviors required for success in entrepreneurship will position students to become better engineers and to make more of a difference in the world. To this end, Olin's curriculum supports the learning of entrepreneurship, broadly defined. Olin graduates will demonstrate a capacity to identify social, technical, and economic opportunities, to predict challenges and costs associated with the pursuit of opportunities, and to make decisions about which opportunities are most worthy of pursuit.

Olin students are required to complete a Foundations of Business and Entrepreneurship course and the entrepreneurial components of

design courses. Students have ample opportunity to enroll in courses relating to business at Babson College, and interested students may design a sequence of courses to explore an entrepreneurship discipline in depth.

Many students will also explore entrepreneurship and develop opportunity assessment abilities through their capstone design experience and via out-of-class activities such as student club organization, community service, and passionate pursuits.

Communication

Throughout the curriculum, Olin College integrates the instruction and practice of communication through written, spoken, visual and graphical means. Thus, it is not only within the Arts, Humanities, and Social Sciences that an Olin student can expect communication-intensive course work, but within the major or field of concentration as well. The Olin curriculum reflects the College's commitment to the engineer as a highly skilled communicator.

The Olin Student Experience

Olin College's progressive educational perspective provides a distinctive student experience designed to foster student engagement and development. Some of the key features and interesting aspects of the Olin College experience are described in the following paragraphs.

Multidisciplinary Integration

Olin experiences are designed to build connections between fundamental science, mathematics, and engineering; between different fields of engineering; between the arts, humanities and social sciences and technical disciplines; and between business, entrepreneurship, and technology. As a result, the Olin curriculum is conceived and taught in a highly interdisciplinary way.

In the first year, students learn in Integrated Course Blocks (ICBs) designed to take advantage of the synergies that exist among mathematics, science, and engineering topics. First year ICBs include coordinated, hands-on modeling projects that provide opportunities for students to apply fundamental math and science to real engineering problems and that further elucidate important linkages among disciplinary topics.

In addition to the first-year ICBs, Olin builds multidisciplinary connections through tightly coupled, faculty team-taught courses such as the Paul Revere: Tough as Nails course block that links history of technology with materials science. Many other courses feature teaching or visits from faculty members who attempt to share different perspectives and thereby help students understand the broader context and implications of their work.

Hands-On Learning

Olin has a strong commitment to incorporating hands-on educational experiences through lab and project work in many courses. From the outset of the curriculum, students build technical knowledge and develop practical skills by analyzing, designing, or fabricating engineering systems. First year ICBs provide experiences in modeling, simulation, and analysis of engineering systems. Science courses offer opportunities for experimental design and the use of modern instrumentation and testing techniques. The design stream offers opportunities for students to study design by actually designing, prototyping, and testing solutions to authentic problems.

Open-Ended Projects

Throughout the curriculum, Olin students gradually build competency in solving open-ended problems. Open-ended projects are found in all four years of the curriculum, and project experiences gradually increase in scale, complexity, and realism as students develop their knowledge and skills. In open-ended projects,

student teams identify and define problems, assess opportunities, apply technical knowledge, demonstrate understanding of contextual factors, muster appropriate resources to solve problems, and apply skills such as teamwork, communication, and idea generation. Olin's open-ended project emphasis culminates in an ambitious two-semester capstone project that engages student teams in significant design problems with realistic constraints.

Independent Study and Research

In many of our courses, students develop skills in independent, life-long learning through completion of self-guided studies of topics. Some students choose to enhance their educational experience through participation in independent study and research activities. In independent study activities, students design and implement a learning and assessment plan that enables self-guided exploration of advanced topics in engineering, science, mathematics, or arts, humanities, social sciences, or business. The Olin self-directed learning experiences culminate in the Independent Study Technical Elective, a course that requires students to select a technical topic, learn it independently, and demonstrate their ability in the chosen topic. In addition to independent study activities, Olin offers many opportunities for faculty-directed undergraduate research, including semester-long courses during the academic year and full-time participation in summer projects. Students are encouraged to become involved in research early in their undergraduate career, and students may participate in research as early as their first year.

Student-Designed Options

Olin students may design or customize many aspects of their educational experience. Many Olin courses include student-designed components such as projects, self-study modules, and selection of emphasis areas. More substantial student-designed learning may be found in the following activities:

- **Away Experience** The Olin curriculum is designed so that students who wish to study for a semester away from the College can do so. The away experience may take several forms including experience abroad or at another U.S. institution in a new cultural setting. The away experience can occur during a semester or a combination of a semester and summer. Away experiences must be approved by the Standing Committee on Study Away.
- **Cross Registration** Most students choose to complete some degree requirements at Olin's neighboring institutions. Cross registration agreements are in place at Wellesley, Babson, and Brandeis, enabling Olin students to benefit from other institutions' expertise in the arts, humanities, social sciences, natural sciences, and business topics.
- **Engineering and AHS/Entrepreneurship Capstones** The Engineering and AHS/Entrepreneurship capstones have been described in earlier sections. Within the constraints faced by authentic engineering projects, students have some latitude in designing project goals, methods, and deliverables.
- **Passionate Pursuits** Students are encouraged to undertake non-degree credit activities in the form of Passionate Pursuits. These programs seek to recognize the diversity of technical, artistic, entrepreneurial, humanist, and philanthropic interests that students bring to the College. The College encourages the pursuit of such activities for both personal and professional development. Olin supports these endeavors by providing resources as well as recognition on the transcript.

Competency Assessment

In addition to course-based graduation requirements, Olin develops and assesses student growth in a number of overarching competency areas. Through Olin's competency learning and assessment system, students demonstrate skill in essential areas such as communication,

qualitative understanding and quantitative analysis, teamwork, contextual thinking, opportunity assessment, and synthesis and design. Competency development is tracked in electronic student portfolios and evaluated through a combination of course assignments, competency exams, self-assessments, and periodic portfolio reviews.

Feedback

Olin College has fostered a culture of continual feedback and improvement. Olin's curriculum, courses, and extracurricular activities are shaped by student input and feedback. Faculty solicit student feedback and routinely adjust course direction and areas of emphasis to better address student educational needs. Students are expected to be active learners and participants in the process of continual improvement.

General Graduation Requirements

Olin College measures progress towards an undergraduate degree in terms of degree credits, which are obtained via the satisfactory completion of courses and approved independent study activities.

A degree credit corresponds to an average of three hours of student work each week throughout an academic semester. Therefore, a four-credit course (the most common course size at Olin) would require students, on average, to spend twelve hours each week attending classes, completing homework, participating in laboratory activities, and fulfilling all other course responsibilities. Students must register for at least 12 credits and no more than 20 credits each semester, and students typically register for approximately 16 credits per semester. Note that first-year students are limited to 16 credits in the first semester.

All Olin students must satisfy two types of requirements for graduation: credit requirements that specify a minimum number of credits that must be completed in certain areas, and course requirements that specify which courses must be completed for a particular degree or concentration

Credit Requirements

A minimum of 120 credits are required to graduate, distributed among the following areas of study:

Area	Required Credits
Engineering	50
Math and Science	30
AHS and Entrepreneurship	28
Restricted and Unrestricted Electives	12

Students may register for additional courses that push their credit total above 120 by the time of graduation. In this case, all extra credits are completely unrestricted and the student may take courses in areas that interest them, or can complete non-degree credit activities (i.e., academic activities that do not carry grades or impact a student's GPA) such as research or passionate pursuits.

The course catalog lists, for each course, the number of credits earned in the areas of Mathematics, Science, Engineering, AHS, or Entrepreneurship. Some courses distribute their credits across more than one area. In some cases, students may satisfy these requirements by taking a pre-approved course at a different institution or by demonstrating mastery of course material via an examination. Students wishing to pursue these strategies must receive prior approval by contacting the Academic Recommendations Board (ARB), the course instructor, and their academic adviser to determine if it is feasible.

General Course Requirements

All Olin students, regardless of degree or concentration, must complete the following courses. Legacy course numbers are indicated in *italics*.

Integrated Course Blocks (ICBs)

Title	Number	Notes
Integrated Course Block 1 (ICB1)		
• Calculus	MTH 1110 *(FND 1310)*	
• Physics: Mechanics	SCI 1110 *(FND 1210)*	
• Engineering of Compartment Systems	ENGR 1110 *(FND 1510)*	
Integrated Course Block 2 (ICB2)		
• Vector Calculus	MTH 1120 *(1/2 of FND 1320)*	
• Physics: Electromagnetism and Waves	SCI 1120 *(FND 1220)*	
• Engineering of Spatially Distributed Systems	ENGR 1120 *(FND 1420)*	

Math and Science (in addition to ICBs)

Title	Number	Notes
Linear Algebra	MTH 2120 or 1/2 of MTH 2150 *(1/2 of FND 1320)*	
Probability and Statistics	MTH 2130 or 1/2 of MTH 2150 *(FND 2350)*	
Foundations of Modern Biology (with laboratory)	SCI 1210 *(FND 2710)*	
Introduction to Chemistry **OR** Materials Science and Solid State Chemistry (with laboratory) **OR** Organic Chemistry (with laboratory)	SCI 1310 SCI 1410 *(FND 2240)* SCI 2320 *(ELE 2715)*	
Math or Science Elective		Students must select at least six credits of additional Math or Science coursework. Choice may be restricted by degree or concentration.

Engineering (in addition to ICBs)

Title	Number	Notes
Principles of Engineering	ENGR 2210 *(FND 2410)*	

Design

Title	Number	Notes
Design Nature	ENGR 1200 *(FND 1410)*	
User-Oriented Collaborative Design	ENGR 2250 *(FND 2490)*	
Design Depth Course	TBA	Upper-level, four credit design course in an area of interest.

AHS and Entrepreneurship

Title	Number	Notes
AHS Foundation. One of: • History of Technology: Environment, Culture and Government • History and Society • Arts and Humanities • The Wired Ensemble—Instruments, Voices, Players • Seeing and Hearing: Communicating with Photographs, Video and Sound • What is "I"?	 AHSE 1100 *(AHS 1110)* AHSE 1101 *(AHS 1101)* AHSE 1102 *(AHS 1102)* AHSE 1122 *(AHS 1122)* AHSE 1130 *(AHS 1130)* AHSE 1150 *(AHS 1150)*	All AHS foundation courses offer: • an introduction and overview of an AHS discipline • writing instruction and practice • an introduction to contextual and critical thinking, and • examples of how one might integrate the content and perspectives of different disciplines.
Foundations of Business and Entrepreneurship	AHSE 1500 *(FND 2610)*	
AHS or Entrepreneurship Depth		Students, in consultation with their academic adviser, must design a sequence of at least eight credits of courses in an approved AHS or Entrepreneurship discipline.
AHS or Entrepreneurship Electives		Students must complete at least eight additional credits of AHS or Entrepreneurship courses. Note that students who pursue an Entrepreneurship depth sequence must complete at least eight credits of AHS electives.
AHS or Entrepreneurship Capstone		Students must design and complete an authentic, four credit AHS or Entrepreneurship project in their area of AHS or Entrepreneurship depth.

Olin students are allowed to cross-register for Babson, Brandeis, or Wellesley courses to satisfy AHS or Entrepreneurship depth and elective requirements.

Electives

Title	Number	Notes
Self-Study Technical Elective		Four credit activity that will typically take place in a student's third or fourth year and offers an opportunity to pursue advanced technical topics in an independent manner.
Technical Elective		Four credits that may be satisfied by any Engineering, Mathematics, or Science course.
General Elective		Four credits that may be satisfied by any course in any academic discipline.

Degree Requirements

Olin College offers three degrees: Electrical and Computer Engineering (ECE), Mechanical Engineering (ME), and Engineering (E). Students who select the "Engineering" degree may then select one of the following concentrations: BioEngineering (E:BE), Computing (E:C), Materials Science (E:MS), or Systems Design (E:SYS). Alternatively, Engineering degree students may design a concentration by working with relevant members of the faculty and receiving prior approval from the ARB.

Degrees and concentrations determine the courses students may use to fulfill certain Engineering and Mathematics requirements:

- The Mathematics requirement is a six-credit set of math courses that will aid the student's progress towards degree requirements. Some majors specify these courses, while others offer more flexibility.
- The Engineering Core requirement is a 16-credit sequence of courses that constitutes fundamental coursework in the major.
- The Engineering Elective requirement is an additional four credits of coursework in the student's major.

These requirements are outlined for each degree in the sections below.

Electrical and Computer Engineering (ECE)

Electrical and Computer Engineering is a degree program designed to meet ABET Program Criteria in electrical and computer engineering. Olin's ECE degree focuses on the devices and structure of computing and communications systems, with an emphasis on hardware design.

Requirement	Course Name	Number	
Math	Differential Equations	MTH 2140	*(FND 1311)*
	Discrete Mathematics	MTH 2110	*(MTH 2310)*
ECE Core	Signals and Systems	ENGR 2410	*(FND 2510)*
	Computer Architecture	ENGR 3410	
	Software Design	ENGR 2510	*(ENG 1510; ELE 1050)*
	Analog and Digital Communications	ENGR 3420	
ECE Elective	Digital VLSI	ENGR 3430	
	OR Modern Sensors	ENGR 3440	
	OR Semiconductor Devices	ENGR 3450	
	OR other approved course		

Mechanical Engineering (ME)

Mechanical Engineering is a degree program designed to meet ABET Program Criteria in Mechanical Engineering. The core ME requirements emphasize the design of mechanical and thermal/fluid systems.

Requirement	Course Name	Number	
Math	Differential Equations	MTH 2140	*(FND 1311)*
	Partial Differential Equations or other approved math course	MTH 3120	
ME Core	Transport Phenomena	ENGR 3310	
	Mechanics of Solids and Structures	ENGR 3320	*(MEC 1915)*
	Mechanical Design	ENGR 3330	
	Dynamics (2 credits)	ENGR 3340	
	Thermodynamics (2 credits)	ENGR 3350	*(MEC 2910)*
ME Elective	Controls	ENGR 3370	
	OR Manufacturing	ENGR 3380	
	OR Intermediate Fluid Dynamics	ENGR 3360	
	OR Mechatronics	ENGR 3390	
	OR other approved course		

Engineering: BioEngineering (E:BE)

BioEngineering is an interdisciplinary concentration rooted in physics, mathematics, chemistry, and biology. The E:BE concentration prepares students to approach problems important to biology, medical research, and clinical studies. The E:BE concentration also provides some of the depth and breadth required for students interested in attending medical school.

At present, the BioEngineering concentration is being constructed by the BioEngineering program group. A description of the program will be available in the Fall of 2004. Students interested in BioEngineering before then should contact Prof. Debbie Chachra. Those interested in pursuing post-graduate study in the health sciences should contact Dr. Janey Pratt.

Engineering: Computing (E:C)

The Computing concentration integrates the study of computer science and software engineering within a broad interdisciplinary context. The E:C concentration offers significant flexibility, particularly with courses taken off-campus. E:C students work closely with the Computing faculty at Olin to define individually customized programs of studies that meet Olin's credit requirements.

Requirement	Course Name	Number	
Math	Discrete Mathematics	MTH 2110	*(MTH 2310)*
E:C Core	Software Design	ENGR 2510	*(ENG 1510; ELE 1050)*
	Twelve additional approved credits in computing, to include at least four units of computing systems and at least four units of principles of computing, broadly defined.		
E:C Elective	Approved four-credit computing course		

Computing systems courses include ENGR 3525 Software Systems, ENGR 3530 Synchronization (2 credits); other courses, including databases and networks, may also be appropriate.

Principles of computing courses include ENGR 3520 Foundations of Computer Science as well as approved courses in theoretical computer science, algorithms, artificial intelligence, computer graphics, and programming languages.

Additional computing offerings may be drawn from approved courses or may include Olin courses such as ENGR 3410 Computer Architecture or ENGR 3520a Foundations of Computer Science Project or advanced computer science courses offered at cross-registered or study away institutions.

All E:C programs of study should be consistent with the student's educational goals and must contain sufficient depth, breadth, coherence, and rigor. All programs of study must receive prior approval by E:C faculty.

Engineering: Materials Science (E:MS)

Materials Science is an inherently interdisciplinary field with a strong presence throughout most engineering and science disciplines. Olin's materials science concentration provides an integrated approach to materials, merging a variety of engineering design principles with concepts from solid-state physics and applied chemistry. Students who complete the E:MS concentration will achieve an understanding of structure-property-processing-performance relationships in materials, the ability to apply advanced scientific and engineering principles to materials systems, and the skills to synthesize appropriate technical and contextual information to solve materials selection and design problems.

Requirement	Course Name	Number	
Math	Differential Equations	MTH 2140	*(FND 1311)*
E:MS Core	Sixteen credits of engineering subjects appropriate to the program of study, with a minimum of eight credits in materials science subjects.		
E:MS Elective	Four credits of advanced materials science and engineering topics.		

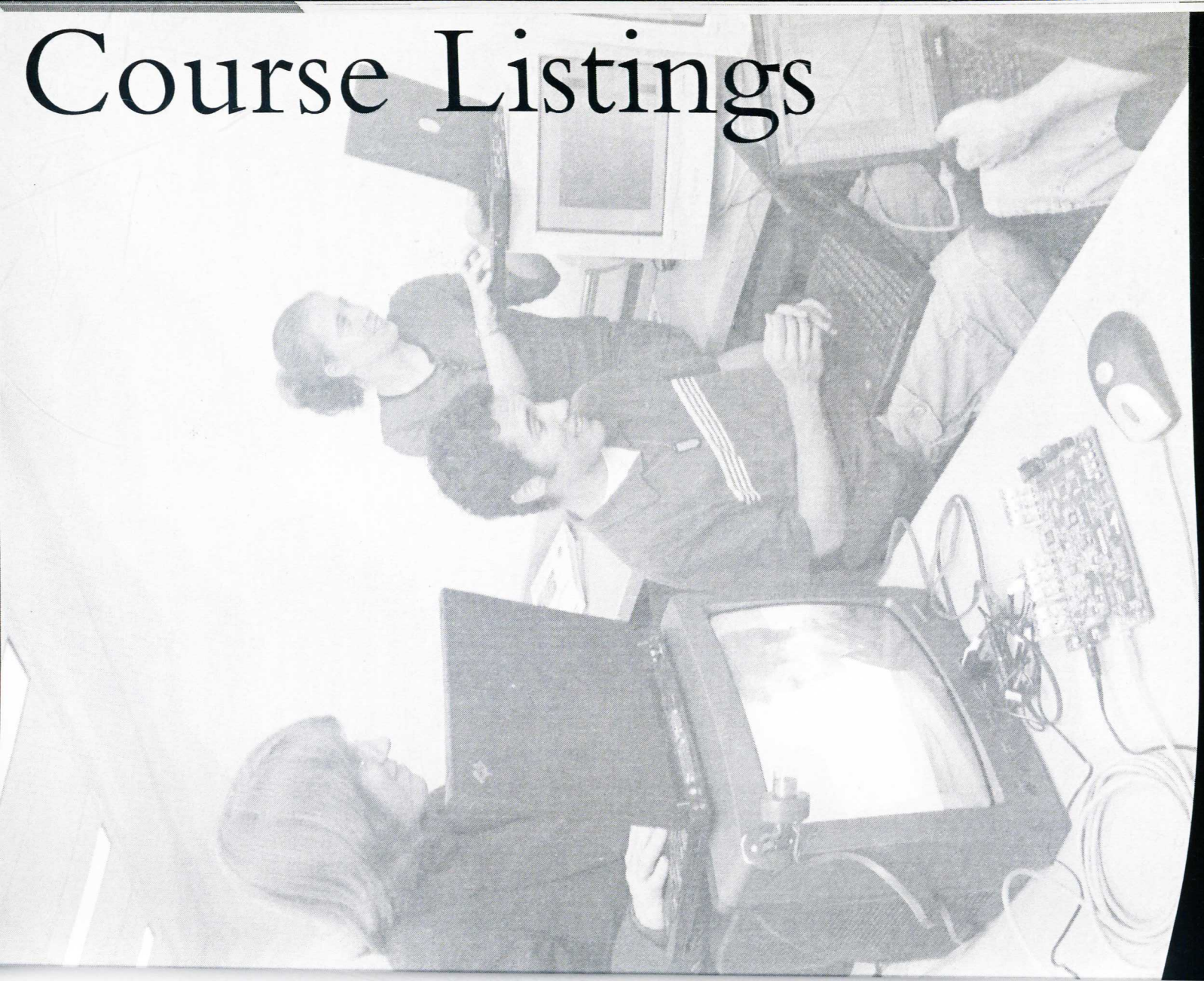
Students wishing to pursue the materials science concentration within the Engineering major must develop a specific program of study in consultation with materials science and applied chemistry faculty. Such programs may emphasize different aspects of materials science, such as structural materials, solid state properties of materials, processing and manufacturing, or applied chemistry. All materials science programs of study should be consistent with the student's educational goals and must contain sufficient depth, breadth, coherence, and rigor. All programs of study must receive prior approval by materials science and applied chemistry faculty, be sufficiently supported by the College's resources (including all BBW schools), and be endorsed by the student's faculty adviser.

