

Amended June 15, 2012

The twenty-ninth meeting of the Committee of Six for the academic year 2011-2012 was called to order by President Martin in the President's office at 3:30 P.M. on Monday, May 14, 2012. Present were Professors Basu, Ferguson (who participated via speaker phone), Hewitt, Loinaz, Ratner, and Umphrey, Dean Call, and Assistant Dean Tobin, Recorder.

Under "Announcements from the President," President Martin informed the members that Peter Shea, the College's Treasurer, has accepted the position of Director of Finance at The Roxbury Latin School in West Roxbury, Massachusetts, an independent day school for boys. Mr. Shea will leave the College at the end of June, the President said, adding that there will be opportunities to honor him and say farewell. President Martin explained to the members that it will be important to change the title of the position, as the title of Treasurer does not communicate the full range of responsibilities of the position and is outmoded; few peer institutions now make use of it. In order to attract the best applicants, a title such as Vice-President for Finance and Administration, or, perhaps, Vice-President for Finance and Administration/Treasurer, would be preferable, President Martin feels. Changing the position's title, which is named and defined in the bylaws of the Trustees of Amherst College, would be an administrative decision that would require a vote of the Board of Trustees, she noted. References to the position in the *Faculty Handbook* could later be updated. Professor Loinaz asked if the President anticipates changing the titles of other senior administrative positions, and she responded that she does not envision doing so, seeing no need. Professor Ratner asked if the President foresees shifting any of the responsibilities of Mr. Shea's position and if additional positions might be required in the Treasurer's office. President Martin said that she feels it would be best to consider any additions or changes to the structure in the Treasurer's office, if needed, once the new appointment is made. Professor Basu asked if plans are in place to appoint an interim Treasurer. The President said that she has not yet decided what will be needed; she plans to consult with Mr. Shea about plans for his transition.

Continuing, President Martin said that she is finalizing the list of those whom she will invite to serve on the search committee for the Provost position. President Martin concluded her announcements by mentioning that she has had discussions with Professor Zajonc about ways to encourage collaborations between the College and the Mind and Life Institute, which he now heads, that will allow Amherst students to have access to the institute to explore contemplative traditions and their relationship to the sciences and humanities. Possibilities include co-organizing a symposium or conference with the institute. The President also noted that the College is considering hosting a conference that would focus on baseball, examining the sport and its place within American history, and inviting Amherst alumni who are general managers of professional baseball teams and other representatives who work in the field, as well as scholars, to participate.

Under "Announcements from the Dean," the Dean noted the passing of Professor Emeritus of Anthropology Donald S. Pitkin on May 11, 2012, and the members were saddened by this news. He asked the members for nominations for a Memorial Minute Committee for Professor Pitkin. The Dean noted that, as soon as senior grades are in and final G.P.A. calculations are made, he would provide the Committee with information about the nominee for the Woods-Travis Prize and would ask the members to vote electronically on forwarding the recommendation of the nominee to the Faculty.

Continuing with his remarks, the Dean noted that the President and he had approved a proposal from Bryn Geffert, Librarian of the College, to develop an online Amherst College Press, which, Mr. Geffert has noted, will produce publications rivaling those at the top academic presses—created from manuscripts solicited from scholars around the world and subject to the same level of peer review, editing, and design. The press will be open access, and Amherst will

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make its electronic publications freely available to all—the first liberal arts college to do so. At the outset, the press will publish solely in the liberal arts in disciplines for which Amherst is well known, while also supporting an online open-access version of the *Common* literary magazine. The Committee expressed enthusiasm for the project. Dean Call noted that the majority of funding for staffing the press and other costs is already in place as a result of support that has been provided through the library's endowed funds and savings that have resulted from the reallocation of frozen positions in the library. Professor Loinaz asked about the nature of the eliminated positions in the library. The Dean said that these were staff positions. Due to the changing nature of work within the library, it had been possible to redistribute among current positions functions that had been attached to the eliminated ones. Professor Ratner asked for more specifics about the fields on which the press would focus. Dean Call said that the thought is to begin with underserved fields, primarily within the humanities. It was noted that the *Common* will be affiliated with the new press, and that both print and online versions of the *Common* currently exist. As the Dean mentioned earlier, the press will support an online, open-access version of the literary magazine. Professor Umphrey expressed some concern that the *Common* does not have much of a presence on campus. Professor Hewitt agreed. Dean Call noted that the publication is supported through a subscription model, which may result in less visibility on campus. He said that plans call for examining ways in which the press and the *Common* may work together most productively.