Engineering: Systems Design (E:SYS)

The Systems Design concentration focuses on the design of products which integrate significant technology from multiple disciplines. Such products are particularly hard to create because designers tend to have specialized, rather than broad, knowledge of disciplines. The E:SYS concentration trains students to lead multidisciplinary design teams and emerge with successful products.

Requirement	Course Name	Number	
Math Elective	Differential Equations	MTH 2140	*(FND 1311)*
E:SYS Core	Two courses from the ECE specialization core Two courses from the ME specialization core		
E:SYS Elective	Systems Design	TBA	

Course Listings



Offerings

This catalog represents the best information available at the time of its publication. Information in this catalog is subject to change.

Course Numbering Nomenclature

Course numbers are composed of an alpha prefix and a numeric suffix. The alpha prefix is indicates the primary area of the course, according to the following table. Note that some courses earn credit for multiple areas (see table below).

Alpha Prefix	Primary Area
AHSE	AHS and Entrepreneurship
ENGR	Engineering
MTH	Mathematics
SCI	Science

The first digit of the numeric suffix indicates the nominal level of a course according to the following table.

Numeric Suffix	Level
1XXX	Introductory
2XXX	Intermediate
3XXX	
4XXX	Advanced

Credit Nomenclature

Credits for each course at Olin are described by four numbers, indicating the number of credits earned in each area of study by students successfully completing the course. The four areas are as follows:

(Math and Science) – (Engineering) – (AHS) – (Entrepreneurship)

For example, the AHSE 1100 History of Technology: Environment, Culture, and Government course is described as a 0-0-4-0 credit course, so students who complete the course earn four AHS credits.

Hours/Week Nomenclature

To better allow teaching staff, facilities schedulers, and students to manage the time requirements of every course, the number of expected hours per week is indicated by a three part number, as follows:

(Contact) – (Non-Contact) – (Preparation)

- **Contact** The first number indicates approximately the number of hours per week teaching staff and students will spend together in scheduled school facilities.
- **Non-Contact** The second number indicates approximately the number of hours students will spend each week working on their own in scheduled school facilities.
- **Preparation** The third number indicates approximately the number of hours per week a well-prepared student with good study habits should expect to spend studying and completing homework, reading assignments, projects, etc.

For example, the AHSE 1100 History of Technology: Environment, Culture, and Government course is described as a 4-0-8 course, so students in the course can expect to spend four hours in class with an instructor, and approximately eight hours outside of class completing course-related assignments.

Pre-requisites and Co-requisites

Pre-requisites and co-requisites may occasionally be waived with permission of the course instructor.

Course Summary

Number	Name	Pre-requisites	Co-requisites	Instructor	Credits[1]	Hours[2]	Offered
AHSE 1100	History of Technology: Environment, Culture and Government			Martello	0-0-4-0	4-0-8	Fall 04
AHSE 1101	History and Society: Bodies in Motion: Meaning of Migration in the 20th Century United States			Bruyneel	0-0-3-0	3-0-6	Fall 04
AHSE 1102	Arts and Humanities: Challenging Boundaries: The Self Explored in Art and Philosophy 1800-2000			Levinson	0-0-3-0	3-0-6	Fall 04
AHSE 1122	The Wired Ensemble — Instruments, Voices, Players			Dabby	0-0-4-0	4-0-8	Fall 04
AHSE 1130	Seeing and Hearing: Communicating with Photographs, Video and Sound			Donis-Keller	0-0-4-0	4-0-8	Fall 04
AHSE 1150	What is "I"?			Stein	0-0-4-0	4-0-8	Spr 05
AHSE 1500	Foundation of Business and Entrepreneurship			Bourne, Schiffman	0-0-0-4	4-0-8	Fall 04, Spr 05
AHSE 2110	The Stuff of History: Materials and Culture in Ancient, Revolutionary and Contemporary Times		SCI 1410 Section 2	Martello	0-0-4-0	4-0-8	Fall 04
AHSE 2120	Heroes for the Renaissance Engineer: Leonardo, Nabokov, Bach, Borodin			Dabby	0-0-4-0	4-0-8	Spr 05
AHSE 2130	The Intersection of Art and Science			Donis-Keller	0-0-4-0	4-0-8	Fall 04
AHSE 3500	Entrepreneurship: Real-Time Case Study	AHSE 1500 *(FND 2610)*		Bourne, Schiffman	0-0-0-4	4-0-8	Fall 04
ENGR 1110	Engineering of Compartment Systems		SCI 1110 and MTH 1110	G. Pratt, Storey	0-3-0-0	3-3-3	Fall 04
ENGR 1120	Engineering of Spatially Distributed Systems		SCI 1120 and MTH 1120	G. Pratt, Storey	0-3-0-0	3-3-3	Spr 05
ENGR 1200	Design Nature			Linder, Staff	0-4-0-0	6-4-2	Fall 04
ENGR 1510	Introductory Programming			Downey	0-2-0-0	2-1-1	Fall 04
ENGR 2210	Principles of Engineering	ICB2		Minch, Stolk	0-4-0-0	4-4-4	Fall 04, Spr 05

[1] Credit nomenclature: (Math and Science) – (Engineering) – (AHS) – (Entrepreneurship)

[2] Hours/week nomenclature: (Contact) – (Non-Contact) – (Preparation)

Number	Name	Pre-requisites	Co-requisites	Instructor	Credits[1]	Hours[2]	Offered
ENGR 2250	User Oriented Collaborative Design			Linder	0-4-0-0	4-4-4	Spr 05
ENGR 2410	Signals and Systems			Dabby	0-4-0-0	4-0-8	Spr 05
ENGR 2510	Software Design			Downey, Stein	0-4-0-0	5-0-7 (F) 6-0-6 (S)	Fall 04, Spr 05
ENGR 3310	Transport Phenomena	ICB2		Townsend	0-4-0-0	4-0-8	Fall 04, Spr 05
ENGR 3320	Mechanics of Solids and Structures	ICB2	ENGR 3330	Storey, Miller	0-4-0-0	4-0-8	Fall 04, Spr 05
ENGR 3330	Mechanical Design	ICB2	ENGR 3320	Barrett	0-4-0-0	4-4-4	Fall 04, Spr 05
ENGR 3340	Dynamics & Controls			TBA	0-2-0-0	2-2-2	Spr 05
ENGR 3350	Thermodynamics			Storey, Townsend	0-2-0-0	2-0-4	Spr 05
ENGR 3360	Intermediate Fluid Dynamics			TBA	0-4-0-0	4-0-8	TBA
ENGR 3370	Controls			TBA	0-4-0-0	4-0-8	TBA
ENGR 3380	Manufacturing			TBA	0-4-0-0	4-0-8	TBA
ENGR 3390	Mechatronics			TBA	0-4-0-0	4-0-8	TBA
ENGR 3410	Computer Architecture	ICB2		Chang	0-4-0-0	4-4-4	Fall 04
ENGR 3420	Introduction to Analog and Digital Communications			Minch	0-4-0-0	4-4-4	Spr 05
ENGR 3430	Digital VLSI			Chang	0-4-0-0	4-4-4	Spr 05
ENGR 3440	Modern Sensors			Somerville	0-4-0-0	4-4-4	TBA
ENGR 3450	Semiconductor Devices			Somerville	0-4-0-0	4-4-4	TBA
ENGR 3520	Foundations of Computer Science	ENGR 2510		Stein	0-4-0-0	4-0-8	Fall 04
ENGR 3520a	Foundations of Computer Science Project		ENGR 3520	Stein	0-2-0-0	1-0-5	Fall 04
ENGR 3525	Software Systems			Downey	0-4-0-0	4-4-4	Spr 05
ENGR 3530	Synchronization			Downey	0-2-0-0	2-2-2	Spr 05
ENGR 3540	Computer Systems and Public Policy			TBA	0-2-2-0	4-0-8	TBA
ENGR 3610	Core BioEngineering			TBA	0-4-0-0	4-4-4	Spr 05
ENGR 3810	Structural Biomaterials	SCI 1410	SCI 1210	Chachra	0-4-0-0	4-4-4	Fall 04
ENGR 3820	Experiences in Failure	SCI 1410		Stolk	0-4-0-0	4-4-4	Spr 05
MTH 1110	Calculus		SCI 1110 and ENGR 1110	Geddes, Tilley	2-0-0-0	2-0-4	Fall 04
MTH 1120	Vector Calculus		SCI 1120 and ENGR 1120	TBA	2-0-0-0	2-0-4	Spr 05
MTH 2110	Discrete Mathematics	MTH 2120		Spence	4-0-0-0	4-0-8	Fall 04

Number	Name	Pre-requisites	Co-requisites	Instructor	Credits[1]	Hours[2]	Offered
MTH 2120	Linear Algebra			Moody, Spence, Tilley	2-0-0-0	2-0-4	TBA
MTH 2130	Probability and Statistics			Moody, Spence, Tilley	2-0-0-0	2-0-4	TBA
MTH 2140	Differential Equations	ICB2		TBA	2-0-0-0	2-0-4	TBA
MTH 2150	Applied Mathematical Methods	ICB2		Moody, Spence, Tilley	4-0-0-0	4-0-8	Fall 04, Spr 05
MTH 2199	Special Topics in Mathematics			TBA	2-0-0-0	2-0-4	TBA
MTH 3120	Partial Differential Equations	MTH 2150		Tilley	4-0-0-0	4-0-8	Fall 04
MTH 3130	Mathematical Analysis	ICB2		Moody	2-0-0-0	2-0-4	Fall 04
MTH 3140	Coding Theory			Spence	2-0-0-0	2-0-4	Spr 05
MTH 3150	Numerical Methods and Scientific Computing	MTH 2120, MTH 2140		Tilley	4-0-0-0	4-0-8	Spr 05
SCI 1110	Physics: Mechanics		MTH 1110 and ENGR 1110	Somerville, Zastavker	3-0-0-0	3-3-3	Fall 04
SCI 1120	Physics: Electromagnetism and Waves		MTH 1120 and ENGR 1120	TBA	3-0-0-0	3-3-3	Spr 05
SCI 1210	Foundations of Modern Biology (with laboratory)			J. Pratt, Donis-Keller	4-0-0-0	4-4-4	Fall 04, Spr 05
SCI 1310	Introduction to Chemistry (tentative)			TBA	4-0-0-0	4-4-4	Fall 04
SCI 1410	Materials Science and Solid State Chemistry (with laboratory)		Fall 04 Section 02also takes AHSE 2110	Chachra, Stolk	4-0-0-0	4-4-4	Fall 04, Spr 05
SCI 2110	Biological Physics	ICB1, ICB2		Zastavker	4-0-0-0	4-0-8	2005
SCI 2210	Immunology	SCI 1210		J. Pratt	4-0-0-0	4-0-8	Fall 04
SCI 2320	Organic Chemistry (with laboratory)			TBA	4-0-0-0	4-4-4	Spr 05
SCI 3110	Modern Physics	PFE II		Holt	4-0-0-0	4-0-8	Fall 04
SCI 3120	Solid State Physics	ICB2		Christianson	0-0-0-4	4-0-8	Spr 05

Course Listings

AHSE 1100
History of Technology: Environment, Culture and Government

Instructor(s): Martello
Credits: 0-0-4-0
Hours: 4-0-8
Offered: Fall 04

This course operates on three levels of inquiry and exploration. In the most detailed sense, we look at several major History of Technology themes, such as Technological Systems, Technology and Culture, and Technology and the Environment. We address larger historical questions, such as the interpretation of evidence and the combination of analysis and narrative. Finally, we conduct writing, presentation, creativity, and analysis exercises that contribute to competencies such as communication and contextual understanding.

AHSE 1101
History and Society: Bodies in Motion: Meaning of Migration in the 20th Century United States

Instructor(s): Bruyneel
Credits: 0-0-3-0
Hours: 3-0-6
Offered: Fall 04

That the United States is a "nation of immigrants" is a truism ingrained in American culture and public disclosure. To it we might add another: Americans are people "on the move." However, (if such characterizations are commonplace) unpacking them is anything but simple. This course endeavors to unpack these ideas, introducing students to college-level work in the Liberal Arts through an exploration of the construction of "American" identity in the 20th century.

AHSE 1102
Arts and Humanities: Challenging Boundaries: The Self Explored in Art and Philosophy 1800-2000

Instructor(s): Levinson
Credits: 0-0-3-0
Hours: 3-0-6
Offered: Fall 04

In AHSE 1102 we will observe, explore, and analyze how art (literary and visual) and philosophy grapple with self-identity and the boundaries of the self in the last 200 years. More specifically, we will explore the following questions:

- How do artists and philosophers imagine both the possibilities and the boundaries available to the self?
- How do artists and philosophers interrogate sets of values associated with identities available to the self?
- How do the forms and voices that artists and philosophers take up or invent enable new ways of being?

In the first half of the course, we will focus on artists and philosophers from 19th century Europe and America grappling with powerful political, economic, social, and cultural forces. In the second half we will focus on contemporary artists and philosophers who explore these same powerful forces from postcolonial and postmodern perspectives.

AHSE 1122
The Wired Ensemble — Instruments, Voices, Players

Instructor(s): Dabby
Prerequisite: ability to read music
Credits: 0-0-4-0
Hours: 4-0-8
Offered: Fall 04

Two concurrent streams comprise The Wired Ensemble: composition and performance of original works for instruments and voices; the exploration of composers through their letters.

As composers and performers, students concentrate on instruments, voices, and the sym-

bolic language that brings them to life. They compose music for every family of instruments — woodwinds, brass, strings, percussion — and for voices — with semiweekly performances of these pieces by fellow musicians. Students also have the opportunity to hear their works performed in concert settings by professional and student musicians with whom they have worked. Seminar trips to Boston and New York enable the class to gather musical and inspirational material for their work, as well as to hear some of the finest orchestral and vocal ensembles in performance. The course combines understanding of acoustic instruments/voices with orchestral and vocal ensemble writing, performance, and recording — all geared to an end-of-term production.

While actively engaged in composition, students examine the worlds of earlier composers in order to provide context for their own lives and work. To read many of the biographies of a Mozart, Beethoven, Schubert, or Chopin presents these luminaries through the scholarly lens of a story teller. Yet, to peruse their letters ushers the reader into a rarefied world of personal thoughts, goals, desires, in conjunction with the prosaic affairs of everyday eighteenth and nineteenth century life. For anyone who has ever dreamed of charting a creative path through life—whether as engineer, artist, scientist, and/or entrepreneur—these musicians, with their triumphs, setbacks, and emotional highs and lows, provide mentors for a lifetime.

AHSE 1130
Seeing and Hearing: Communicating with Photographs, Video and Sound

Instructor(s): Donis-Keller
Credits: 0-0-4-0
Hours: 4-0-8
Offered: Fall 04

Seeing and Hearing is a foundation course that is about the communication of ideas developed by research, reflection, and evolving thought, using as a vehicle for expression contemporary digital media tools. In this project-based course, students will have opportunities for hands-on learning in audio recording and editing, 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 will complete projects including a self-portrait, a sound-piece that is used as an audio track for a short video, a video documentary, and a staged narrative. 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.

AHSE 1150
What is "I"?

Instructor(s): Stein
Credits: 0-0-4-0
Hours: 4-0-8
Offered: Spring 05

This interdisciplinary exploration of identity draws on a diverse range of genres in the Humanities, Social Sciences, Arts and Sciences. Prior offerings have drawn from Anthropology, Artificial Intelligence, Biology, Film, History, Literature, Memoir, Neuroscience, Philosophy, Psychology, Political Science, Science Fiction, Sociology, and Visual Arts. Our goal is to understand how individual perspective (or the illusion of same) comes into being and how our own unique perspectives shape the way that we see the world. Emphasis is placed on communication and context.

AHSE 1500
Foundations of Business and Entrepreneurship

Instructor(s): Bourne, Schiffman
Credits: 0-0-0-4
Hours: 4-0-8
Offered: Fall 04, Spring 05

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.

AHSE 2110
The Stuff of History: Materials and Culture in Ancient, Revolutionary and Contemporary Times

Instructor(s): Martello
Co-requisites: SCI 1410 Section 02
Credits: 0-0-4-0
Hours: 4-0-8
Offered: Fall 04

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.

AHSE 2120
Heroes for the Renaissance Engineer: Leonardo, Nabokov, Bach, Borodin

Instructor(s): Dabby
Credits: 0-0-4-0
Hours: 4-0-8
Offered: Spring 05

Students with dual talents in the arts and sciences regularly appear on the class lists of educators in science, mathematics, and engineering. Is it possible to offer them models for living and working — heroes — whose inimitable contributions to society stem in part from dual (and sometimes dueling) passions? This course examines individuals who possessed extraordinary ability in the arts, engineering, and science. It explores how their creative voices achieved resonance for generations, how at times their disciplines entwined, while at others they separated. Students seek answers to the questions: To what extent have artists exhibited extraordinary knowledge and skill in engineering and science? Does this necessarily infuse their art, and if so, how is this intersection manifested? Source documents provide the key focus for analysis and critical thought.

Artists in the fields of literature, art, and music include Vladimir Nabokov (writer and lepidopterist), Leonardo da Vinci (artist and engineer), Alexander Borodin (composer and chemist), and J. S. Bach (composer, performer, and acoustician). Each of these achieved a self-sufficiency enabling the articulation and activation of work that reveals a singular vision; in short, an entrepreneurial streak runs through their lives, fueled by their own individuality and remarkable originality — an originality shaped in part by fluency in both technical and artistic disciplines. Class trips to concerts and museums in Boston and New York will enable students to explore firsthand the works of these individuals. Students will also have the opportunity to realize projects in the arts while engaged in their respective technical studies in order to 'live' the ideal of the Renaissance engineer. In doing so, they experience firsthand the satisfaction and challenges faced by Bach, Borodin, Nabokov, and Leonardo in their desire for knowledge, discovery, and creative expression.

AHSE 2130
The Intersection of Art and Science

Instructor(s): Donis-Keller
Credits: 0-0-4-0
Hours: 4-0-8
Offered: Fall 04

Science and Art are often considered entirely different worlds inhabited by practitioners who have nothing in common. In this course we will debunk this myth by closely examining the discovery process in both disciplines and by comparing the culture of science to that of art, historically and in the present. We will consider the influence of scientific discoveries, from optics to "new media" on the production of art and discuss the corollary question "Has art influenced the progress of science?" We will also consider ways in which science allows us to understand artists and the work they create. In contemporary society artists have begun to comment on science, sometimes with disastrous results, which leads us to ask, "What is needed in order to establish a meaningful dialogue between scientists and artists, and, does it matter?"

AHSE 3500
Entrepreneurship: Real-Time Case Study

Instructor(s): Bourne, Schiffman
Prerequisites: AHSE 1500 (FND2610)
Credits: 0-0-0-4
Hours: 4-0-8
Offered: Fall 04

As you read this, the managers of a new high-tech company, (to be announced), are striving to achieve the entrepreneurial dream. On a special website you will follow that company and see their progress week by week, but you will do more than just watch. You will be actively engaged with the company, analyzing its problems, and making input. You will be participating in an in-depth, real-time case study. Unlike traditional case studies, this real-time case will dig deeply into one company during an entire semester. At this moment, a case writer is stationed full-time at the case company. Each week the writer will provide us with the information we need to analyze a particular problem or question about the company. Our goal is not analysis for its own sake, but rather, we want to go beyond critiquing, and make valuable recommendations to the company. This course is cross-listed with Babson College.

ENGR 1110
Engineering of Compartment Systems

Instructor(s): G. Pratt, Storey
Co-requisites: MTH 1110 and SCI 1110
Credits: 0-3-0-0
Hours: 3-3-3
Offered: Fall 04

A hands-on class in the modeling and control of compartment systems, including first and second order thermal, mechanical, and electrical systems, the nature of effort and flow (across and through state variables) as universal concepts, power and energy, impedance, damping, passivity, qualitative feedback stability, and hysteretic, P, PI, and PID control. Students will also learn to use MATLAB, Simulink, and to write basic real-time control and simulation software.

ENGR 1120
Engineering of Spatially Distributed Systems

Instructor(s): G. Pratt, Storey
Co-requisites: MTH 1120 and SCI 1120
Credits: 0-3-0-0
Hours: 3-3-3
Offered: Spring 05

A hands-on class in the modeling and control of spatially distributed systems, including thermal diffusion in 1D and 2D, the heat equation, the wave equation, characteristic impedance and wave velocity, simple (Cartesian grid) finite difference analysis, acoustic transmission lines, electrical transmission lines, termination and wave reflection, introduction to acoustics & EM Antennas.

ENGR 1200
Design Nature

Instructor(s): Linder, Staff
Credits: 0-4-0-0
Hours: 6-4-2
Offered: Fall 04

We take nature, an important source of inspiration and understanding, as a theme and develop bioinspired ideas into functional prototypes. Our focus is on the general principles and methods that shape the practice of engineering design. Students complete individual and team projects in a studio environment where we seek to develop a shared practice and understanding of engineering design. Students also gain experience in visualization, experimentation, estimation, fabrication, and presentation as they relate to designing.

ENGR 1510
Introductory Programming

Instructor(s): Downey
Credits: 0-2-0-0 (Note: This course may be taken above the first semester freshman credit limit)
Hours: 2-1-1
Offered: Fall 04

This class is an introduction to basic programming intended for students with little or no programming experience. It develops basic programming and debugging skills, and covers concepts including variables and values; procedures, parameters and arguments; lists, dictionaries and other collections; and basic algorithms including map, filter and reduce. Many examples and exercises include graphics.

In Fall 2004, we will be using the Python programming language, which is particularly well-suited for beginners, but also similar to MATLAB and many languages used in other classes. Students completing this class successfully will be well-prepared for Software Design.

ENGR 2210
Principles of Engineering

Instructor(s): Minch, Stolk
Pre-Requisites: ICB2
Credits: 0-4-0-0
Hours: 4-4-4
Offered: Fall 04, Spring 05

Through a significant project experience, students will learn to integrate analysis, qualitative design, quantitative optimization, experiments, and simulations to improve their ability to engineer real systems. Two course sections will be offered, each one focusing on a particular type of engineering system. Section 01 will focus on electrical systems and components. Section 02 will focus on mechanical systems and material properties. Students need not enroll in a section corresponding to their intended major.

ENGR 2250
User Oriented Collaborative Design

Instructor(s): Linder
Credits: 0-4-0-0
Hours: 4-4-4
Offered: Spring 05

Students develop detailed concepts and models of authentic new products and services. Our focus is on user-oriented, collaborative approaches to design seeking holistic solutions integrating user and functional perspectives. The importance of process and the development of strategies are emphasized. Students observe and engage people to develop a deep understanding of their values and the patterns of their lives. They work collaboratively in a studio environment to create a shared understanding of the product users they design with and the product concepts they develop. Topics covered include design thinking, user research, concept development and interaction design including usability engineering.

ENGR 2410
Signals and Systems

Instructor(s): Dabby
Credits: 0-4-0-0
Hours: 4-0-8
Offered: Spring 05

Signals (functions of one or more independent variables) and Systems (devices that perform operations on signals) present 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).

ENGR 2510
Software Design

Instructor(s): Downey, Stein
Credits: 0-4-0-0
Hours: 5-0-7 (Fall) ; 6-0-6 (Spring)
Offered: Fall 04, Spring 05

This course is an introduction to software design. This course focuses on a model of computation as a set of simultaneous ongoing entities embedded in and interacting with a dynamic environment, for example: computation as it occurs in spreadsheets, video games, web applications, and robots. A major component of the class is a weekly three hour in-class laboratory. Much of this laboratory is 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 is 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.

Both students with no prior background and students with background comparable to the CS AP should both find this course interesting and worthwhile.

ENGR 3310
Transport Phenomena

Instructor(s): Townsend
Prerequisites: ICB2
Credits: 0-4-0-0
Hours: 4-0-8
Offered: Fall 04, Spring 05

This course introduces the basic physics and applications of the transport of heat, mass, and momentum. Topics in fluid dynamics include kinematics, conservation laws, dynamic similarity, and laminar flow solutions. Topics in heat and mass transfer include internal and external convection, free convection, boiling and condensation, and the analogy between heat and mass transport. Applications in the course will cover phenomena such as waves, turbulence, geophysical flow, compressible flows, aerodynamics, heat exchangers, and manufacturing processes.

ENGR 3320
Mechanics of Solids and Structures

Instructor(s): Storey, Miller
Prerequisites: ICB2
Credits: 0-4-0-0
Hours: 4-4-4
Offered: Fall 04, Spring 05

This course covers the principles of statics of structures and mechanics of materials. Topics include tension, compression, shear, torsion, bending, stresses, deflection, and strain in loaded members. Students will use a combination of analysis and simulation to understand the principles of mechanics. The course includes applications in structural engineering and machine elements. Students are introduced to the use of finite element methods as a tool for design and analysis.

ENGR 3330
Mechanical Design

Instructor(s): Barrett
Co-requisites: ENGR 3320
Credits: 0-4-0-0
Hours: 4-4-4
Offered: Fall 04, Spring 05

This design course introduces new topics in machine design and applies and integrates the basic mechanical and thermal engineering sciences. Topics in machine element design include stress, strain, deflection, stiffness, and failure of mechanical components, steady and variable loading, mechanical fastening and joining, and the design of mechanical components, including springs, bearings, gears, shafts, and axles. The course includes a major design component that involves the fabrication and physical testing of mechanical components.

ENGR 3340
Dynamics

Instructor(s): TBA
Credits: 0-2-0-0
Hours: 2-0-4
Offered: Spring 05

Course Under Development

ENGR 3350
Thermodynamics

Instructor(s): TBA
Credits: 0-2-0-0
Hours: 2-0-4
Offered: Spring 05

This course covers the fundamental principles of thermodynamics and physical chemistry as applied to engineering systems. This course provides a foundation in fundamental thermodynamic phenomena, including the first and second laws of thermodynamics, thermodynamic properties, equations of state in real and ideal gases, and chemical equilibrium. The basic laws are used to understand and analyze the performance and efficiency of systems such as automobile engines, gas turbines, steam power plants, and refrigerators.

ENGR 3360
Intermediate Fluid Dynamics

Instructor(s): TBA
Credits: 0-4-0-0
Hours: 4-0-8
Offered: TBA

Course Under Development

ENGR 3370
Controls

Instructor(s): TBA
Credits: 0-4-0-0
Hours: 4-0-8
Offered: TBA

Course Under Development

ENGR 3380
Manufacturing

Instructor(s): TBA
Credits: 0-4-0-0
Hours: 4-0-8
Offered: TBA

Course Under Development

ENGR 3390
Mechatronics

Instructor(s): TBA
Credits: 0-4-0-0
Hours: 4-0-8
Offered: TBA

Course Under Development

ENGR 3410
Computer Architecture

Instructor(s): Chang
Credits: 0-4-0-0
Hours: 4-4-4
Prerequisites: ICB2
Offered: Fall 04

This course introduces a broad range of computation structures used in computation, from logic gates to specialized (e.g. DSP, cellular automata) as well as general purpose architectures. Design techniques for quantitatively optimizing performance are also taught. Students build a computer from the ground up.

ENGR 3420
Introduction to Analog and Digital Communication

Instructor(s): Minch
Credits: 0-4-0-0
Hours: 4-4-4
Prerequisites: ICB2
Offered: Spring 05

This course teaches students design techniques for analog and digital communications, including elementary coding and information theory. Topics also include modulation schemes, data compression, error detection and correction, encryption, transmitter and receiver design, and routing protocols. Students build an operative communications link over an unreliable channel.

ENGR 3430
Digital VLSI

Instructor(s): Chang
Credits: 0-4-0-0
Hours: 4-4-4
Prerequisites: ICB2
Offered: Spring 05

An introduction to digital CMOS design. Students will learn design techniques and layout their own custom integrated circuit, which will be fabricated by MOSIS.

ENGR 3440
Modern Sensors

Instructor(s): Somerville
Credits: 0-4-0-0
Hours: 4-4-4
Prerequisites: ICB2, ENGR 2410
Offered: TBA

Modern topics in sensors, including sensor fabrication, physics, signal conditioning, and "smart" sensors. Students will conduct research on sensor technologies of their choosing, and implement a sensor system of their own design.

ENGR 3450
Semiconductor Devices

Instructor(s): TBA
Credits: 0-4-0-0
Hours: 4-4-4
Prerequisites: ICB2; SCI1410 or SCI3110
Offered: 2005

Introduction to semiconductor device fabrication, operation, and design. Emphasis on diodes and transistors, with some exploration of speculative technologies. Students will conduct a project of their own choosing involving either device characterization or device simulation using modern tools.

ENGR 3520
Foundations of Computer Science

ENGR 3520a
Foundations of Computer Science Project

Instructor(s): Stein
Prerequisites: ENGR 2510
Credits: 0-4-0-0 (ENGR 3520) ; 0-2-0-0 (ENGR 3520a)
Hours: 4-0-8 (ENGR 3520) ; 1-0-5 (ENGR 3520a)
Offered: Fall 04

This course uses applications as vehicles for exploring the formal analytic toolkit of the computer scientist as well as aspects of algorithmic computing and intelligent software design. The course combines elements of automata theory, data structures and algorithms, programming languages, artificial intel-

ligence, information management, internet programming.

Students may optionally enroll only in ENGR 3520; these students will be excused from the programming/project component of the course. Students wishing to register for the full 6 credit course should register for both ENGR 3520 and ENGR 3520a.

ENGR 3525
Software Systems

Instructor(s): Downey
Credits: 0-4-0-0
Hours: 4-4-4
Offered: Spring 05

An introduction to the design and implementation of system-level software, including operating systems, networks, and databases. Topics include processes and threads, memory and storage management, networking and interprocess communication, scheduling and synchronization.

ENGR 3530
Synchronization

Instructor(s): Downey
Credits: 0-2-0-0
Hours: 2-2-2
Offered: Spring 05

When multiple programs run at the same time, they can interact in complex ways, yielding unpredictable behavior at best and impenetrable bugs at worst. Synchronization is the process of imposing timing constraints in order to guarantee the correct execution of programs. This class presents a series of synchronization "puzzles" and gradually develops a set of tools for dealing with even the hairiest synchronization problems.

ENGR 3540
Computer Systems and Public Policy

Instructor(s): TBA
Credits: 0-2-2-0
Hours: 4-0-8
Offered: TBA

How do technical decisions influence human lives? How can engineering solutions change the terms of public policy debate? Through a series of case studies, this course looks at these questions in specific fields where computer technology and public policy intersect. In questions of privacy, security, safety (including public health), pornography, intellectual property and free speech, developments in computer systems technology either raise or offer solutions to significant public policy questions. This course builds ethics and context competencies and breadth in AHS. It also covers topics normally found in classes such as Operating Systems, Databases, Distributed Systems, Cryptography, Web Computing, and other Computer Science offerings.

ENGR 3610
Core BioEngineering

Instructor(s): TBA
Credits: 0-4-0-0
Hours: 4-4-4
Offered: Spring 05

Course Under Development

ENGR 3810
Structural Biomaterials

Instructor(s): Chachra
Credits: 0-4-0-0
Hours: 4-4-4
Prerequisites: SCI 1410
Co-requisites: SCI 1210
Offered: Fall 04

How is a blood vessel like a garden hose? Why are seashells strong (and beautiful) even though they are made of chalk? How can your pink and squishy tendons be made of the same material as your transparent corneas? This course focuses on the materials science of nat-

ural tissues, primarily ones that fill structural roles, including bone, teeth, tendon, nacre, and wood, with an emphasis on how they are similar and different to 'engineering' materials. Additional material may include scaffolds for tissue engineering, biomimetic materials and mechanical properties of individual cells.

ENGR 3820
Experiences in Failure

Instructor(s): Stolk
Credits: 0-4-0-0
Hours: 4-4-4
Prerequisites: SCI 1410
Offered: Spring 05

Students will complete projects and case studies to gain practical experience in the analysis of fractured and failed engineering materials and components. The course focus will be on material microstructure and the micromechanisms of fracture, and topics will include failure analysis methodology, mechanisms of failure, fracture classifications, corrosion and environmental factors, fractography, and design for failure prevention. Students will learn advanced materials characterization techniques including scanning electron microscopy (SEM), energy dispersive spectroscopy (EDS) and compositional dot mapping, x-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR), optical microscopy, and fracture surface sample preparation.

MTH 1110
Calculus

Instructor(s): Geddes, Tilley
Co-requisites: SCI 1110 and ENG 1110
Credits: 2-0-0-0
Hours: 2-0-4
Offered: Fall 04

An overview of differential and integral calculus in the context of elementary numerical analysis.

MTH 1120
Vector Calculus

Instructor(s): TBA
Co-requisites: SCI 1120 and ENG 1115
Credits: 2-0-0-0
Hours: 2-0-4
Offered: Spring 05

An overview of differential and integral calculus in higher dimensions. Topics include surfaces, partial differentiation, gradients, multiple integrals, line integrals, Green's, divergence, and Stokes' theorems, and their applications to science and engineering.

MTH 2110
Discrete Mathematics

Instructor(s): Spence
Credits: 4-0-0-0
Hours: 4-0-8
Prerequisites: MTH 2120
Offered: Fall 04

Topics for this course include combinatorics, number theory, graph theory, an emphasis on creative problem solving, and the ability to read and write rigorous proofs.

MTH 2120
Linear Algebra

Instructor(s): Moody, Spence, Tilley
Credits: 2-0-0-0
Hours: 2-0-4
Offered: TBA

An introduction to the fundamental mathematical techniques and concepts used in solving linear systems of equations. Topics include matrices and vectors, Gaussian elimination, matrix inverses, transposes and factorizations, column, row, and nullspace of a matrix, rank of a matrix, determinants, and eigenvalues and eigenvectors.

MTH 2130
Probability and Statistics

Instructor(s): Moody, Spence, Tilley
Credits: 2-0-0-0
Hours: 2-0-4
Offered: TBA

An introduction to probability and statistics, with applications to science, engineering, and social science. Topics include discrete and continuous probability distributions; moments; conditional probability; Bayes' Rule; point and interval estimation; hypothesis testing.

MTH 2140
Differential Equations

Instructor(s): TBA
Credits: 2-0-0-0
Hours: 2-0-4
Offered: TBA

An introduction to the solution techniques of differential equations. Topics include mathematical modeling, solution techniques to linear and nonlinear first-order differential equations, characteristic solutions to linear constant coefficient second-order differential equations, solutions to homogeneous (unforced) and inhomogeneous (forced) second-order linear systems. Applications include modeling of physical systems.

MTH 2150
Applied Mathematical Methods

Instructor(s): Moody, Spence, Tilley
Credits: 4-0-0-0
Hours: 4-0-8
Offered: Fall 04, Spring 05

The first half of this course is an introduction to probability and statistics, with applications to science, engineering, and social science. Topics include discrete and continuous probability distributions; moments; conditional probability; Bayes' Rule; point and interval estimation; hypothesis testing. The second half of the course will focus on special topics in differential equations, with linear algebra.

MTH 2199
Special Topics in Mathematics

Instructor(s): TBA
Credits: 2-0-0-0
Hours: 2-0-4
Offered: TBA

Special topics in mathematics; content will vary.

MTH 3120
Partial Differential Equations

Instructor(s): Tilley
Prerequisites: MTH 2150
Credits: 4-0-0-0
Hours: 4-0-8
Offered: Fall 04

An introduction to the solution methods of partial differential equations that arise in describing a wide variety of problems in engineering, such as fluid dynamics, electromagnetic wave propagation, and transport phenomena. The course begins with the solution of boundary-value problems in ordinary differential equations (Sturm-Liouville theory) and then develops the solutions of the heat, wave, and Laplace equations on finite domains. Similarity solutions of equations on infinite spatial domains are also investigated, as is a brief introduction to numerical solutions.

MTH 3130
Mathematical Analysis

Instructor(s): Moody
Prerequisites: ICB2
Credits: 2-0-0-0
Hours: 2-0-4
Offered: TBA

An introduction to real analysis; construction of the real number system; metric spaces and metric topology; compactness; connectedness; functions. Emphasis on mathematical rigor, logic and proof.

MTH 3140
Coding Theory

Instructor(s): Spence
Credits: 2-0-0-0
Hours: 2-0-4
Offered: TBA

Error-control codes are used to detect and correct errors that occur when data are transmitted across a noisy channel. This course provides an introduction to error-control codes, including linear, cyclic, binary, and non-binary codes. Mathematics such as modular arithmetic and introductory ring and field theory will be introduced and used extensively.

MTH 3150
Numerical Methods and Scientific Computing

Instructor(s): Tilley
Prerequisites: MTH 2120, MTH 2140
Credits: 4-0-0-0
Hours: 4-0-8

The speed of modern computers has allowed simulation to become a very powerful tool in the design and analysis of systems in science and engineering. This power is easily misused and scientific computing is full of pitfalls. This course introduces students to methods useful for accurately simulating complex systems in the physical sciences and engineering. The first half of the course will focus on iterative techniques for solving algebraic systems, interpolation of functions, and advanced techniques for solutions to ordinary differential equations. The second half of the course focuses on an introduction to solutions to boundary-value problems and solutions to partial differential equations, with the students required to choose an application in science and engineering to solve in detail.

SCI 1110
Physics: Mechanics

Instructor(s): Somerville, Zastavker
Co-requisites: MTH 1110 and ENG 1110
Credits: 3-0-0-0
Hours: 3-0-6
Offered: Fall 04

This course provides a thorough introduction to classical mechanics. We will cover kinematics, the basis of Newton's laws, particle dynamics, the concepts of momentum, work, energy, and rotational motion, and oscillations. Additionally, the course will establish the basics of solid and fluid mechanics, concluding with introductory topics in thermodynamics. Our goal is to share with you the excitement of discovering the material universe at its most basic levels and to equip you with the basic knowledge and analytical skills necessary to become a scientist or an engineer.

SCI 1120
Physics: Electromagnetism and Waves

Instructor(s): TBA
Co-requisites: MTH 1120 and ENG 1120
Credits: 3-0-0-0
Hours: 3-0-6
Offered: Spring 05

Electricity and magnetism, including electric charges, forces, and fields, Gauss's Law, potential, electrostatic energy and capacitors, magnetic fields and energy, mutual and self induction, Ampere's Law, Maxwell's Equations, acoustic and electromagnetic waves, polarization, interference and diffraction.

SCI 1210
Foundations of Modern Biology (with laboratory)

Instructor(s): Donis-Keller, J. Pratt
Credits: 4-0-0-0
Hours: 4-4-4
Offered: Fall 04, Spring 05

This course introduces students to the fundamental aspects of biological science including biochemistry, molecular biology, human molec-

ular 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.

SCI 1310
Introduction to Chemistry

Instructor(s): TBA
Credits: 4-0-0-0
Hours: 4-4-4
Offered: This course is a tentative offering subject to the availability of faculty.

This course introduces students to the fundamental aspects of aqueous and solid state chemistry. Topics include stoichiometry, gas laws, atomic structure and bonding, atomic theory, quantum theory, acid/base chemistry, solubility, electrochemistry, kinetics, thermodynamics, and reaction equilibria.

SCI 1410
Materials Science and Solid State Chemistry (with laboratory)

Instructor(s): Chachra, Stolk
Co-Requisites: Fall 04 Section 02 also takes AHSE 2110
Credits: 4-0-0-0
Hours: 4-4-4
Offered: Fall 04, Spring 05

This laboratory-based course introduces students to the relationships among structure, processing, properties, and performance of solid state materials including metals, ceramics, polymers, composites, and semiconductors. Topics include atomic structure and bonding, crystallography, diffusion, defects, equilibrium, solubility, phase transformations, and electrical, thermal, and mechanical properties. Students apply materials science principles in laboratory projects that emphasize experimental design and data analysis, examination of material composition and structure, measurement and modification of material properties, and selection of materials for engineering applications.