The Dean next informed the members that President Martin and he have decided to grant a single course release annually for members of the Committee of Six, as an experiment, for the next three years. President Martin added that it will be possible for departments to “bank” the course replacement, if they wish, for use after their department's Committee of Six member rotates off the Committee. When departments replace these courses, they will be asked to do so through the use of Five-College “borrows.” Funding will be provided at the Five-College full professor borrow rate, the Dean said. The members thanked President Martin and Dean Call and welcomed this news. Professor Basu asked if course relief for other administrative roles, such as the chair of the Committee on Educational Policy (CEP) would be implemented. President Martin said that there are no plans to do so at this time; she would like to evaluate the Committee of Six experiment before considering release time for other service, but she said that she is open to considering the implications of course release in other circumstances and for other roles.

The Dean shared a letter regarding the procedures for senior-hire tenure review. The members agreed that these procedures should be reviewed and clarified, with the aim of improving the process. The Dean said that his office would undertake this project over the summer and report back to the Committee of Six in the fall. Since most of these procedures are prescribed by faculty legislation, it would be necessary to bring any significant proposed changes to the Faculty for a vote, he noted. Dean Call expressed the view that, if there were greater clarity and familiarity with what has been a largely unused process for many years, it would be helpful. He agrees that rethinking of the requirements and their purposes is also in order.

Returning to the topic of the humanities/social sciences center, Professor Basu suggested that it would be helpful for the Committee of Six to be provided with the proposal for the center to inform future conversations about it. It has been difficult to make judgments without knowing more about the substance of what has been proposed. Professor Basu noted that a colleague had provided her with a copy of the proposal, and that learning more about it had been informative. She stressed that she supports this initiative, despite her concerns about the envisioned place of the humanistic social sciences in the model being proposed. Professor Hewitt, who is among the proposers, said that the intention has been to create a center that is welcoming and open, rather than exclusionary. Professor Basu suggested that the proposal for the center be shared broadly

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and that consideration be given to including the humanistic social sciences under the umbrella of the center, as it is further conceived and developed. She proposed that a title such as the Center for Humanistic Inquiry might convey more effectively the desire for a center that will have an inclusive approach. Professor Ferguson asked whether the new entity is to be a center for curriculum and pedagogy, as well as research.

Continuing the conversation, the President responded that she understands that the center is meant to be a research center. She and Dean Call expressed the view that, while there are some intersections between the need for a space in which to focus on and explore curricular innovation and teaching, it appears that it is best to separate that project from the center under discussion. Having too many objectives and trying to meet too many needs with a single center would not be desirable, it was agreed. Professor Ferguson noted that, at present, the College does not create space to have elevated discussions about teaching on a conceptual level. Doing so would be valuable in his view. President Martin and Dean Call agreed. Dean Call said that he sees the need for a teaching center as being parallel to the need for a research center, though there would be overlaps between the two entities. He offered as an example the important role within the research center of providing mentoring, in terms of both scholarship and teaching, to the colleagues in post-doctoral positions, who will form a core of the center. Professor Ratner argued that any structures that are created to focus on curricular innovation and pedagogy should not exclude the sciences. Dean Call noted, on a related note, that, at a “synergy summit” that would be held at the College on May 16, Amherst faculty and administrators would exchange ideas about innovative pedagogical and curricular initiatives that are currently under way on campus, a number of which have been funded through grants. He said that finding ways to bring colleagues together for such discussions is important and valuable. The Committee discussed further nominations of faculty members and administrators to serve on a committee that would plan for the new research center.