SCI 2110
Biological Physics

Instructor(s): Zastavker
Prerequisites: ICBI and ICB2
Credits: 4-0-0-0
Hours: 4-0-8
Offered: 2005

In this course, we will look at life as one of the many phenomena displayed by the universe in its evolution, and apply the laws of physics to understand these phenomena. In doing so, we will take a "reductionist" or simplified approach to investigate the big picture, i.e., we will explore basic biophysical mechanisms that make various living organisms and biological assemblies interesting to scientists and useful for engineers. We will aim to achieve an intuitive and a semi-quantitative understanding of physical phenomena ranging from electrosensing (the ability of some animals to sense external electric fields for navigation and the detection of prey and communication) and obesity to biomechanics of athlete performance and scaling theory, which provides us with information about beasts we have never seen, for example, dinosaurs. Based on physical laws, we will examine diseases ranging from the cataract of the eye to the formation of gallstones in gall bladder bile. In order to gain knowledge of these various phenomena, we will systematically investigate the properties of water, Brownian motion, dynamics and physiology of fluids, thermodynamics, biomechanics and bioenergetics, and the electrochemical potential. Although engineers spend their entire careers solving and optimizing various problems, nature has been doing this for much longer; therefore, a deep understanding of biophysical processes in nature can yield unforeseen solutions to countless scientific and engineering problems. In this course, we will learn how to learn from nature.

SCI 2210
Immunology

Instructor: Joanne Pratt
Prerequisites: SCI 1210 or equivalent
Credits: 4-0-0-0
Hours: 4-0-8
Offered: Fall 04

Immunology is a relatively new science, and our understanding of our immune system is evolving at a rapid pace. When the immune system functions properly, infectious pathogens and potential cancer cells are destroyed. When our immune system malfunctions, normally harmless microorganisms can cause serious infections, autoimmune diseases or allergies can develop and cancer cells can evade immune surveillance and grow unchecked. In this lecture and discussion-based class, we will investigate the molecular and cellular mechanisms that control our immune responses. Current research in immunology will be emphasized through analysis of primary literature and media articles.

SCI 2320
Organic Chemistry (with laboratory)

Instructor(s): TBA
Credits: 4-0-0-0
Hours: 4-4-4
Offered: Spring 05

An introduction to the fundamentals of organic chemistry with an emphasis on applications in biology, biotechnology, synthetic polymers, and the environment. Topics include structure and bonding in organic compounds; chemical and physical properties of organic molecules and bulk organic materials; reaction mechanisms and kinetics; structure-reactivity relationships; chemical and physical transformations; synthesis of organic molecules; and characterization techniques.

SCI 3110
Modern Physics

Instructor(s): Holt
Prerequisites: ICB2
Credits: 4-0-0-0
Hours: 4-0-8
Offered: Fall 04

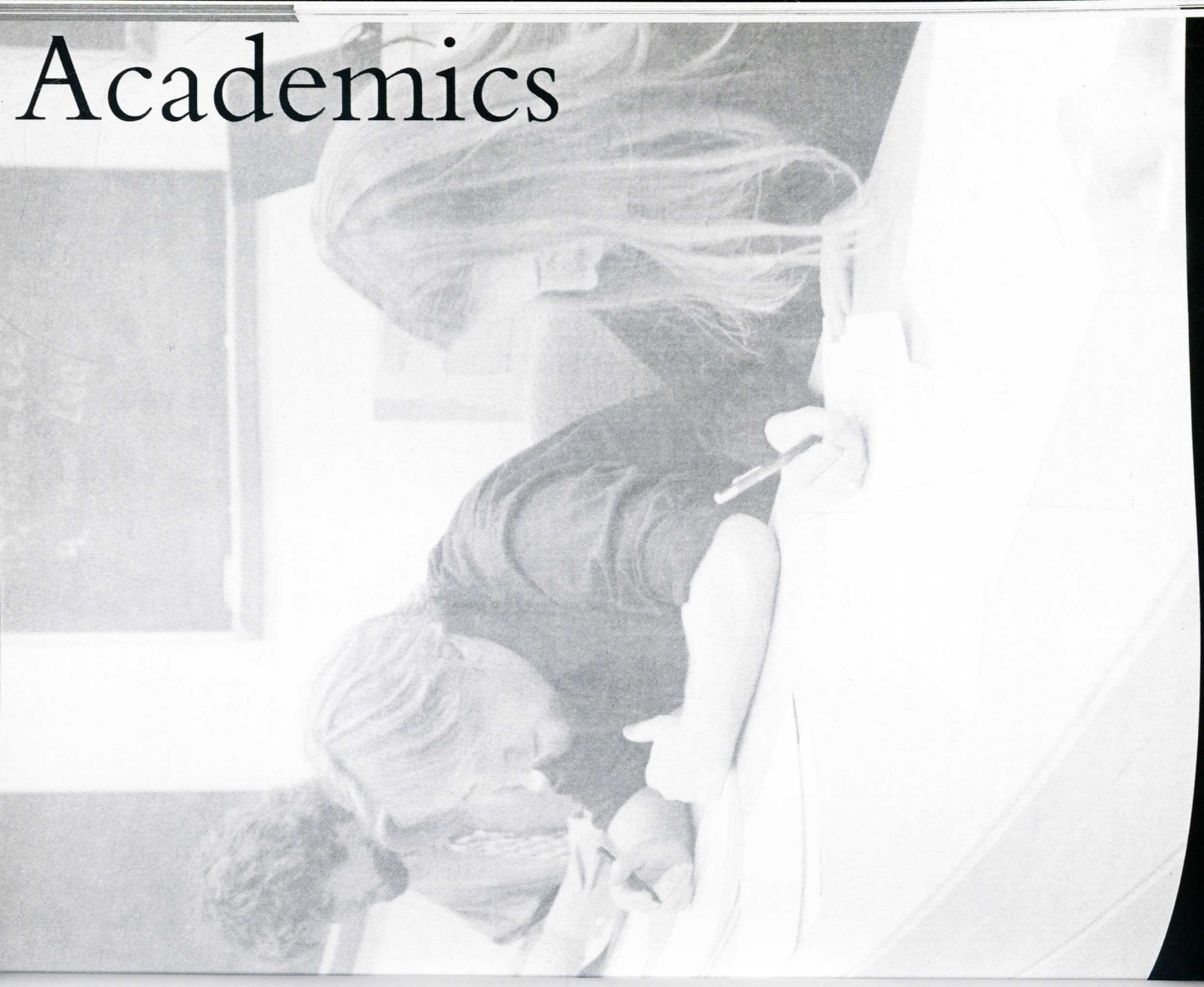
Modern Physics is based upon a few fundamental ideas that allow the explanation of phenomena that seem to defy consistency with traditional (Newtonian) physics. The most important of these (in the context of engineering applications) are the special theory of relativity, quantum mechanics and statistical mechanics. This course will introduce the basic concepts of Modern Physics, with particular application to atoms, molecules, and the materials utilized in modern electronics.

SCI 3120
Solid State Physics

Instructor(s): TBA
Credits: 4-0-0-0
Hours: 4-0-8
Offered: Spring 05

We will study the basic physics underlying the properties of various solid state materials. We will explore the current understanding of metals, semiconductors, dielectrics, and superconductors through phonons, electron band structure, and magnetism and investigate how the physics of these materials affects their application in the bulk and in recent work on the micro and nano-scale.

Academics



Academic Policies

This academic policy section describes the guidelines by which Olin College will operate during the 2004-05 academic year. This document is a work-in-progress; therefore, we expect these policies to evolve over time. Olin's highest priority is the well being of its students, and Olin recognizes that individual circumstances often call for individual approaches. Olin's faculty, staff, and administration will always attempt to do what is right, regardless of the formal rule. It is expected that faculty and students will behave with integrity and according to the Honor Code.

These policies are intended to provide guidelines for faculty and students when academic issues arise. Referral to these policies will also be necessary when petitioning for accreditation. In addition, these guidelines will help to ensure that students are treated fairly and uniformly with regard to academic issues. Under special circumstances, students may petition the Committee on Student Academic Performance, the Office of Student Life, or another appropriate body for consideration of a deviation from the stated policy.

AP Exams and Advanced Study

Olin College does not accept AP Exam credit for incoming students. Olin College does, however, recognize that many students enter Olin with a strong background in mathematics and physics. First-year students may take a placement exam in the subjects of the first year mathematics or physics courses during orientation. Placement exams at Olin are calibrated to a high standard. This standard is stated prior to taking the exam. If a student passes the placement examination for a course, he or she is exempt from that course, awarded credits for the subject matter and a grade of "Pass." This information is noted in the Examinations section of the student's transcript.

Attendance Policy

Students are expected to attend all classes at Olin. Each instructor will establish and publish the class attendance policies for reporting anticipated absences and making up missed work, including lab experiences and project work. The Dean of Student Life will grant exceptions for illness, religious observance, or other reasons deemed appropriate.

Class Standing

Class standing is determined by the number of degree credits a student has earned in relation to the 120 required for graduation. The following table is a breakdown of *earned degree credits* and their corresponding class year and represents a reasonable expectation of progress toward a degree over four years.

Class	Earned Degree Credits
Freshman	0–30
Sophomore	31–60
Junior	61–90
Senior	> 90

College Withdrawal Policy

Students may wish to leave Olin College prior to completing their degree. Such a decision may be difficult to make. Therefore, we encourage students to discuss the situation with their adviser or the Assistant Dean of Student Life for Advising. A student should consider if a Leave of Absence might provide a more suitable means for them to address the underlying circumstances for the withdrawal. The student's decision to withdraw indicates he or she does not intend to return. If a student needs a leave of absence, he or she should follow the procedures for requesting a leave. Dropping all registered courses does not automatically result in an official withdrawal from the college.

Voluntary Withdrawal

A student can voluntarily withdraw from Olin College. The student must file a College

Withdrawal Form with the Assistant Dean of Student Life for Advising. Withdrawing for non-medical reasons during a semester will yield grades of W, Withdrew, on the student's academic record. If Voluntary Withdrawal occurs after the last instructional day of the semester, grades from that semester will appear on the transcript.

Medical Withdrawal

Students who need to withdraw from Olin College for medical reasons should complete a College Withdrawal Form with the Assistant Dean of Student Life for Advising. If a student intends to return to the College, he or she should follow the procedure outlined in the Leave of Absence policy. Medical Withdrawals during a semester (i.e., by the last instructional day of a semester) will result in deletion of the semester's registration from the student's record. A refund may be requested based on the College's refund policy. Medical documentation may be required to complete the process.

Required Withdrawal

At times, students may be required to withdraw from Olin College for academic or other reasons. Students who are required to withdraw may not return to Olin without permission from the Office of Student Life.

Leave of Absence Policy

A student may request a leave of absence for up to 180 days in any 12-month period. Courses taken elsewhere during a leave of absence will not count for Olin course credit.

To initiate a leave of absence, a student should meet with his or her adviser and complete a Leave of Absence Form. The request is then forwarded to the Assistant Dean of Student Life for Advising for approval. Any documentation of the reason for the leave of absence (medical or otherwise) should accompany the student's request for a leave. The request, when approved, and any accompanying documentation will be forwarded to the Registrar for processing and placed in the student's academic file.

In the event a Leave of Absence is approved, the student's status will be noted as "On Leave." If a leave is not approved, students have the right to appeal the decision to the Dean of Student Life within two weeks of the date of the denial of leave. There are two kinds of leaves:

1. A Leave of Absence Mid Semester: This type of leave is requested when a semester is in active session.* In this case, all courses for which the student is registered will be designated as Incomplete/Leave of Absence. If a student needs to retake a course from that semester, a grade of Leave/No Record will be recorded for that course. Leave/No Record grades do not affect the student's grade point average. The effective date of this leave is the approval date of the leave.

Incomplete/Leave of Absence grades must be completed no later than 90 days after the student's return date, or at another date determined by the faculty member and adviser.

2. A Leave of Absence End Semester: This type of leave is requested when a semester is not in active session and there is an unexpected circumstance that impacts the student's ability to continue in the upcoming semester. In this type of leave, there are no grade entries made. The student's schedule for the upcoming semester will be deleted. The student will be placed on leave effective the first day of the upcoming semester for up to 180 days in any 12-month period.

If a student does not to return from a leave of absence, the student will be withdrawn from the college as of the date of expected return. All Incomplete/Leave of Absence grades will be changed to Leave/No Record (a non-punitive grade).

** This active session does not include the study or final exam period. If a student has an unexpected event that impacts his or her ability to take a final exam, he or she should refer to the Final Exam Policy for Excused Absences.*

Committee on Student Academic Performance

The Committee on Student Academic Performance is charged by the Dean of Student Life and is empowered to review, interpret, and propose academic policies. This committee will consider petitions to waive existing academic regulations and act as an appellate body for students with academic grievances. The committee will also examine the records of students who are not making satisfactory progress toward a degree.

This committee is chaired by the Dean of Student Life or the Dean's designee (non-voting, except in the case of a tie) and consists of the Registrar (non-voting), the Assistant Dean of Student Life for Advising, and three Faculty members. Students wishing to appeal a decision on academic policy must submit their appeal to the Registrar within one week of the original decision.

Course Overload Policy

Olin students may register for a maximum of twenty (20) credits each semester. The maximum load of twenty (20) credits is a total of degree and non-degree activities. In exceptional circumstances, students may petition COSAP through their adviser for approval of a course overload. This reflects Olin's commitment to reasonable expectations: we want our students to excel at and enjoy a realistic number of tasks rather than cram in a few extras. Non-degree credits result from Passionate Pursuits and research.

Cross-registration Policy

Olin College students, except first semester freshmen, may take Arts, Humanities, Social Science or an elective course at other schools with which we have cross-registration policy agreements. Generally, first semester freshmen are not eligible for cross-registration, unless Olin designates specific courses designed for the first semester experience. Taking a course at another school will count toward your total degree credit load at Olin. Students cannot exceed twenty (20) total credits in a given semester. For information on Registration, see the *Registration Policy* section of this Catalog. Students taking courses at another school should be careful to follow all academic policies, deadlines, etc. related to the host school. Olin College has cross-registration agreements with Babson College, Brandeis University and Wellesley College (BBW). Students are reminded that they are guests on the Babson, Brandeis and Wellesley campuses.

Grading at Olin

Note: *During the 2004-05 academic year, an experiment will be launched with a supplementary grading system based on competencies (e.g., teamwork, communication).*

Philosophy

Standards-based Grading: Course grading at Olin will be based on student progress toward defined course goals. Summary metrics (e.g. GPA) will be provided on the student's transcript, but relative summary metrics (e.g., class rank) are neither published nor tabulated.

Clarity: Grading standards in all classes will be based on public, well-defined criteria. All externally-reported information will be defined on the first day of instruction.

Privacy: Olin will not publicly post either grades or summary metrics (e.g., GPAs) in any form that allows identification of any particular individual's performance. It is expected that students will respect the privacy of each other's grades.

Feedback: Olin expects instructors to provide students with feedback on the students' performance in courses and projects. The Dean of the Faculty will annually conduct a public review of grade distributions and grading procedures.

Grading Rules and Regulations

1. **Clarity Requirements:** On the first day of instruction, each Olin class will publish the following information:

   a. **Learning Objectives** that specify the knowledge, skills, and attitudes that students are expected to develop or attain in the class. The learning objectives should be an effective instrument for students to understand what they will learn and how their learning will be evaluated.

   b. **Grading Criteria** that specify how the final course grade is determined. Some aspects of grading are necessarily based on the professional judgment of instructors, informed by their experience, and are not quantitative.

2. **Feedback:** Instructors will establish a system of feedback to the student throughout the semester specifying the student's performance. If an instructor becomes concerned about a student's performance, he or she will notify the student and the adviser of the specific concerns in a timely manner. In the event the instructor feels the student will not pass the course, he or she will notify both the adviser and the Assistant Dean of Student Life for Advising.

3. **End of Semester Feedback to the Adviser:** Olin advisers have real-time access to advisee's course grades through the Student Information System. In addition, instructors will notify advisers of any significant concerns noted during the semester.

4. **Reporting to the Registrar:** In the first semester, freshman year, Olin instructors will report P/NR to the Registrar. In subsequent semesters, Olin instructors will report the student's final course grade, according to the scale outlined below, to the Registrar.

5. **Course Grades:** Course grades at Olin provide students, their advisers, potential employers and graduate schools information about overall performance. Course grades are determined based upon a mix of demonstrated comprehension, skill, participation and effort

6. **Grading Scale:** For the 2004-05 academic year, the Olin College grading scheme contains letter grades with a resulting grade point average (GPA) on a four-point scale. Students will be assessed using the following interpretation:

Grade	Assessment Description	Point Value
A	Excellent	4.0
A-		3.7
B+		3.3
B	Good	3.0
B-		2.7
C+		2.3
C	Fair	2.0
C-		1.7
D+		1.3
D	Poor	1.0
F	Failing	0.0
I	Incomplete (temporary grade)	n/a
IF	Incomplete Failing	0.0
IL	Incomplete / Leave of Absence (temporary grade)	
IP	In Progress (temporary grade)	
L/NR	Leave/No Record	0.0
NC	No Credit for Pass/No Credit Option	0.0
NR	No Record	0.0
P	Pass	0.0
R	Course Repeated	n/a
TR	Transfer Credit	0.0
W	Withdrew from Course	0.0

During the first semester of the freshman year, instructors may report the student's grade to the student and to the adviser, but will report only a Pass/No Record to the Registrar.

7. **Grade Replacement:** If a student successfully achieves remediation of an eligible course (see remediation policies) between semesters or in a subsequent semester by activities other than retaking the Olin course or taking a comparable course at another institution, the course grade will be changed to reflect the new grade. The grade given as a result of remediation activities may not be higher than a C. No

additional information will be noted on the transcript. If a student achieves successful remediation via retaking the course at Olin or taking a pre-approved, comparable course elsewhere during another semester, the transcript will include the letter R for the first attempt. The new grade or transfer credit will appear on the transcript. The new grade, but not the original grade, will be factored into the student's GPA.

In unusual circumstances, a student may chose to retake a non-ICB course at Olin. The new grade will appear on the transcript in the semester in which the course was retaken. The original grade will remain, but will not be factored into the student's GPA.

8. Minimum Grade to Proceed: A grade of D is considered sufficient to satisfy a prerequisite requirement.

9. Pass/No Credit: This grading option is available for a maximum of three (3) elective courses that do not meet subject requirements for a student's major. These three elective opportunities are outside of the Independent Study opportunities. Students must declare their pass/no credit grading option by the 25th instructional day of the semester (October 8, 2004 for the fall semester and February 22, 2005 for the spring semester). The Pass/No Credit option does not impact the GPA; either Pass or No Credit will appear on the transcript. Once a student decides to take a course Pass/No Credit, he or she cannot revert back to receive a letter grade.

10. Passionate Pursuits (including Research as Passionate Pursuit): Passionate Pursuits are non-degree credit, and will be listed on the transcript if the nature of the activity and the level of completion are sufficient to merit credit. In exceptional cases, the faculty supervisor may include an official letter of commendation in the student's file. This commendation letter will be available to external parties.

11. The Olin Transcript: A student's academic transcript at Olin will include the following information for 2004-05:

a. A list of classes the student took in each semester, and a record of the student's final grades in those classes. First semester freshman transcripts will show only classes that were passed.

b. Classes taken Pass/No Credit appear either as a Pass or as a No Credit.

c. The student's GPA.

d. A list of non-degree activities taken each semester with a cumulative total of credits earned. There are no grades associated with non-degree activities.

e. Co-curricular offerings in which the sponsoring staff or faculty member reported sufficient student participation for a transcript notation.

Grading and Credits of Cross-registered Courses: Olin students who take a course at a BBW school, will receive the credits for the course if they receive a passing grade. The grade will be recorded on their transcript and be factored into their grade point average. Olin College will nominally equate BBW course credits using the following measurement: one Olin credit is equal to a minimum of 50 minutes of weekly in-class instruction.

Incomplete Policy

In extenuating circumstances, a student may request an incomplete grade by petitioning the Dean of Student Life. A student may petition for an incomplete grade prior to the last day of scheduled instruction. If an incomplete grade is approved, the student will be granted an extension period to complete the coursework. The period of the extension will be determined by the Dean of Student Life but will not be greater than the end of the subsequent semester. A grade of I will be listed as a temporary grade and will not affect the grade point average. Temporary grades must be converted to a permanent grade by the end of the subsequent semester. If the work is not completed by this time, the incomplete grade of I will be changed to IF, Incomplete Failing, or an alternate grade upon approval of the instructor and the Dean of Faculty. An IF grade does affect a grade point average. Incompletes may not be used for remediation purposes.

An incomplete is generally approved only when some specific event or illness prevents

the student from completing a specific part of the course (such as completing a paper, project or exam.) An incomplete should not be approved in instances where a student is demonstrating an overall difficulty covering or understanding the course materials and appears to need more time or additional instruction to learn the material. If such general difficulty occurs in one of the first year ICB courses, the student should attempt to complete the course. If the student receives a NR in the first semester or a D or below in subsequent semesters, he or she will proceed according to the remediation policy (see below). For all other courses, the student should discuss available options with his or her course instructor and adviser.