The President discussed briefly with the members how best to integrate ongoing and upcoming planning efforts that are focusing on different areas of the College, for example, advising and information technology, into the broader long-range planning effort. The President said that folding ongoing planning efforts into the broader long-range planning initiative will allow planning to progress while the search for the provost is under way and help avoid a duplication of effort once the larger planning effort is launched. President Martin noted that the Committee on Educational Policy (CEP) has agreed to help gather faculty views on a number of key issues facing the College, efforts that will also ultimately inform the long-range plan.

Under “Questions from Committee Members,” Professor Basu asked if the Copeland Program would continue to exist if funding from the Copeland Fund is used to support a new research center. Dean Call said that it would be necessary to draw on some of the Copeland Fund to help support the center, and that he hopes that programming for the center and the colloquium can be coordinated, when appropriate. Professor Loinaz next asked if thought has been given to how science students’ summer research efforts will be supported, since the College’s recent proposal to the Howard Hughes Medical Institute (HHMI) was not funded. Amherst had received support from HHMI in five out of the previous six grant cycles since 1988, and it was disappointing, but not unexpected that this year’s proposal was not funded, Dean Call said. There has been some speculation that HHMI has decided to place greater emphasis in the 2012 round on underserved institutions, first-time grantees, or teaching training institutions. When the College receives reviewers’ comments next month, more will be known, he noted. Dean Call said that it is likely that there will be enough funding through existing grants to support student research this summer, and next, and that he expects that funding resources from his office will also be used for this purpose. Since the College has sought support

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from the Mellon Foundation for tutorials and summer research stipends for students in the humanities and social sciences who are currently being supported through the Dean's office, having those initiatives funded for three years through a Mellon grant will allow the Dean to devote more resources to supporting student research in the sciences during the summer. He is also working with faculty and administrative colleagues to explore alternative external funding sources for summer science research. Professor Loinaz asked if fundraising for the new science center will include an emphasis on providing more endowed support for summer research. The Dean said that doing so is a fundraising priority.

Continuing with "Questions from Committee Members," Professor Basu asked when decisions about requests for FTEs would be made; Professor Hewitt wondered how many proposals had been submitted. Dean Call said that decisions would be announced soon and that there had been fifteen proposals, including two to regularize long-term visiting appointments. Professor Umphrey asked how many of the proposals had been for replacements. Dean Call said that, of the thirteen regular requests, there had been seven requests for new positions and six for replacements. Professor Umphrey next asked when the Ad Hoc Committee on Advising plans to issue its report. President Martin noted that the committee is asking big questions and considering advising from the ground up. She anticipates that the committee's report will be ready this fall. Professor Hewitt next requested that next year's Committee of Six return to the question of whether students who are being considered for summa cum laude should be expected to demonstrate breadth in the course of study at the College. The Dean said he would add this topic to the agenda for next year. The Committee then turned briefly to personnel matters.

The members reviewed drafts of letters to candidates and chairs about promotion to full professor and approved them. Professor Ratner suggested that, depending on whether the Faculty votes to require candidate letters for reappointment and tenure, it might be appropriate and desirable to require candidate letters for promotion to full professor as well.

The meeting concluded with a discussion of a proposal for an engineering exchange between Amherst and Dartmouth that had been endorsed by the CEP ([endorsement and proposal appended via link](#)). Professor Ratner expressed the view that the proposed arrangement and its written description are excellent and said that he is in favor of the proposal. He wondered why the arrangement for the study of engineering that the College had with MIT was discontinued years ago and if any lessons had been learned from that experience might be helpful in making the proposed arrangement with Dartmouth. He commented that some of the pre-approved courses for the program seem fairly technical—for example, ENGS42, Contaminant Hydrogeology. The subject matter, he noted, seems as applied as some of the courses offered at UMass for the Sustainability Certificate, but the Committee had been assured Amherst's Registrar would not approve all courses for the certificate.

Professor Loinaz responded that former Registrar, Gerry Mager, had informed him that MIT had ended the agreement with Amherst. Professor Loinaz said that he is under the impression that MIT had ended its exchange agreements with all liberal arts colleges at the time. In response to Professor Ratner's question about the nature of the courses, Professor Loinaz acknowledged that some of the courses are a bit technical, while commenting that some of the courses offered at Amherst can be technical, as well—for example, some of the intermediate and upper-level courses in physics. Professor Loinaz argued that, if the applications and technical aspects are vehicles for exploring or elaborating general principles, he does not see any problem. When courses stray toward the purely vocational, he does not feel that Amherst should give credit for them. Since Dartmouth emphasizes the liberal arts in its undergraduate engineering sciences courses, he is not concerned that Dartmouth will offer vocational courses. UMass engineering school, on the other hand, has no particular emphasis on the liberal arts that he can

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discern, so he evaluates their courses individually, when called upon to do so. He said that he had reviewed courses on the Dartmouth list and picked the courses that looked like they could be offered at Amherst. He shared his list with Professor Friedman (chair of the physics department) to vet it and get the “pre-approval” of the physics department. Professor Friedman pared the list a bit, and Professor Loinaz then forwarded it to Kathleen Goff, the Registrar, with some explanation for each course. Those courses that are now included in the proposal are what she approved (of the list that Professor Loinaz had submitted, the Registrar did not approve courses that Professors Loinaz or Friedman had judged to be on the borderline of perhaps being too vocational). Professor Umphrey wondered why Amherst might move in the direction of forming a connection with a professional degree program in engineering, and what implications approving this proposal might have for other, future proposals attached to professional fields. Professor Loinaz pointed out that the proposal is not novel. Amherst had an engineering exchange with MIT for three decades, and the current proposal only formalizes an option for study at Dartmouth that has been available to Amherst students for many years. He noted that students have always been able to take this curriculum through the Twelve-College Exchange (a reason that the Faculty is not being asked to vote on the engineering proposal), but that formalizing the arrangement will mean that Dartmouth will provide Amherst students with more support, including advising. Professor Loinaz also pointed out that all of Amherst’s peers participate in a program like this one or offer an engineering program themselves. Professor Umphrey said that it would be productive for the Faculty to consider larger questions about Amherst’s relationship to the professions. Professor Basu agreed that having such a discussion would be valuable and suggested that involving the Center for Community Engagement would be helpful, as the center is an important tool for building bridges between the College and professional schools. The members expressed support for the proposal, and it was agreed that it should be adopted. The Committee turned to personnel matters.

The meeting adjourned at 6:45 P.M.

Respectfully submitted,

Gregory S. Call
Dean of the Faculty



AMHERST COLLEGE

Department of Computer Science

April 5, 2012

The Committee of Six
Amherst College

Dear Colleagues:

The Committee on Educational Policy has reviewed the attached proposal from Professor Will Loinaz for an engineering exchange program with Dartmouth College.

Under the program, a student would spend his or her junior year at Dartmouth, taking selected courses that would count toward both an AB at Amherst and a BE at Dartmouth. The student would return to Amherst for the senior year. After graduating from Amherst, the student would go back to Dartmouth for a fifth year to complete the BE. As Professor Loinaz notes, "While several universities run such partner programs, Dartmouth's seems an especially good fit with Amherst both in philosophy and structure. The philosophy of Dartmouth's Thayer School of Engineering includes emphasis on the liberal arts as an essential element of an engineering education.... This program will appeal to students interested in exploring engineering as intellectual discipline integrated with the liberal arts, and who wish to gain some exposure to the field before committing to pursue an engineering graduate degree or career."

Amherst students are already occasionally participating in an informal version of program. Under Twelve College Exchange, they attend Dartmouth during the junior year and receive transfer credit for courses approved by the Registrar. It will continue to be the case that all courses taken at Dartmouth must be approved by our Registrar in the regular way.