Remediation at Olin

The objective of remediation is to allow students to keep pace academically with their peers in the first year. This is driven by a requirement for all students to complete their degrees in eight semesters, combined with the tightly coupled Integrated Course Block (ICB) structure. All faculty have office hours and provide extra help for students as appropriate for all courses. In addition, for ICB courses in the first year (MTH 1110 Calculus, SCI 1110 Physics: Mechanics, ENGR 1110 Engineering of Compartment Systems; MTH 1115 Vector Calculus, SCI 1115 Physics: Electromagnetism and Waves, ENGR 1115 Engineering of Spatially Distributed Systems) Olin provides a more intensive remediation system described below.

Remediation During a Semester: Instructing faculty develop a remediation policy specific to the course they are teaching. At the discretion of the faculty member, students may be allowed to retake a test, re-write a paper or re-do other projects or assignments. Students may get remedial assistance from faculty, peer tutors (available to all students in some courses) or individual tutors. Individual tutors are assigned by the Office of Student Life when recommended by a faculty member or adviser. Students who feel that individual tutoring would be helpful to them should contact the Assistant Dean of Student Life for Advising to discuss academic concerns and possibilities for individual tutoring help as early in the semester as the need becomes apparent.

Remediation Between Semesters: Remediation following the completion of a course is available for all ICB courses in the first year. This form of remediation is self-directed without formal or intensive faculty contact and is not available for any course outside of the first year ICBs. A student **must** remediate the course if he or she gets an F (or NR in the first semester). A student **may** remediate a course if he or she gets a grade of D. When the course instructor submits any remediation grade (NR, F, or D) to the Registrar, he or she must at the same time e-mail (copied to the adviser and the Assistant Dean of Student Life for Advising) an Intersession Remediation Plan to the student. This plan will detail the work to be completed, interim due dates, and grading criteria. If the remediation is successful, it is the instructor's responsibility to file the revised grade with the Registrar by the fifth day of classes of the subsequent semester. The new grade will replace the original grade, but in no case may it be higher than a C.

If a D is not remediated by this date, no further remediation is possible and it becomes permanent. If the grade remains a NR or F, the student must meet with the instructor and adviser to develop a Subsequent Semester Remediation Plan as described below.

Remediation in a Subsequent Semester: If the student does not successfully remediate with between semester activities, a Subsequent Semester Remediation Plan must be developed. The student has one calendar year from the end of the course to complete this remediation. The student is responsible for arranging a meeting with his/her instructor and adviser to develop this plan, get appropriate signatures, and file it with the Assistant Dean of Student Life for Advising. This plan will be individually developed based on the specific remediation concerns. It might include completing a series of tests or problem sets, retaking the course when it is offered again at Olin, taking a comparable course elsewhere with prior approval from the Transfer Credit Subcommittee of the

Academic Recommendation Board, or other remedy. If the remediation consists of less than a full course equivalent (e.g., retaking the course, taking a comparable course elsewhere), the highest grade that can be received is a C. If it consists of a full course equivalent, the transcript will be adjusted to reflect a R for the first attempt and the new grade will appear on the transcript in the semester when the new course was taken.

If remediation is not completed by one calendar year from the submission of the original grade, no further remediation is possible. The student must still pass the course before graduation under the terms of the Grade Replacement Policy for any Olin course *(see above)*.

Grade Change Policy

Dispute of a Grade

Students wishing to dispute a grade should first have a discussion with the instructing faculty member. If the student and faculty are in disagreement after the discussion, the student may appeal to the Dean of Faculty. The Dean of Faculty will meet with the student within 14 days of the appeal and will solicit a statement from the faculty member. Following this process, the Dean of Faculty will review the case and submit a recommendation to the faculty member. The faculty member will then make a final decision, in consultation with the Dean of Faculty.

After one calendar year (from the end of the original grading period), all grades are final. This applies to clerical errors, grade disputes, remediation, and the grade replacement policy.

Course Withdrawal Policy

Students may not withdraw from courses within the Integrated Course Blocks during their first year at Olin. Students may withdraw from other courses up to **Tuesday, November 30, 2004** in the fall semester, or **Thursday, April 21, 2005** in the spring semester, provided they remain enrolled in 12 degree credit hours. To withdraw from a course, students need written approval from the instructing faculty member and their adviser. Students must then process the course withdrawal at the Student Accounts and Records Center. A grade of Withdrawn, W, will be entered for the course and will not affect a grade point average. Credits attempted will be noted, but course credit will not be earned. Students are responsible for meeting with their adviser to determine how the credits, and/or requirement will be completed in the future.

Olin students enrolled at another college must follow the academic policy on course withdrawals for the host school.

Declaration of Major/Change of Major

Students are expected to declare their major no later than the beginning of their third semester. Major declaration forms are available on Blackboard and must be signed by the student and his or her adviser.

Change of majors can be submitted using a declaration of major form. Students that change their major should be aware of their remaining degree requirements. Additionally, they are responsible for tuition, room/board and fees for any semesters beyond the eight covered by the Olin scholarship.

Definition of Full-Time Status

Enrollment at Olin College is for full-time study in engineering. Students are expected to follow the curriculum design for each class year and carry a usual load of sixteen (16) degree credits. The definition of full-time study is a minimum of twelve (12) attempted degree credits each semester and a maximum of twenty (20) attempted degree credits each semester. Part-time study is generally not available at Olin College, however, special cases will be considered by the Assistant Dean of Student Life for Advising.

Final Exam Policy for Excused Absences

Students who are unable to take their final exams for legitimate reasons and wish to request a make-up exam generally must obtain advance authorization from the instructing faculty members and the Office of Student Life. In the event that advanced authorization cannot be obtained due to extenuating circumstances, students should contact the Office of Student Life and the instructor(s) as soon as they are able. If the exam is not completed prior to the end of the grading period, a grade of Incomplete, I, will be recorded on the student record. An incomplete grade is a temporary grade that does not affect a grade point average.

Independent Study and Undergraduate Research

Independent Study

Students may enrich their educational experience by developing an independent course of study tailored to their individual goals. Students may apply for independent study if they are in good academic standing, if they show they have suitable background for undertaking the project, and if they indicate the merit of the proposed work. The range of independent study subject matter is limited by faculty expertise and faculty time. Independent Study courses may not be used in place of required courses, and independent study activities do not take the place of courses that are regularly offered at Olin, Babson, Brandeis, or Wellesley. All independent study courses are graded on a Pass/No Credit basis.

With careful planning, students may engage in independent study courses that satisfy elective course degree requirements. These courses are generally taken by junior and senior students who have demonstrated aptitude for independent work, who have appropriate background, and who have exhausted available course resources. Up to six credits of Independent Study courses may be used toward elective course degree requirements. Independent Study courses do not count toward the required Technical Self-Study course. Students wishing to apply independent study credit toward elective course degree requirements must receive prior approval from the faculty supervisor and the Academic Recommendations Board. Independent studies used to satisfy elective course degree requirements must be closely related to the faculty supervisor's area of expertise.

Research

Undergraduate research at Olin College is an activity that is initiated and supervised by a faculty member who defines a project and fosters the discovery process for the student. The research may be original or it may involve gathering or reformulation of existing information. All research that involves undergraduates should have as its main goal furthering the education of the student participating in the research, and all research projects should comprise intellectual content that is equal to, but does not vastly exceed, the educational level of the undergraduate. Research projects offer rewarding educational experiences and involve intense and productive collaborations between students and faculty.

Olin offers many opportunities for faculty-directed undergraduate research, including semester-long courses during the academic year and full-time participation in summer projects. Students are encouraged to become involved in research early in their undergraduate career, and students may participate in research as early as their first year. Research projects typically relate closely to the research agendas of the faculty member, but students are invited to pursue avenues of inquiry that arise within the context of the faculty member's research. Funding for research is provided from both external grants and internal funds. Research projects during the academic year are graded as Pass/No Credit and may not be applied toward degree requirements.

Registration Process

Prior to each semester, there will be a designated registration period in which students will speak with their adviser and make choices for course selection.

The Add/Drop Period is defined as the first 10 class days of a semester. During this time, a student may alter his or her schedule with approval from the appropriate instructing faculty and his or her adviser. Requests for changes must be made during the 10-day period. Students are responsible for submitting their request electronically or in person at the Student Accounts and Records Center no later than the 10th class day. Courses cannot be added after the 10th class day. Special circumstances may be granted for BBW sponsored courses when there is a variation in the academic calendars.

Cross-registration: Eligible Olin students may choose to take courses at Babson College, Brandeis University and Wellesley College (BBW schools). Students are allowed to take one course at a host school per semester. Students are responsible for all deadlines and registration procedures related to the host school. Information regarding procedures for cross-registration is provided in the semesters' registration booklet.

Return from Approved Leave Withdrawal

Students wishing to return from a voluntary withdrawal, leave of absence or medical leave should contact the Office of Student Life.

Special Accommodations Policy

It is Olin College's policy to comply fully with all state and federal disability laws. Olin does not discriminate against applicants or students with disabilities, and will consider modification to academic programs where necessary to ensure that our requirements are not discriminatory, as long as the modifications do not fundamentally alter the nature of our programs. The Office of Student Life coordinates services for students with learning disabilities, sensory impairments, psychological disabilities, and medical conditions. Students are responsible for identifying themselves to the Assistant Dean of Student Life for Advising and providing appropriate documentation of their disability and need for accommodation in a timely manner. Students requesting accommodation should contact the Assistant Dean of Student Life for Advising as soon as possible after matriculation. Services for students with learning disabilities may include, but are not limited to, academic accommodations, coaching on organizational and time management skills, faculty notification, and academic advising. Services for students with physical, sensory, or psychological impairments as well as medical conditions may include, but are not limited to, academic accommodations, assistance with adaptive technology, accessibility accommodations, and academic advising. Any specific modifications granted will be based on detailed discussions with each student about their particular situation, and on information from a medical care provider concerning the student's disability and related needs.

Student Academic Performance

The Committee on Student Academic Performance will use the following guidelines during the 2004-05 academic year in determining the academic status of students. Students not in Good Academic Standing will be placed on probation. Students not in Good Academic Standing for two consecutive semesters will be reviewed by the committee and may be required to withdraw. The committee may consider extenuating circumstances in applying these general guidelines.

Qualitative Measure of Academic Performance

Student's First Semester: Good Academic Standing is defined as receiving Pass grades in all courses by the start of the second semester.

Subsequent Semesters: Good Academic Standing is defined as having a minimum

cumulative grade point average of 2.00 by the start of the subsequent semester.

Quantitative Measure of Academic Performance

In order to complete the degree in four years (eight semesters), each student will normally take 16 credits (four courses) per semester. Olin College expects students to make reasonable progress toward their degree each semester. As a result, to remain in good standing a student must complete a minimum of 12 degree credits each semester. The Committee on Student Academic Performance will review this quantitative measure in addition to the qualitative measure of a minimum grade point average.

Student Employment

Olin College students in good academic standing may work a maximum of 15 hours per week during an academic semester. The 15 hours are cumulative, including all on and off campus work. Students may work additional hours during vacation periods. Student employment procedures are available from the Office of Human Resources. Directions and required forms for student employment can be found on Blackboard. Reminder: you cannot begin work until all paperwork has been approved and processed. If you have questions about the process, contact Human Resources at x2429.

Hourly Pay Rates (subject to periodic review)	
Freshman Rate	= $8
Sophomore Rate	= $8.50
Junior Rate	= $9
Senior Rate	= $9.50

The increase in pay rate will occur for the first full pay period following the academic year.

Summer Student Employment

To qualify for summer housing on-campus, students will be required to work for the College a minimum of 30 hours/week. A $150/week rent equivalency as a taxable fringe benefit will be reflected on the student's pay stub and W-2. Students with internships or working for the College less than 30 hours/week will be charged $150/week in rent. The maximum number of hours a student can work is 40 hours per week. Because particular jobs may involve fewer hours, please check with the hiring supervisor before accepting a summer position.

Study Away Program

One of the founding principles of Olin College was that each student should have the opportunity to have a learning experience "away" from the College. This ideal was articulated early in the creation of the college with the expressed objective of having students learn to be citizens of the world. The Olin Away Program was created to deliver on this principle, and provide students with the opportunity to broaden their perspective and views of the world.

Students in their junior year can choose between three types of away experiences: a Direct Exchange Program, a Pre-Approved Program, or a Student-Designed Program. For additional information please refer to http://awayprograms.olin.edu/

Transfer Credit

Olin College does not accept transfer credit for incoming students. Enrolled students wishing to take a course at another college and transfer the credits to Olin must obtain prior approval from the Transfer Credit Subcommittee of the Academic Recommendation Board (ARB). A student will need to provide detailed information about the course including, but not limited to, a course description and syllabus. The subcommittee will ask appropriate faculty to review the course materials before granting

approval. If approved, the subcommittee will notify the student in writing. Once the course is completed, it is the student's responsibility to have an official transcript sent to Olin College. Provided the student meets the minimum grade requirement of B- for transfer, the course and the credits will appear on their Olin transcript. The grade does not transfer. The Olin College curriculum is for eight full semesters. Transfer credit does not imply that a student is able to finish his or her degree in less than eight semesters.

Passionate Pursuits

Frequently Asked Questions

Q: What is a "Passionate Pursuit" as mentioned in the curriculum model?
A: Success, whether personal or more widely recognized, occurs most often in those who have a passion for their work. Olin believes that learning to be passionate about one's work, to persevere through difficult times, and to enjoy play freely, are all tremendously important life lessons. In contrast to most educational institutions, we actively and explicitly promote this integrated approach to learning, work, and life. Our support of Passionate Pursuits promotes the idea that hobbies can be more than pastimes — they can become gateways to life-long learning and passionate endeavors. This is one of many ways in which Olin College gives acknowledgement to well roundedness and personal initiative. A passionate pursuit is an activity in which students propose a semester-long project,* solicit faculty participation, and establish objectives (i.e., learning goals, a deliverable, and/or a presentation or performance) that constitute satisfactory completion of the pursuit.

** A student can extend the end of semester Passionate Pursuit deadline if she/he believes more time is necessary. Please note that you may only undertake one pursuit each semester, so postponing completion of a pursuit requires you to either continue the same pursuit the following semester or cancel the pursuit without receiving credit.*

Q: How much time is devoted to Passionate Pursuits in the Olin curriculum model?
A: We are committed to limiting academic work to no more than 20 credits per semester. Students typically take four courses or 16 credits each semester. The remaining four credits may be used for a Passionate Pursuit, an independent study, research, or a fifth course (see section on Academic Policies). This time commitment implies that students have sufficient time to pursue their passions. Although we expect a wide range of variance from student to student and from week to week, we anticipate a rough time commitment of approximately 6-12 hours per week.

Q: Are Passionate Pursuits credit bearing?
A: We recognize that students' Passionate Pursuits can involve substantial learning and creative components. Therefore, we offer non-degree credit to students who can demonstrate such learning and creativity. Students can graduate without earning any credits for passionate pursuits. Students wishing to get non-degree credit for their passionate pursuits must, at the onset of the activity, submit a credit proposal to at least one faculty member (we encourage you to select two or three faculty) and get them to agree that the work is meritorious and that they will ultimately judge its quality. Outside experts may also play a role. The Safety Committee will review Passionate Pursuits deemed to have a unique level of risk. Credit proposals should explain the pursuit, describe the deliverables to be presented at the conclusion of the activity, and propose an assessment process.

Q: Will my Passionate Pursuits be listed on my transcript?
A: Yes, indeed, Passionate Pursuits will be listed on your transcript in the same section as other curricular offerings. Faculty will be asked to report assessment of your performance at the same time grades are submitted for other curricular offerings.

Q: How are Passionate Pursuits funded?
A: We recognize the need to provide financial support, via a grant process, for supplies and other related expenses. Students wishing to receive funds must submit a grant proposal to the Passionate Pursuit Board (consisting of faculty and students). The proposal should explain the pursuit, describe the deliverables to be presented at the conclusion of the activity, propose an assessment process, and identify and justify the resource requirements of the activity. The Board, administered by the Office of Student Life, meets throughout each semester to review proposals and allocate available funds. Different pursuits require different levels of funding, so not all students will receive the same amount of funding.

Q: What's this I hear about a presentation or performance at the end?
A: In order to earn credit for a Passionate Pursuit, students must give an assessed presentation or performance at the conclusion of the activity. This might take the form of a recital, an exhibition or demonstration, a technical talk, or a combination of the above. Note that this requirement does limit the scope of eligible activities — the activity must be amenable to a meaningful presentation or performance. The overseeing faculty will determine whether non-degree credit is merited after viewing this presentation or performance. It is possible that the presentation will be held privately due to intellectual property issues or concerns about issues of community acceptance, but all of your faculty "judges" must attend.

Q: Can you provide a hypothetical example of a Passionate Pursuit?
A: Yes, let's follow Polonius, an exuberant, witty, and hypothetical Olin student, through his pursuit. In early September, Polonius decides he wants to do pottery as a Passionate Pursuit. He writes a Passionate Pursuit proposal and convinces three faculty members that his plan to carve and burnish hand-built pieces is meritorious. They agree that he will receive three units of non-degree credit when he completes his pieces. With faculty assistance, Polonius revises his proposal to address some specifics. He also writes a short grant proposal to cover tool and clay costs and states that his deliverable will be an exhibition of four finished pieces and a presentation in which he discusses some of the history of this type of pottery. He estimates a budget of $200 and notes that he will need to use the Sorenson Family Visual Arts Center kiln at least twice. In late September, a committee of faculty and students reviews and approves Polonius's funding proposal. By December, he has made some significant progress on his pottery and research but does not feel ready to show. He notifies the three faculty that he will not show until the spring. While somewhat disappointed, the faculty understand that this work is on Polonius's own time table. In April, he feels ready to show his work, organizes an exhibition and gives an exhibition talk. The three faculty members attend the talk and exhibition and provide positive written feedback to Polonius. Based on this feedback and Polonius's exhibition, the three faculty promptly and proudly approve Polonius's promising and provocative Passionate Pursuit for three hours of non-degree credit and notify the Registrar.

Q: How do Passionate Pursuits differ from co-curricular offerings?
A: Co-curricular offerings are typically group activities while Passionate Pursuits will typically be individual pursuits. Co-curricular offerings are guided by faculty/staff; Passionate Pursuits will be student-directed (with some faculty input and feedback). Co-curricular offerings focus on fun, and may provide great opportunities for students to participate in entirely new experiences (i.e., no prerequisites other than student interest in the activity); Passionate Pursuits, although fun, are driven by individual passions. Co-curricular offerings will generally require a smaller time commitment than Passionate Pursuits. Co-curricular performance will not be formally assessed.

Q: How does a Passionate Pursuit differ from a student club?
A: A student club is an extra-curricular activity and is not required to have a faculty or staff adviser. Passionate Pursuits are part of the curriculum and, as such, faculty members will assess academic performance.

Q: Can a Passionate Pursuit evolve into an extra-curricular club?
A: Yes, a Passionate Pursuit might stimulate the creation of a student club. If other students express interest, it would be logical to approach the student government (Council of Olin Representatives) for recognition and funding.

Q: What are the advantages of the Passionate Pursuit program?
A: The Passionate Pursuit program offers many benefits to students, including: practice at selling ideas and convincing others about the merit of one's passions, experience in securing funding through proposal writing, practice at teaching and presenting one's work, intrinsically motivated learning, an avenue for infinite student choice, student control over a component of their education, a prototype for lifelong learning, and the possibility of team activities.

Co-Curriculars

Frequently Asked Questions

Q: What is a co-curricular offering?
A: Co-curricular offerings are (1) non-credit activities combining fun and intellectual awareness, (2) scheduled for a limited time (e.g., one semester), (3) led by a staff or faculty member or by a student working in concert with a faculty/staff member, and (4) funded by the Office of Student Life. They differ from curricular offerings in that they are not graded and attendance is not strictly enforced. They differ from extra-curricular activities in that they have an intellectual component, faculty/staff leadership, and limited lifespan.

Q: What are some examples of co-curricular offerings?
A: The following co-curricular activities were offered during 2003-04:

- Adventures in Curling (Ed Frackiewicz)
- Amateur Radio (David Kerns)
- Current Events Table (Ellen Cooney)
- For Intelligent Lovers of Movies = F.I.L.M. (Maruta Vitols)
- Go (Gus Heck)
- I Can Program That! (Elaine Yang)
- Issues in American Higher Education (Rod Crafts, Zach First and Jill Marden)
- I Was a Slashdot Junkie Reading Group (Allen Downey and Elaine Yang)
- La Vie Bohème – French Conversation (Joanne Pratt and Burt Tilley)
- Olin Dance Project (Sarah Spence)
- Olin Gallery of Philanthropists (Mike Moody)
- Olin Speaks Frankly: The Art of Public Speaking (Michelle Knight)
- Ornithology for Engineers (Rod Crafts)
- ¡Por supuesto! – Spanish Conversation (Linda Canavan and Pedro Perez)
- Preparation for the Mathematical Contest in Modeling and the Interdisciplinary Contest in Modeling (John Geddes, Mike Moody, Sarah Spence and Burt Tilley)
- Stammtisch – German Conversation (Joe Hunter)
- The Art and Traditions of Middle Eastern Dancing (Zhenya Zastavker)
- The Triumph of Individual Style (Leslie Larocca)

Q: Will my co-curricular participation be listed on my transcript?
A: Yes, assuming the sponsoring faculty or staff member notifies the Registrar that your involvement has been worthy of notation. Faculty and staff will be asked to report such participation at the same time grades are submitted for curricular offerings.

Q: How do co-curricular offerings differ from the Passionate Pursuits?
A: Co-curricular offerings are typically group activities while Passionate Pursuits will typically be individual pursuits. Co-curricular offerings are guided by faculty/staff; Passionate Pursuits will be student-directed (with some faculty input and feedback). Co-curricular offerings focus on fun, and may provide great opportunities for students to participate in entirely new

experiences (i.e., no prerequisites other than student interest in the activity); Passionate Pursuits, although fun, are driven by individual passions. Co-curricular offerings will generally require a smaller time commitment than Passionate Pursuits. Co-curricular performance will not be formally assessed.

Q: How does a co-curricular offering differ from a student club?
A: A student club is an extra-curricular activity and is not required to have a faculty or staff adviser. Clubs may be funded by the student government (i.e., the Council of Olin Representatives = CORe). Participation in a student club may be self-reported for posting on a student transcript but will be listed in a separate section (not for any particular semester). Also, while co-curricular activities are time-limited (e.g., one semester), student clubs can be perpetual.

Q: May students lead co-curricular offerings?
A: Yes, but only in concert with a faculty or staff member.

Q: Can a co-curricular offering evolve into an extra-curricular club?
A: Yes, if a co-curricular offering is likely to extend beyond a semester and/or becomes student led, it would be logical to approach the student government (Council of Olin Representatives) for recognition and funding.

Q: How are co-curricular offerings scheduled?
A: After Dean of Student Life approval, the faculty or staff sponsor announces an initial organizational session where participants compare schedules and select regular meeting times. The Registrar does not schedule these offerings.

Q: Can a co-curricular offering be repeated in subsequent semesters?
A: Yes, so long as the faculty/staff sponsor is willing and any necessary conditions are met.

Library

The library creates an information environment, both virtual and physical, that supports discovery and innovation within the Olin community. Located on the ground floor of the Olin Center, the physical library space encourages thought, discovery, serendipity, play, tranquility, and inspiration. Our virtual space strives to provide cutting edge access to information. The library staff achieves these goals through the development of outstanding resources and services, as well as the cultivation of spaces to work in groups, tinker with realia, and find solitude — any time of day or night. Access to electronic library resources and information about library services and policies can be found on the Library's Portal at: http://library.olin.edu/whatwedo.cfm

What we do:

- Build collections of books, journals, realia, and other resources in electronic and physical formats. Book collections focus on engineering, science & technology, math, photography, art, design, creativity, ethics, philosophy, and pedagogy.
- Administer access to indexes and databases, and provide guides to navigate these resources.
- Establish agreements with other area college libraries to permit borrowing and access to material from Babson, Bentley, Brandeis, MIT, Pine Manor, Regis, and Wellesley.
- Promote information fluency through library instruction.
- Conduct research consultations individually and in groups.
- Provide reference assistance.
- Maintain space for group and individual study.
- Acquire or borrow materials not owned by Olin from other libraries or document providers.
- Inform community about current issues and hot topics.
- Organize the library portal to maximize ease of use and information retrieval.
- Create custom web-enabled Academic

Computing applications and serve as an incubator for similar student and faculty initiatives.

- Build and manage Olin archives.
- Partner with faculty on special projects such as semantic web research and digitization of historical collections.

Assessment

Olin is committed to continual feedback and improvement in all areas of the institution. This commitment brings with it certain responsibilities for all community members. Because of this commitment to continual improvement, students and other community members are frequently asked to provide assessment information. It is each individual's responsibility to respond honestly, promptly, and fully to such requests.

Academic Advising

Coursework and advising are different aspects of the same process — developing a well-educated person. Olin College views advising as a central role of our faculty. Students' relationships with their advisers are among the most important ones they will establish here and can have a significant impact on their Olin education. The advising system includes individual advising, advising families, the Sibbs program, and writing and continually re-writing personal learning plans.

Individual Advising

Every student has an Olin faculty member as an adviser. Every adviser's goal is to facilitate students' academic and personal development throughout their education at Olin. Although they help students with courses and other academic choices, their most vital responsibility is to help advisees manage the difficulties and stresses inherent in any academic setting. Students meet with their advisers regularly all four years, at a rate determined by the student and the adviser.

Advisers are not around just to approve courses or discuss academics. They serve a variety of functions including mentoring, crisis awareness and support, facilitating learning plan writing, providing institutional information, and helping students find a balance among curricular, co-curricular and extracurricular activities. Students should view advisers as helpful resources for whatever issues they are dealing with — academic, social or personal. When advisers do not have the needed information or expertise, they help find someone who does.

Students may remain with one adviser throughout or change advisers at the end of freshman, sophomore or junior year. A student wishing to switch advisers at other times may discuss this with the Assistant Dean of Student Life for Advising. Olin wants advising to be successful and will do whatever we can to make this relationship supportive, positive and effective.

Advising Families

Individual advising relationships are set within *advising families* consisting of 3-4 faculty members and their advisees. Students will often meet individually with their primary adviser. Other times they will meet with some or all of the other advisers and advisees in their families. Some families have more social activities while others have more group discussions. Some work more as whole families, while others meet more in sub-groups (e.g., all sophomores in the family, everyone choosing a major). But all provide a structure for incoming students to meet upperclassmen, allow for cross class meetings and discussions, give students multiple faculty perspectives, and plan periodic family social activities. As Olin grows, advising families will grow and change as well, regrouping to accommodate new faculty and students.

Sibbs Program

The Sibbs program builds bridges (hence the double "b") between freshmen and upper class students. Volunteer upper class Sibbs (often from the same advising family) adopt a freshman to help him or her adjust to the unique culture, quirks and inside secrets of Olin. They contact their incoming Sibb over the summer to answer questions before arrival. Early in the year, Sibb pairs get together for a meal at least weekly. Upper class Sibbs also introduce their freshmen Sibbs to people and places in the area by inviting them to do several activities during the fall. The most important role, however, is to talk with, answer questions from, give information to, and generally be available to the incoming student. If either member of the Sibb pair feels that the relationship is not working well, they should discuss this with each other or contact Assistant Dean of Student Life Ellen Cooney.

Learning Plans

A A learning plan is a living document that helps shift ownership of learning from the institution to the individual student, serving as both a catalyst and record of this process. Although the format of the plan may change to coordinate with curricular and assessment developments, students will be asked periodically to define or redefine goals and assess progress towards them through their learning plans throughout their four years at Olin. Goals may vary widely, from course related to personal or career issues. Whatever the goals are, the learning plans help the student choose wisely from the myriad of curricular, co-curricular and extracurricular options available and make adjustments to get the most out of their Olin experience.

Some advisers will meet with students individually to discuss learning plans. Others may do this as part of a larger group or family meeting. However this is done, students must submit periodic "entries" to their adviser at pre-determined times during the year. Certain activities, such as signing up for courses or passionate pursuits, are contingent on having learning plans up to date. Students who change advisers must submit updated learning plans to their new adviser by their first meeting.

Frequently Asked Questions

Q: There is so much good stuff to choose from, I don't know where to start. Can my adviser help?
A: Absolutely. One of your adviser's jobs is to help you think through your goals and plans and see how coursework and other activities fit into these. Reviewing your learning plan can also help guide these decisions.

Q: I thought that all a college adviser did was to sign course sheets? Right?
A: Wrong, wrong, wrong. True, advisers do help with course selection. But they also do all sorts of other things. Just see the description above and you'll get an idea of all the ways you can relate to your adviser. If you just see your adviser about academics, you're missing out on one of the most important relationships you can establish here. Don't do this.

Q: Things are going fine. Does my adviser really want to see me?
A: Yes. Your adviser wants to stay in touch whether things are going well or not. It's important to develop and maintain this relationship. Also, your adviser may challenge your thinking about your education in ways you haven't even considered or start you thinking about courses, majors or careers in different ways. Seeing your adviser is not just about dealing with problems.

Q: My time management skills are, shall we say, a little lacking. What does the advising system have to do with this?
A: Lots. Advisers can help you find ways to manage your time better. They often have tips to share, and may have useful perspectives on what's going wrong. Other students in your family have probably run into some of these same problems. This might be a good issue to raise in a family meeting. Lots of students find that time management skills are an important learning plan goal. Writing this into your learning plan may help you focus consciously and

consistently on this issue. In the long run, time management skills can be one of the most important things you learn in college.

Q: Things don't seem to be working out with my adviser. What should I do?
A: If your adviser match just doesn't seem to be working out, try talking with your adviser or one of the other faculty in your advising family. Maybe they can help you figure out what to do. Also, you can always talk with Ellen Cooney, the Assistant Dean of Student Life for Advising. She can help you sort out the problem or arrange a switch to a different adviser who may be a better match. The main point is — don't just sit there, do something to change it.

Q: I'm so busy and overwhelmed, why do I have to take the time to write a learning plan?
A: A. Sometimes it's just when you seem the most confused or overwhelmed that taking the time to reflect on your learning plan is most important. It's easy to get caught up in day to day activities and pressures. The learning plan is geared to help you step back from this periodically and look at the big picture. Doing this may help you put things in perspective and redirect your efforts. You may want to cut out some activities that are taking lots of time but not contributing enough to your experiences here or even add something new that would help you accomplish your goals better.

Q: I just broke up with my girlfriend and am feeling terrible. My adviser, who after all is a professor, really doesn't want to know about that, does he?
A: Absolutely. Advising at Olin is not just about courses and academic progress. Olin is focused on the whole person. If you are struggling emotionally or socially, that is important — not only because it impacts your learning, but because you, as a whole person, matter here. Your adviser can think things through with you, or help you find someone formally trained to do this. You don't have to do this alone — we are here to help.

Q: My adviser doesn't seem to know much about my planned major. Should I switch advisers?
A: That depends. Some students want to stay with an adviser because they like the relationship and feel they get valuable non-academic advice. If your adviser doesn't know the answer, feel free to ask someone else. There are many people around willing and eager to offer advice. If you don't know where to go, ask your adviser to direct you to someone. Other students might prefer to switch to an adviser who works in their area of academic interest. Both ways work fine. It's up to you.

Q: I have a great idea about improving the advising system. Whom should I talk to?
A: Great. Talk with your adviser or with Ellen Cooney. We're always eager to hear new ideas.

Student Accounts and Records (StAR) Center

Campus Center, Suite 300
Email: star.center@olin.edu
Phone: 781-292-2340
Fax: 781-292-2344
Web: http://star.olin.edu

The mission of the StAR Center is to provide Olin students with excellent customer service with one stop shopping. From registration, bill payments, ID cards to transcripts, it all happens through the StAR Center.

Bill Payment

Fall 2004 bills were mailed to students' permanent address July 1st, due August 2nd, Spring 2005 bills are sent to the students' local mailbox November 1st, due December 1st. For a complete schedule of Tuition and Fees please refer to the 'Notification of Costs' for your respective class distributed to students Spring 2004. Late payments are subject to a 10% late fee on all billed expenses for that semester.

Course Registration

Course registration takes place in November for the spring semester and in April (or August for new students) for the fall semester. Materials are distributed to students and advisers approximately 10 days prior to registration. For additional information, please reference Registration Process in the Academics section of this handbook.

Enrollment Certifications

Enrollment certifications for Olin students a re available at the StAR Center. Certifications are often required for health insurance and scholarship notification. You may request a certification in writing, via e-mail to star.center@olin.edu or via fax.

Health Insurance

The Commonwealth of Massachusetts requires students to be covered by a comprehensive health insurance program. Accordingly, the College makes available a general health insurance program to meet the standards set by the Commonwealth through the Chickering Group. This policy begins in the fall semester and continues for 12 months. Insurance information is mailed in June. Students will be irrevocably enrolled in this plan unless a waiver is completed and received by the Student Accounts and Records Center prior to July 1st. The waiver stipulates that personal coverage will be maintained during the enrollment period. If a waiver is not on file by July 1st, the student will be billed for the insurance premium and will remain responsible for payment of said premium. The waiver must be renewed annually.

ID Cards

Replacement identification cards are available at the StAR Center. Payment of the replacement ID fee is due at time of issuance.

Incidental Charges

In addition to Tuition and Fees, Olin College reserves the right to charge the following to a student's account:

Returned Check Fee	$25
Replacement ID	$25
Replacement Key	$25

Public Safety notifies the StAR center of any parking fines which are charged to the student's account and are due immediately.

Hard phones and cable are available to each student. Prices are set yearly and sent out for review with the Fall semester bill.

Need Based Scholarship

Families interested in applying for additional assistance in excess of the Olin College Scholarship are urged to:

- submit a copy of the FAFSA (Free Application for Federal Student Aid)

  For more information go to http://www.fafsa.ed.gov/index.htm

- submit a copy of the parents' and student's federal tax forms.

Note: Olin College only needs copies of the above documents. Students do not have to process the FAFSA with the government. Simply fill out the form and submit the hard copy to Olin. We will make a determination of need for each student based on the information provided. Please send information to the Student Accounts and Records Center. To determine eligibility by the fall billing cycle, information must be received by mid April. Students receive all relevant information in their 'Notification of Costs'.

Students applying for need-based financial aid are expected to provide $3,500 in self-help — $2,000 from summer savings and $1,500 from on-campus employment. Any demonstrated need beyond self-help may be met with outside scholarships and loans.

Refund Policy

Students who leave Olin College without approval are not entitled to a refund. A Refund is made on billed expenses* and does not include the Student Activity Fee or the Health Insurance Premium. Students are not eligible to receive cash or credit for any unused tuition in their scholarship under any circumstances. Approved withdrawals or leaves may be eligible for a refund on billed expenses based on the following schedule:

Leave prior to 1st Day of Instruction	100% refund
Leave prior to the 20th Day of Instruction refund	75%
Leave up to the 33rd Day of Instruction refund	50%
Leave after the 33rd Day of Instruction	0%

The refund policy also applies to any need based aid that was previously awarded for the semester. Need based aid is refunded to the college using the percentages above. Olin College will adhere to any provisions and refund policies set forth by outside scholarship agencies. Any balance created by scholarship refunds is immediately due by the student.

**The expense of the Laptop Purchase program is billed over a two-year (four payment) period. The student is responsible for full payment of the laptop as contracted by the promissory note signed on the day the student receives the laptop. Therefore, if a student leaves Olin College, he or she must make a full payment for the laptop according to the terms of the promissory note. Included in the total cost of the laptop is a 5% Massachusetts sales tax.*

Scholarship Policy

The Olin College tuition scholarship is for eight consecutive semesters of full-time study. Anyone permanently disqualified to attend or return to Olin College for academic or disciplinary reasons will forfeit the remaining portion of the scholarship. Study away (which requires pre-approval) or an internship for credit counts as one of the eight scholarship semesters; the student is expected to pay for costs associated with any such activity, including host institution tuition and fees (if required). For mid-semester leaves of absence, the partial semester counts as one of the eight scholarship semesters; payment of tuition is required for any semester(s) beyond eight before graduation. For end-of-semester leaves of absence, the semester on leave does not count as one of the eight scholarship semesters. Olin College provides accommodations for documented disabilities. In extenuating circumstances, exceptions may be granted by the Provost.

Transcripts

Official and unofficial transcripts are available at the StAR Center. Transcripts represent all work within the Olin Continuum. Transcripts contain confidential information and can only be requested in writing from the student. Students can request a transcript in one of four ways. Complete a transcript request form (found at http://star.olin.edu and on Blackboard) and submit it in person, by mail, by fax, or by e-mail (from an Olin account) to star.center@olin.edu. Please allow a minimum of two days for processing.

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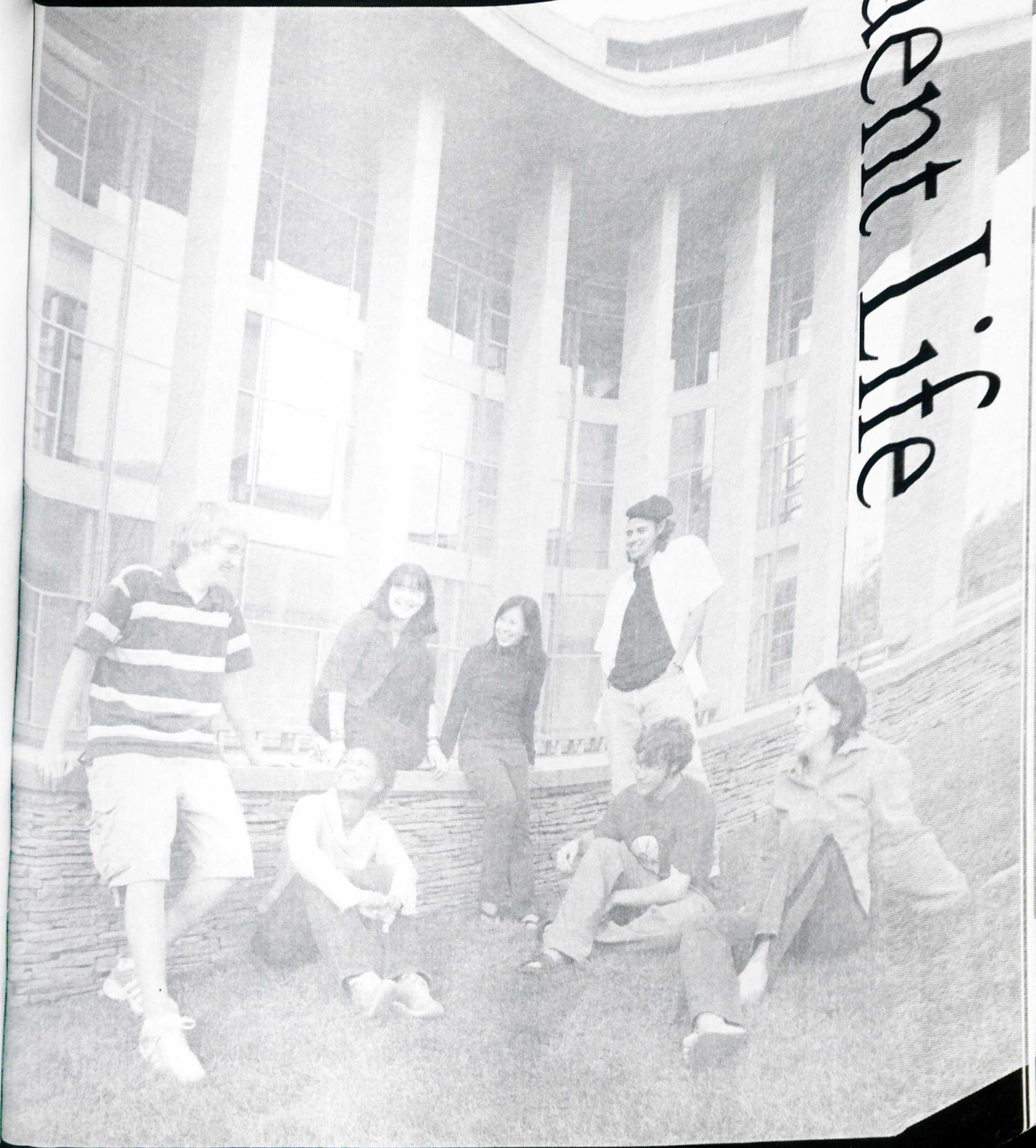


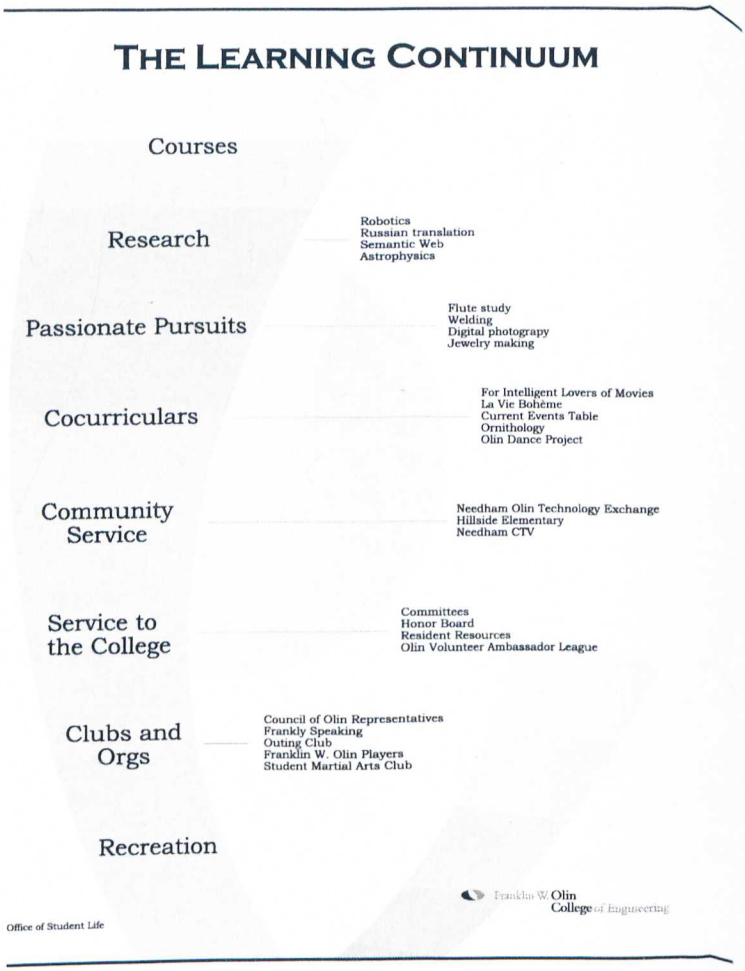
Student Life

(general overview)

The first few classes at Olin College have the rare ability to help create the campus culture. Each student has the chance to make a real impact on the direction of programs, available opportunities and the overall atmosphere of the new college.