Formalizing Amherst's participation in this program will offer our students several advantages over the informal version used today. Those who are accepted into the program will receive advising while at Dartmouth, will be automatically admitted to Dartmouth for the fifth year, and will be eligible to receive financial aid for the fifth year. There will be no cost associated with our participation, and we see no other disadvantages.

The CEP has voted unanimously to approve Amherst's participation in the engineering exchange program and has asked the Dean of the Faculty to make appropriate arrangements with Dartmouth. We do not believe that there is any change in Amherst's curriculum that would require approval by the Faculty.

Best regards,

Lyle A. McGeoch

On behalf of the Committee on Educational Policy

CEP Members:

Anthony Bishop
Gregory Call, *ex officio*
Carol Clark
Javier Corrales
Matthew DeButts '14

Rick Lopez
Lyle A. McGeoch, chair
Jacob Ong '14
Elizabeth Scott '13

Proposal for an engineering exchange program with Dartmouth

Introduction

The engineering exchange (or dual degree) program with Dartmouth is an arrangement, offered through the Twelve College Exchange, under which eligible Amherst College students could attend Dartmouth College for a year to take engineering science courses (chosen to be eligible for credit at Amherst College), leading ultimately to both an AB from Amherst and a BE from Dartmouth in five years. While several universities run such partner programs, Dartmouth's seems an especially good fit with Amherst both in philosophy and structure. The philosophy of Dartmouth's Thayer School of Engineering includes emphasis on the liberal arts as an essential element of an engineering education. The "2-1-1-1" structure of the program aligns with our traditional junior year abroad patterns. A student spends his or her first two years at Amherst, followed by a junior year at Dartmouth for engineering science coursework. The student returns to Amherst for senior year at and graduates from Amherst with an AB in an Amherst College major. The student would then have the option to return to Dartmouth for an additional year to complete a BE degree. This program will appeal to students interested in exploring engineering as intellectual discipline integrated with the liberal arts, and who wish to gain some exposure to the field before committing to pursue an engineering graduate degree or career.

Motivation

Among peer institutions Amherst is conspicuous by the absence of its participation in an engineering dual degree program. A recent survey of the web pages of the US News top fifty national liberal arts colleges shows that every one but Amherst has an engineering exchange program (some partner with Dartmouth, others with Columbia, Caltech, RPI, or Washington University in St. Louis), excepting those that have their own engineering department. Amherst itself had a cooperative engineering-science program with MIT listed in the catalog until 1979-1980.

Inquiries by prospective and enrolled students and conversations with alumni suggest a continuing demand for a program of this sort. Prospective students ask about the avenues for exploring engineering at Amherst. Alumni, some of whom pursued engineering graduate school after Amherst, say they would have considered the program had it been available. Not every student expressing an interest would avail themselves of a dual degree program (and indeed, space in the Dartmouth program will likely be limited to only one or two of our students per year), but for those that do it could be a valuable experience.

Administrative

The year at Dartmouth would be carried out under the umbrella of the Twelve College Exchange so would require little additional administrative machinery from Amherst. In

fact, a few of our students effectively participated in this program in the past, taking engineering coursework at Dartmouth during their year of Twelve College Exchange. However, Amherst's formal participation in their dual degree program guarantees that Amherst students accepted into the program will receive advising by the engineering school and will be automatically admitted for the fifth year, and students participating in the program will be eligible for financial aid from Dartmouth during that fifth year. The program has twenty-five slots and is sometimes oversubscribed, but we are told that the acceptance rate from Amherst's peer schools is high. Applications to the program are due each year on Feb. 1. Application is in the sophomore year to spend junior year at Dartmouth.

In discussion with the Amherst College Registrar, the following rules would govern eligibility:

- Students would apply in their sophomore year and participate their junior year.
- Students must have the pre-requisite courses to apply.
- Transfer students are eligible to apply. However, they could not apply until the end of their first semester in residence, and they must have earned an Amherst GPA to apply. Transfer students must ultimately have at least 4 semesters in residence (16 courses) at Amherst.