While still new, Olin already offers the support, flexibility and services students need for a successful, well-rounded college career—from a wide-range of clubs and activities to academic advising and health services.

The Office of Student Life also takes student development one step further with the Olin College Learning Continuum. While nearly every college in America offers academic courses and student organizations, rarely is much thought given to the unstructured zone between the curriculum and extra-curriculum, or the connections between them. At Olin, we have given this zone a lot of thought.



The Olin College Learning Continuum consists of courses, undergraduate research opportunities with faculty, non-degree credit Passionate Pursuits, transcript noted co-curricular offerings, community service, committee work or other service to the college, clubs and organizations, recreation, and free time. The Office of Student Life staff encourages student participation along the full range of opportunities in the Learning Continuum and works to foster connections among the elements on the continuum.

For more detailed information about policies and services, please refer to our student handbook.

Honor Code

A fundamental element of Olin's culture is trust. As such, our Honor Code requires all members of the Olin community to conduct themselves with honor and integrity. The code, drawn from a few core values, consists of a small set of intentionally broad standards by which every action must be measured. While a small number of policies illuminate Olin's principles, students live by the core values embedded in the code. To read the full code visit the student life page of the Olin website, http://www.olin.edu/student_life/.

Community Service

Mission

One of the guiding missions of Olin College is to instill a spirit and practice of "giving back" among students through significant and ongoing service to the community. Philanthropy has been the central force in the F.W. Olin Foundation since its inception and Olin College is committed to supporting and continuing this tradition among its students, faculty and staff. Olin College encourages community service by providing financial support through the Office of Student Life and reserving time dedicated to community service weekly in the schedule. To learn more about community service at Olin and how you can be involved, read on! More information is available on the website at http://volunteer.olin.edu

Structure

The Organization to Support, Encourage, and Recognize Volunteerism (SERV) helps students, faculty and staff get involved with a variety of community service activities at Olin. SERV consists largely of individual community service projects, groups of students, faculty and staff who meet regularly to do community service. Any member of the Olin community may start a project. Each project selects its own leader who is responsible for all aspects of the project including getting volunteers, determining budget needs, coordinating with the appropriate outside organizations and making necessary practical arrangements. SERV is available throughout to provide advice and support.

Project leaders attend periodic meetings of the Association of Project Leaders (APL). At APL meetings, project leaders report on individual projects and discuss common issues and concerns across projects. They consider ways to coordinate projects and generally support and improve the functioning of community service at Olin.

SERV is governed by five elected student officers and three faculty/staff advisers who foster community awareness, increase involvement in community service activities and generally work to support and coordinate community service activities at Olin. They coordinate with outside groups seeking volunteers, plan one-time and whole community events, maintain the website (http://volunteer.olin.edu), charter projects, make budgeting decisions and generally deal with community service concerns that arise throughout the year.

Frequently Asked Questions

Q: How can I learn what community service projects are happening?
A: That's easy. The best place to start is the Activities Fair at the beginning of each year. At this fair, ongoing projects have tables with information about what they do, volunteer opportunities and someone from the project to talk to. Prospective project leaders may also have tables to recruit others who might like to join them in starting a new project. Representatives from Needham community organizations may also be looking for volunteers interested in starting projects with their organizations. During the rest of the semester, you can always look on the Community Service website, http://volunteer.olin.edu. This will give you information about ongoing projects and leaders, SERV membership and lots of other ideas about what is going on and who to contact. At any time, you can approach any member of SERV or project leader and they can direct you to the right person to discuss your interests.

Q: What are some examples of ongoing community service projects at Olin?
A: There are lots of projects. A few of these are NOTE (Needham Olin Technology Exchange), Animal Rescue League, the Hillside Elementary After School Program, and Habitat for Humanity. The website maintains an updated list of ongoing projects and volunteer needs.

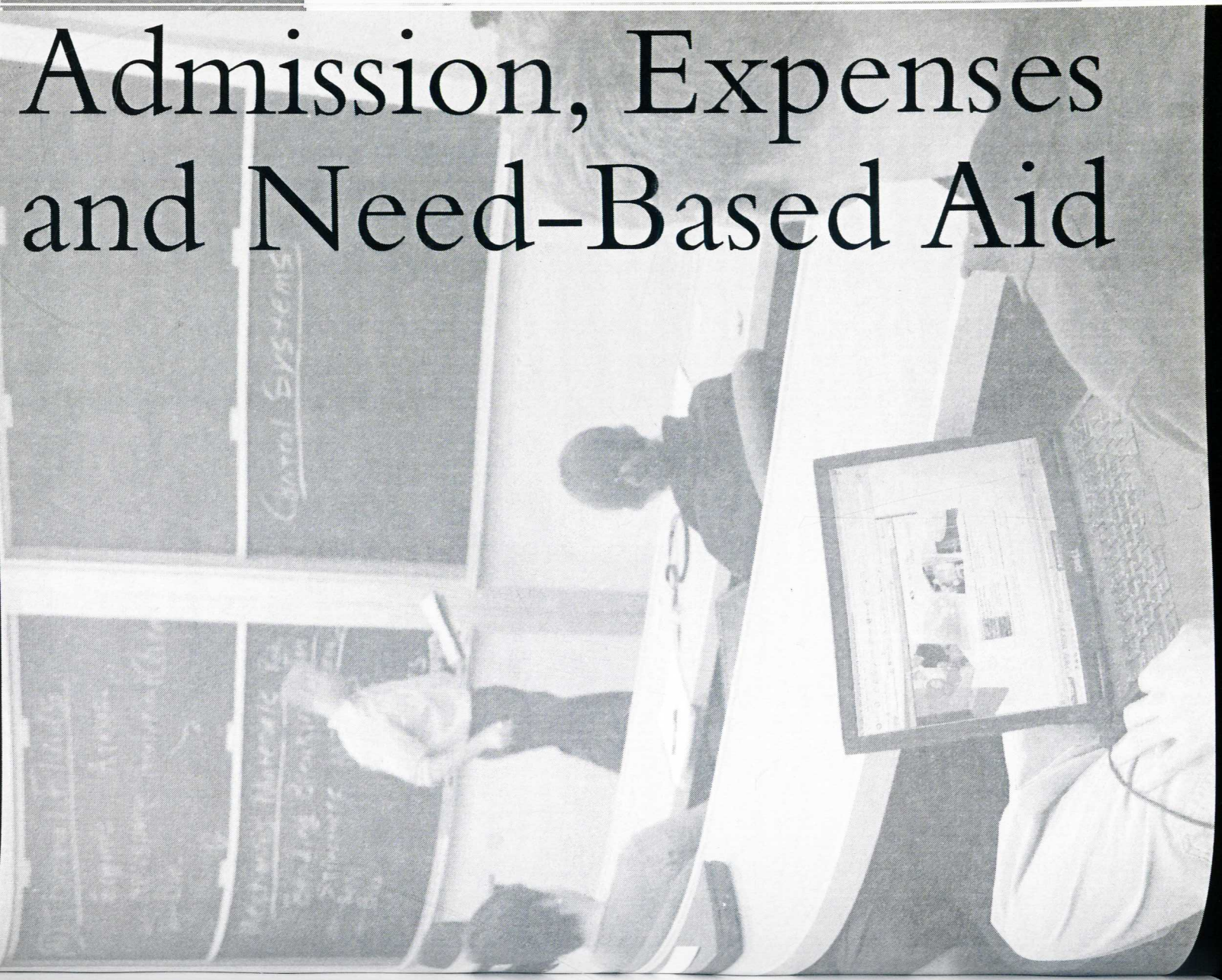
Q: I heard about a great project. How do I join?
A: One easy way to get involved is to go to the Activities Fair in the fall and simply sign up at one of the community service tables. If you miss that opportunity you can still join a project. Most groups are happy to get new mem-

bers at any time. The projects page of the website gives the names of leaders for each project. Just email the leader of the project in which you're interested and s(he) will be happy to help you out. Also remember that members of SERV and the Project Leaders are eager to help you connect with the project that's right for you. Just ask.

Q: I have a great idea for a new community service project. Can I start one? How?
A: That's great! SERV is always looking for new project ideas and people to lead them. If you have an idea, or even a faint inkling of an idea, talk with anyone in SERV or any current project leader. An important function for both these groups is to help prospective leaders conceive and implement their ideas. They can provide ideas, support, information and even some financial support to help you get started. The SERV website also has lots of information for project leaders.

Q: What happens if I get hurt doing a community service project?
A: The risk of getting hurt and the need for medical attention is generally the responsibility of the volunteer. Incidents involving injury should be immediately reported to the leader in charge and/or Dean of Student Life.

Admission, Expenses and Need-Based Aid



Applying to Olin

Admission Statement

Olin College will enroll approximately 75 students who rank among the top in the country for the Class of 2008. By traditional measures (course rigor, test results and achievement) the quality of students we seek will be outstanding; however, we place equal importance on personal character, creativity, risk-taking, unusual life experiences and an entrepreneurial spirit. Specifically, what we look for in applicants is:

- Exceptional academic ability and performance, especially in math and science;
- Strong written and oral communication skills;
- Excellence in co-curricular and extracurricular activities;
- Evidence of leadership and collaboration;
- Understanding of Olin College's mission;
- Adventurous and entrepreneurial spirit;
- Energy, commitment to high standards, perseverance and a sense of humor.

Olin College will strive for gender balance and a student body that is multidimensional, representing a broad range of cultural, economic and geographic backgrounds. At the present time, Olin College is not approved by the INS to issue I-20 forms (student visas). However, we will strive for a multicultural presence on campus by enrolling international students with U.S. citizenships and other students with significant international experience. U.S. permanent residents and green card holders are eligible for admission.

The Olin Application

The Olin College admission application is available on-line. A .pdf version of the application, printable from the Admission web site, is also available, but candidates are strongly encouraged to apply *on-line*. There is no Early Action or Early Decision at Olin College.

Admission Process

The application for admission consists of seven parts.

1. Basic biographical information
2. $60 U.S. application fee and Affidavit
3. Secondary school report (returned by your counselor with official transcripts)
4. Two teacher recommendations — one from a math or science teacher and one from a teacher of your choice
5. Results of the SAT-I or ACT, plus three SAT-IIs (Writing, Math I or II, and the science of your choice). Our CEEB code is 2824; the ACT code is 1883.
6. Two essays — one 500 words and the other 300 words
7. Personal resumé of activities, honors, awards, employment, etc.

After applications have been reviewed 150 top applicants will be selected to attend one of our two "Candidates' Weekends" in late February and early March. During these weekends candidates will participate in group design exercises, interviews and informal discussions with Olin faculty and students. From this group of candidates we will select the incoming class.

Application Timetable 2004-05

December 2004
SAT I and II/ACT testing must be completed

January 17, 2005
Deadline for submitting applications and supporting materials

February 7, 2005
Applicants notified if they have achieved "candidate" status

February 25-26, 2005
Candidates' Weekend #1

March 4-5, 2005
Candidates' Weekend #2

March 20, 2005
Notification letters are mailed

March 22, 2005
Notification letters are posted on the web

May 1, 2005
National Candidates' Reply Date

Admission Visits and Tours

Tours and information sessions are available by appointment only. Please email visit@olin.edu or call the Office of Admission at (781) 292-2222 to make a reservation.

Day and Overnight Visits

Day visits allow prospective students to attend a class, meet current students and faculty, and enjoy a meal in our Dining Hall. Class visits are scheduled by appointment on Mondays through Thursdays from *early-to-mid fall.*

Overnight visits for high school seniors can be scheduled on Monday and Wednesday nights from *early-to-mid fall.* Space is limited, so please contact the Office of Admission well in advance to schedule your stay. In the spring, overnight visits are limited to admitted students.

Office of Admission Hours

Monday through Friday: 9:00 a.m.–5:00 p.m.

Selected Saturdays in the fall: 9 a.m.–12:00 p.m.

Please see the *visit* page on our website (www.olin.edu) for information about transportation, lodging and dining in the area.

Costs and Aid

Scholarship Policy

Olin's generous scholarship policy stems from one of the founding principles of the college—to provide a world-class engineering education at significantly reduced cost to students and their families. *All admitted students who enroll at Olin College receive an Olin Scholarship covering tuition during the four years of the baccalaureate program.* This scholarship is currently valued at approximately $130,000.

Estimated Cost: Academic Year 2004-05*

Below are estimated costs for the upcoming academic year. We expect nominal increases in these figures for subsequent years.

Unbilled Expenses		
Tuition	$29,400	(covered by scholarship)
Room	$7,000	
Meal Plan	$3,720	
Computer Purchase	$1,250	(estimate of $2,500 paid over two years)
Health Insurance	$650	(if needed)
Student Activity Fee	$100	

Unbilled Expenses	
Books & Supplies	$750
Travel & Incidentals	$1,500
Total Student Budget	**$44,370**
Olin Tuition Scholarship	– 29,400
Balance	**$14,970**

**Class of 2006, 2007, and 2008 deferred students refer to the "Notification of Costs 2004-05." Questions may be directed to the StAR Center, star.center@olin.edu or 781-292-2340.*

Need-Based Aid at Olin College

Need-based aid in the form of an Olin grant is available for students who demonstrate eligibility for expenses not covered by the Olin Scholarship. Federal methodology is used to determine expected family contribution. Expected summer earnings and on-campus employment are taken into account when determining eligibility. Students who wish to apply for need-based aid should send copies of the FAFSA (Free Application for Federal Student Aid) to Olin upon admission, along with copies of the previous year's tax returns.

An Example of Need-Based Aid

Cost of Attendance	$44,370
Olin Scholarship	–29,400
Net Cost	$14,970
Summer Earnings	–2,000
Campus Employment	–1,500
Balance	$11,470

Minus family contribution = Unmet need

Eligibility for need-based aid is determined by the FAFSA which calculates a family's ability to contribute. If the Family Contribution Figure is less than $11,470, the student is eligible for need-based aid from Olin College and other sources, including outside merit scholarships which can be applied toward non-tuition expenses.

Outside Scholarship Policy

All students are expected to pursue outside merit scholarships (local, regional, and national). These scholarships bring distinction to the student and to Olin. If the scholarship is non-restricted, the funds can be applied to billed expenses including room, meal plan, required laptop purchase and other educational expenses. If the scholarship is restricted to tuition only, it reduces the amount of the Olin Scholarship accordingly. The total of all scholarships, grants, and self-help cannot exceed the total Olin College student budget.

Note: National Merit and National Achievement Scholarships cannot be used at Olin until the college receives regional accreditation, even though a high percentage of Olin students are designated as Finalists or Scholars.

Olin Scholarship Policy

The Olin College tuition scholarship is for eight consecutive semesters of full-time study. Anyone permanently disqualified to attend or return to Olin College for academic or disciplinary reasons will forfeit the remaining portion of the scholarship. Study away (which requires pre-approval) or an internship for credit counts as one of the eight scholarship semesters; the student is expected to pay for costs associated with any such activity, including host institution tuition and fees (if required). For mid-semester leaves of absence, the partial semester counts as one of the eight scholarship semesters; payment of tuition is required for any semester(s) beyond eight before graduation. For end-of-semester leaves of absence, the semester on leave does not count as one of the eight scholarship semesters. Olin College provides accommodations for documented disabilities. In extenuating circumstances, exceptions may be granted by the Provost.

Faculty, Instructors, Consultants and Lab Specialists

Faculty Profiles

David Barrett, Ph.D.
Associate Professor of Mechanical Engineering and Design and Director of the Capstone Project Program

Prior to joining the Olin faculty, Dr. Barrett was vice president of engineering at iRobot Corporation, where he was responsible for identifying new business opportunities, establishing strategic partnerships, directing project teams and developing a wide range of robotic systems. Before iRobot, Dr. Barrett founded and directed a division of the Walt Disney Imagineering Corporation. In addition to his many published articles, Dr. Barrett holds eight patents with previous colleagues on a variety of robotic systems. He is a member of numerous professional societies including IEEE Robotics and Automation, Vehicular Technology and Ocean Engineering Societies. Dr. Barrett received his Ph.D. and M.S. in ocean engineering and M.S. in mechanical engineering, all from MIT and a B.S. in mechanical engineering (summa cum laude) from the University of Lowell.

Hillary Thompson Berbeco, Ph.D.
Assistant Professor of Chemistry
(on leave 2004–05)

Dr. Berbeco was most recently a director's postdoctoral fellow at Los Alamos National Laboratory, investigating the chemistry and thermodynamic properties of novel catalyst materials intended for fuel cell use. Her Ph.D. research at Stanford University used an array of analytical chemical techniques to identify a mineral phase responsible for retarding the movement of metal contaminants in the subsurface. She was widely praised at Stanford for her instruction in earth science laboratory courses.

John R. Bourne, Ph.D.
Professor of Electrical and Computer Engineering and Director of the Sloan Center for Online Education at Olin and Babson Colleges

A leading expert in online learning, Dr. Bourne joined Olin from Vanderbilt University, where he was professor of electrical and computer engineering and professor of biomedical engineering. At Vanderbilt he pioneered such innovative learning methodologies as asynchronous learning networks (ALN), a new computer-based learning initiative. He headed Vanderbilt's Center for Innovation in Engineering Education and ALN Center. He established the ALN Web in 1996 and launched the Sloan Consortium, a group of over 40 institutions offering online programs. Dr. Bourne recently received the Education Activities Board Meritorious Achievement Award in Continuing Education from the Institute of Electrical and Electronics Engineers (IEEE). Dr. Bourne received his Ph.D. in electrical engineering from the University of Florida.

Debbie Chachra, Ph.D.
Assistant Professor of Materials Science and Chemistry

Prior to joining the faculty of Olin College, Dr. Chachra was a postdoctoral associate at MIT in the Department of Materials Science and Engineering. Her research involved using a model system to study how cells interact mechanically with the tissue around them. She joined MIT from the University of Toronto, where she received her M.S. and Ph.D. in materials science. Dr. Chachra earned a B.S. in applied science, also from the University of Toronto. She was a recipient of a National Sciences and Engineering Research Council of Canada postdoctoral fellowship and a Medical Research Council of Canada graduate fellowship, as well as numerous other academic honors.

Mark L. Chang, Ph.D.
Assistant Professor of Electrical and Computer Engineering

Dr. Chang received his Ph.D. in electrical engineering from the University of Washington. He received his M.S. in electrical and computer engineering from Northwestern University and his B.S. from Johns Hopkins University. Dr. Chang has earned numerous awards for his scholarly activities, including an Intel Foundation Graduate Fellowship. He received excellent reviews as teaching assistant and instructor while at Northwestern and the University of Washington. His research interests include FPGA arithmetic and architecture, computer-aided design tools, reconfigurable computing and VLSI design

Rebecca Christianson, Ph.D.
Assistant Professor of Applied Physics

Dr. Christianson will be joining the Olin College faculty in January 2005 after completing her post-doctoral research at Harvard University. Her research includes light scattering and microscopy studies of self-assembly kinetics in two-component colloidal systems, anisotropic colloids and surfactant systems. Dr. Christianson recently received a teaching award from the Derek Bok Center for Teaching and Learning at Harvard University. Among published journals and reviews, she and her colleagues have recently submitted "Crystallization Kinetics of Binary Colloidal Alloys," which contains results from the Physics of Colloids in Space experiment which flew on the International Space Station in 2001. Dr. Christianson received her Ph.D. from MIT and her B.S. in physics and B.A. in music both from Stanford University.

Jill Crisman, Ph.D.
Associate Professor of Electrical and Computer Engineering
(on leave 2004–05)

Before joining Olin, Dr. Crisman was a tenured associate professor and the director of the Robotics and Vision Systems Laboratory in the Department of Electrical and Computer Engineering at Northeastern University. She also held adjunct appointments in the College of Computer Science and the Department of Industrial Engineering and Information Systems, and co-advised students in the Biology Department. Her research at Northeastern focused on using color vision systems in aiding robots in navigation. Dr. Crisman received a Ph.D. in electrical and computer engineering from Carnegie Mellon University in 1990. She also holds M.S. and B.S. degrees in electrical engineering from the University of Pittsburgh.

Diana Dabby, Ph.D.
Assistant Professor of Electrical Engineering and Music

Dr. Dabby joined Olin from MIT and Tufts University, where she taught courses in electrical engineering and music composition at the intersection of art and science. At MIT, Dr. Dabby developed a unique synthesis of music and engineering in her application of chaos theory to musical variation. She maintains an active career as a concert pianist and composer, and has performed at Weill (Carnegie) Hall and Tanglewood, among other venues. She received her Ph.D. and M.S. degrees in electrical engineering and computer science from MIT and a B.S. in electrical engineering (summa cum laude) from City College of New York. In addition, she holds an M.F.A. in music from Mills College as well as a B.S. in music from Vassar College.

Helen Donis-Keller, Ph.D.
Professor of Biology and Art

Dr. Donis-Keller was previously at the Washington University School of Medicine, where she was a professor of surgery and director of the Division of Human Molecular Genetics. She has also held leadership positions in the biotechnology industry, where she led a group that developed the first genetic linkage map of the human genome. Dr. Donis-Keller holds an M.F.A. in studio art from the School of the Museum of Fine Arts in Boston and Tufts University and a Ph.D. in molecular biology and biochemistry from Harvard

University. She also received an honorary doctor of science from Lakehead University. Dr. Donis-Keller enjoys combining her interests in art and science. Her "scientific" artwork is featured in exhibits across the nation.

Allen Downey, Ph.D.
Associate Professor of Computer Science

Before coming to Olin, Dr. Downey taught at Colby College and Wellesley College and held research positions at the San Diego Supercomputer Center and Boston University. His research is based on the application of the tools of empirical science to computer systems and networks. Dr. Downey is the author of several textbooks, including three versions of "How to Think Like a Computer Scientist," an introduction to computer science using Java, C++ or Python. He received his Ph.D. in computer science from U.C. Berkeley in 1997. His B.S. and M.S. degrees are from MIT in civil engineering.

Woodie Flowers, Ph.D.
Distinguished Olin Partner

Dr. Flowers is the Pappalardo Professor of Mechanical Engineering at MIT. He received a B.S. from Louisiana Tech University and S.M., M.E., and Ph.D. degrees from MIT. His current research includes work on the creative design process and product development systems. At MIT, he is a MacVicar Faculty Fellow, an honor bestowed for extraordinary contributions to undergraduate education. Currently, Dr. Flowers is a director of four companies and is on the board of *Technology Review* magazine.

John Geddes, Ph.D.
Associate Professor of Mathematics

Prior to joining the Olin faculty, Dr. Geddes was an assistant professor of mathematics at the University of New Hampshire, where he worked on laser-based chaotic communication schemes and pulse dynamics in model locked lasers. He currently receives funding from the NIH for a project on the mathematics of microvascular blood flow. Dr. Geddes graduated in 1990 from Heriot-Watt University, Edinburgh, Scotland with a B.Sc. in physics. He received his Ph.D. in applied mathematics in1994 from the University of Arizona.

Stephen S. Holt, Ph.D.
Professor of Physics and Babson College Director of Science

The former director of space sciences at the NASA-Goddard Space Flight Center in Greenbelt, MD, Dr. Holt is a leader in the field of X-ray astronomy. He was the NASA project scientist on eight NASA missions, including cooperative scientific missions with the United Kingdom, Germany, Japan and Russia; he was also chief scientist for the Space Station Project at NASA. Dr. Holt's many accolades include NASA's highest civilian honor, the Distinguished Service Medal. More than 150 of his publications have appeared in professional journals. Dr. Holt received a B.S. degree with honors in engineering physics and a Ph.D. in physics from New York University.

David V. Kerns, Jr., Ph. D.
Provost and Franklin and Mary Olin Distinguished Professor of Electrical and Computer Engineering and Babson College Professor of Technology Entrepreneurship

Dr. Kerns formerly held the Orrin Henry Ingram Distinguished Professorship in Electrical and Computer Engineering at Vanderbilt University, where he also directed the Management of Technology Program. A fellow of IEEE and holder of several patents, his research interests include MEMS devices, analog circuit design and engineering education. Acclaimed for outstanding scholarship and teaching, he is the co-author of a successful textbook, Introduction to Electrical Engineering. He received his B.S., M.S. and Ph.D. degrees from Florida State University.

Sherra E. Kerns, Ph.D.
Vice President for Innovation and Research and F. W. Olin Professor of Electrical and Computer Engineering

Dr. Kerns was previously chair of the Department of Electrical and Computer Engineering at Vanderbilt University. She has authored over 100 published technical journal papers and made original contributions to enhancing information integrity in digital microelectronics in space. She is a fellow of the IEEE and the American Society for Engineering Education (ASEE), an acclaimed teacher, and recipient of the 1999 Harriet B. Rigas Outstanding Woman Engineering Educator Award, among many other honors. Dr. Kerns was recently elected president of the ASEE. She received her A.B. from Mount Holyoke College, M.A. from the University of Wisconsin and Ph.D. from the University of North Carolina, all in physics.

Benjamin Linder, Ph.D.
Assistant Professor of Mechanical Engineering

Dr. Linder is actively involved in entrepreneurship and is currently studying business structures for social ventures. Recently, he co-founded a software company focused on delivering product development tools to large manufacturing firms. Dr. Linder received a B.S.E. in mechanical engineering and a B.S.E. in electrical engineering from the University of Michigan, where he studied engineering design. He received his M.S. and Ph.D. in mechanical engineering from MIT, where he studied product design and design education.

Caitrin Lynch, Ph.D.
Assistant Professor of Humanities and Social Sciences

Dr. Lynch received her Ph.D. and M.A. in cultural anthropology from the University of Chicago and her B.A. in anthropology from Bates College. Prior to coming to Olin, Dr. Lynch spent a year as an assistant professor of anthropology at Drew University. Additional professional experience includes several fellowships, including a Mellon Postdoctoral Fellowship at Johns Hopkins University. Her research interests are gender, labor, nationalism, and globalization; her area focus is South Asia (specifically, postcolonial Sri Lanka) and the United States. She speaks Sinhala and Tamil. Dr. Lynch not only enjoys conducting research on women's labor and the meanings that women produce in the process of making material goods.

Robert Martello, Ph.D.
Assistant Professor of the History of Science and Technology

Dr. Martello previously served as the Digital History Annotations and Features Producer for the Sloan Foundation's electronic textbook, Inventing America. His primary research interests include the examination of historical narratives from technological, environmental and entrepreneurial perspectives. Dr. Martello received his Ph.D. from MIT's Program in the History and Social Study of Science and Technology. He received an M.S. degree from MIT's Department of Civil and Environmental Engineering. Dr. Martello also holds a B.S. degree from MIT in the field of earth, atmospheric and planetary science..

Richard K. Miller, Ph.D.
President and Professor of Mechanical Engineering

As dean of the College of Engineering at the University of Iowa where he served before joining Olin, Dr. Miller created the nation's first Technological Entrepreneurship Certificate Program for engineers. His research interests include structural dynamics and nonlinear mechanics, and he is the author or co-author of 100 reviewed journal articles and other technical publications. Other interests include innovation in undergraduate education and entrepreneurship. Dr. Miller has won five teaching awards at two universities. He earned his B.S. degree in aerospace engineering from the University of California, Davis. He earned his M.S. degree in mechanical engineering from MIT, and his Ph.D. in applied mechanics from the California Institute of Technology.

Bradley A. Minch, Ph.D.
Associate Professor of Electrical and Computer Engineering

Prior to joining the Olin College faculty, Dr. Minch was an Assistant Professor at Cornell University in the School of Electrical and Computer Engineering. During his time at Cornell, he was the recipient of three teaching awards and one freshman advising award. In 2000, he received an Early CAREER Award from the National Science Foundation. Dr. Minch's research interests are in the areas of analog and mixed-signal integrated circuit design. Dr. Minch received his Ph.D. from the Computation and Neural Systems program at the California Institute of Technology, where he worked in the laboratory of Prof. Carver Mead. He received his B.S. in electrical engineering from Cornell University.

Michael Moody, Ph.D.
Dean of Faculty and F.W. Olin Professor of Mathematics

Dr. Moody was previously the Diana and Kenneth Jonsson Professor of Mathematics, and chairman of the Department of Mathematics at Harvey Mudd College. He is recognized nationally for his work in developing an applied mathematics curriculum for science and engineering. Prior to serving at Harvey Mudd, Dr. Moody spent 13 years on the faculty of Washington State University, where he held a joint appointment in mathematics and biology. He received his Ph.D. in applied mathematics from the University of Chicago and his B.A. in mathematics and chemical physics from the University of California, San Diego.

Gill Pratt, Ph.D.
Associate Professor of Electrical and Computer Engineering

Dr. Pratt was formerly an associate professor of electrical engineering and computer science and a researcher in parallel computer hardware at MIT. Dr. Pratt has a strong interest in the societal aspects of technology, including "green" technologies like electric cars and larger issues like the impact of robotics on the quality of life. He received his B.S., M.S. and Ph.D. in electrical engineering and computer science from MIT.

Janey Pratt, M.D.
Senior Olin Partner in Health Sciences

Dr. Pratt is a general surgeon, specializing in bariatric and oncologic surgery at the Massachusetts General Hospital, and an instructor in surgery at Harvard Medical School. She holds a B.A. degree from Wellesley College in chemistry and an M.D. from Tufts University School of Medicine. Dr. Pratt advises Olin students interested in pursuing health science post-graduate careers, including M.D. and M.D./Ph.D. degrees. Using her background in innovative medical technology and surgery, Dr. Pratt is a resource for students interested in medical technology. She is also involved in an advising family at Olin and assists classes when medical topics arise.

Joanne C. Pratt, Ph.D.
Assistant Professor of Biological Sciences

Dr. Pratt joined Olin from the National Jewish Medical Research Center (NJC) in Denver, where she was an instructor in the Division of Cell Biology and the Department of Pediatrics. Before NJC, she was an instructor in pediatrics at Dana-Farber Cancer Institute and Harvard Medical School. Funded in part by the Association for International Cancer Research, her immunology research is relevant to certain forms of cancer, such as leukemia and lymphoma, as well as AIDS and autoimmune diseases. Dr. Pratt holds a Ph.D. in immunology from the University of Pennsylvania and an A.B. in biology from Smith College.

Stephen Schiffman, Ph.D.
Associate Professor at Babson and Olin Colleges

Prior to joining the Olin faculty, Dr. Schiffman was the dean of the Undergraduate Program a t Babson College and a Senior Partner at Olin College. In his two years as a Senior Olin

Partner, Dr. Schiffman worked closely with the faculty to develop and improve the Olin curriculum. He has been a Babson faculty member in Mathematics and MIS since 1986. He was the architect of Babson's revised undergraduate curriculum, which launched in the fall of 1996. In 1997, the Pew Charitable Trusts recognized this effort by selecting Babson for a Pew Leadership Award for renewal of undergraduate education. Dr. Schiffman holds a Ph.D. in mathematics from Dartmouth College as well as an M.S. in management from the Sloan School at MIT. He has taught at the University of Colorado and Colorado College. Prior to joining Babson, he worked at Digital Equipment Corporation.

Mark Somerville, Ph.D.
Assistant Professor of Electrical Engineering and Physics

Dr. Somerville joined Olin from Vassar College, where he was assistant professor of physics. He strongly believes in the educational value of involving students in hands-on research and in integrating communications skills into the curriculum. His research focuses on the physics of semiconductor devices. Dr. Somerville holds M.S. and Ph.D. degrees in electrical engineering from MIT, as well as an M.A. in physics from Oxford University. He earned a B.S. in electrical engineering and a B.A. in English from the University of Texas at Austin. He was a Rhodes Scholar.

Sarah Spence, Ph.D.
Assistant Professor of Mathematics

Dr. Spence, an expert in coding theory and cryptography, completed her Ph.D. in mathematics at Cornell University. She holds a B.S. in mathematics from the University of Richmond and has conducted research at the NATA Advanced Study Institute and the National Security Agency. Dr. Spence developed a passion for teaching while serving as a teaching assistant for Cornell's Mathematics Department for several years.

Lynn Andrea Stein, Ph.D.
Professor of Computer Science and Engineering

Dr. Stein joined Olin from MIT, where she was associate professor of computer science. Dr. Stein's pioneering approach to the teaching of computer science makes use of a revolutionary interactive model rather than the traditional linear view of computation. She is working on a book, Introduction to Interactive Programming, which details her innovative ideas. She is the recipient of MIT's Spira Teaching Award and the National Science Foundation (NSF) Young Investigator Award. She has a B.S. (cum laude) in computer science from Harvard and Radcliffe Colleges and M.S. and Ph.D. degrees in computer science from Brown University.

Jonathan Stolk, Ph.D.
Assistant Professor of Mechanical Engineering and Materials Science

Dr. Stolk joined Olin College from Bucknell University, where he was a visiting assistant professor in the Chemical Engineering Department. He was voted "Bucknell's Favorite Professor" by first and second-year students at the University. He also received several prestigious teaching awards from the University of Texas at Austin, where he taught before joining Bucknell. Dr. Stolk holds M.S. and Ph.D. degrees in materials science and engineering from the University of Texas at Austin and a B.S. in mechanical engineering from the University of Texas at Arlington.

Brian D. Storey, Ph.D.
Assistant Professor of Mechanical Engineering

Dr. Storey was previously at the University of California, Berkeley, where he received his Ph.D. in mechanical engineering. He holds an M.S. from the University of Illinois at Urbana-Champaign and a B.S. from the University of Texas at Austin. He has also worked in active sonar systems and underwater acoustics at University of Texas Applied Research Labs. Dr. Storey's research interests include fluid mechanics, computational science and engineering, numerical methods and heat transfer.

Burt Tilley, Ph.D.
Associate Professor of Mathematics

Dr. Tilley joined Olin College from the New Jersey Institute of Technology, where he incorporated real-life examples as projects in his undergraduate courses. He was the recipient of an NSF-NATO Postdoctoral Research Fellowship at the Hydrodynamics Laboratory at the Ecole Polytechnique in France. Dr. Tilley's general research interests include the stability and pattern formation of the interface between two fluids, as well as the dynamics of fluid systems in the presence of large electric fields. Dr. Tilley received a Ph.D. in applied mathematics at Northwestern University, a B.S. in electrical engineering (summa cum laude) and a B.A. in modern languages (magna cum laude) at the University of Lowell.

Jessica Townsend, Ph.D.
Assistant Professor of Mechanical Engineering

Before joining Olin, Dr. Townsend was a research associate in the Department of Aeronautics and Astronautics at the Massachusetts Institute of Technology. Her doctoral work was also done at MIT in the Gas Turbine Laboratory where she developed, tested and modeled evaporatively cooled turbine blades for advanced aircraft engines. Prior to returning to school for her doctorate, Dr. Townsend spent three years in industry at Hamilton Sundstrand Power Systems in San Diego, CA, a manufacturer of auxiliary power units for commercial and military aircraft. Her research interests include turbine blade cooling, nanofluids, and aviation noise and emissions mitigation. She received her M.S. in mechanical engineering from the University of California-Davis and B.S. in mechanical engineering from the University of Massachusetts-Amherst

Yevgeniya V. Zastavker, Ph.D.
Assistant Professor of Physics

Dr. Zastavker was formerly a visiting assistant professor of physics at Wellesley College, where she taught introductory level physics. She holds a B.S. in physics from Yale University and a Ph.D. in biological physics from MIT. Her current research interests include investigating the chemical compositions, molecular arrangement and kinetic evolution of helical ribbons formed in quaternary sterol systems. While at MIT, Dr. Zastavker was also very active in MITES2, a rigorous six-week program that introduces promising minority high school students to science, engineering and business.

Lab Specialist, Instructor, and Consultant Profiles

Lab specialists and instructors provide expertise in specific areas and also provide specialized assistance to the faculty, students and the development of resources and delivery of programs at the Olin.

David Anderson
Master Instructor of Mechanical Design and Fabrication

Prior to joining Olin, Mr. Anderson was an optomechanical engineer with Network Photonics, a start-up company developing all-optical switches for Dense Wavelength Division Multiplexing (DWDM) Networks. He was a founding employee and played an instrumental role in engineering the product from initial concept to production. Mr. Anderson's areas of interest and expertise include design, analysis manufacturing and testing of precision mechanical systems. Mr. Anderson frequently contributes software reviews to mechanical engineering trade journals. He received his B.S. in mechanical engineering from the University of Colorado, Boulder.

Gillian Epstein, Ph.D.
Consultant in Writing

Prior to joining Olin College, Dr. Epstein was a senior consultant and instructor for FreshPond Education, a professional development company. While with FreshPond Education, she designed and taught professional development courses to public school administrators and teachers that focused on integrating technology and the humanities in the curriculum, often with the specific goal of improving student writing. Prior to her position with FreshPond Education, Dr. Epstein was an instructor of composition and literature at the University of California Berkeley, where she won a teaching award in 1999. Additional teaching experience includes serving as a writing instructor at Wesleyan University. Dr. Epstein earned her Ph.D. from U.C. Berkeley and her B.A. from Wesleyan University, both in English. Her interests include nineteenth century American literature, novel theory and feminist theory.

Timothy Hemesath, Ph.D.
Laboratory Specialist

Dr. Timothy (Tim) Hemesath is assisting Olin's biology and chemistry faculty. Before coming to Olin, Dr. Hemesath was living and working in Siena, Italy where he was head of Proteomics for a start-up drug discovery company. Prior to that appointment, he was the director of Functional Genomics for deCODE Genetics in Reykjavik, Iceland. His research interests include immune regulation in health and disease, receptor function and transcriptional regulation and chromatin dynamics. Dr. Hemesath has been invited to speak at seminars worldwide on genetics and protein interactions. Dr. Hemesath has an intimate understanding of the approach employed by diverse European healthcare systems to the treatment of bone fracture. Dr. Hemesath earned his Ph.D. from the University of Chicago.

Mark Jeunnette
Instructor of Mechanical Design and Fabrication

Mr. Jeunnette received a B.S. in mechanical engineering from MIT. Following his graduation, he spent the summer working for BMW in Munich, Germany. While with BMW, Mr. Jeunnette worked on finite element simulation of cast-aluminum car and motorcycle components. He joins the faculty as an instructor of mechanical design and fabrication and in this capacity assists faculty with the delivery of the freshman mechanical foundation program and the sophomore design project. In addition, Mr. Jeunnette trains students in the use of the machinery and assist students with project development.

James Rising
Instructor of Electrical and Computer Engineering

Mr. Rising joins Olin College as instructor of electrical and computer engineering. He recently graduated from MIT with a B.S. in philosophy. His undergraduate experience also includes extensive course work in computer science, mathematics and engineering. For the last four years he has been an instructor for MIT's Experimental Study Group, teaching seminars and classes in topics ranging from Lego robotics to grand unified theories of physics. Mr. Rising's interests include educational innovation, robotics and community development

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