The following rules would govern the manner in which coursework and time at Dartmouth would be regarded by Amherst:

- Courses coming from Dartmouth would be treated in the usual way for Study Abroad or Twelve College Exchange: no grades, but a grade of "C" is required for credit to be applied.
- A semester at Dartmouth would be treated as a semester in residence and count toward the eight required at Amherst.
- Students must follow Amherst college policies regarding withdrawals and course load.
- All courses taken at Dartmouth must be graded (no pass/fail).
- No online courses will be accepted for credit.
- All courses must be pre-approved by the Registrar. Specific courses may be pre-approved by the College for this program; anything beyond those would require explicit pre-approval by Registrar.

Courses

Pre-requisites

In the first two years at Amherst, students are required complete:

1. Calculus through vector calculus (MATH 111, 121, and 211)
2. Two semester of introductory physics (PHYS 123 and 124 preferred, PHYS 116 and 117 accepted)
3. One semester of introductory chemistry

4. One semester of introductory computer science

The list of required courses is not overly burdensome and is often completed by physics and other science majors by the end of sophomore year. There is some flexibility should students not be able to complete all of these courses before the junior year at Dartmouth. The chemistry or computer science course is sometimes taken in the junior year at Dartmouth, or might be put off until the senior year at Amherst. Dartmouth also will accept placement out of some of the introductory courses as satisfying their requirements, although they stress that for admission they expect to see significant college science and math coursework in the first two years even with placement.

Junior year at Dartmouth

The Dartmouth academic calendar is on a quarter system. Students would spend three quarters at Dartmouth, taking three courses each quarter. As per the usual Twelve College Exchange procedure, courses taken at Dartmouth must be approved in advance by the Amherst College Registrar. Some Dartmouth courses in the program (listed below) are pre-approved by the College. For courses not pre-approved, the Amherst College Registrar may consult with the Dean of Faculty or Amherst College departments to confirm whether a course could qualify for credit at Amherst based on a criterion that the course is consistent with the liberal arts. Final approval is at the discretion the Registrar.

Dartmouth requires students take six engineering science courses during the junior year:

- (1) Common core courses ENGS 21 (Introduction to Engineering), ENGS 22 (Systems), ENGS 23 (Distributed Systems and Fields) are required. Common core courses emphasize an integrated approach to problem solving and systems analysis.
- (2) Students will take 1-2 courses from a list of four Distributive core courses, ENGS 24 (Science of materials), ENGS 25 (Introduction to Thermodynamics), ENGS 26 (Control theory), ENGS 27 (Discrete and probabilistic systems). Distributive core courses address basic concepts of engineering and help students make informed decisions about their eventual engineering specialties.
- (3) Students will take 1-2 courses from a list of gateway courses. Gateway courses introduce students to specific engineering disciplines and help them shape their programs around their interests.
 - a. ENGS 31 (Digital Electronics)
 - b. ENGS 32 (Electronics: Introduction to linear and digital circuits)
 - c. ENGS 33 (Solid mechanics)
 - d. ENGS 34 (Fluid dynamics)
 - e. ENGS 35 (Biotechnology and biochemical engineering)
 - f. ENGS 36 (Chemical engineering)
 - g. ENGS 37 (Introduction to environmental engineering)

In addition to the six engineering courses, students will take three courses in the

humanities or social sciences.

Senior year at Amherst

Students would return to Amherst to complete an Amherst College major and graduate with an Amherst College degree. Students are encouraged to take additional advanced science and math courses during this year.

Fifth year at Dartmouth

Students returning for the fifth year would take additional technical engineering courses that would lead to a BE from Dartmouth.

Additional details, including admissions requirements and suggested courses of study, housing and financial aid during the fifth year are available at:

<http://thayer.dartmouth.edu/academics/undergraduate/dual/>

Pre-approved courses

Final approval of courses for Amherst College credit is at the discretion of the Registrar. The following courses have been pre-approved by the Registrar for Amherst College credit. Departments should be consulted for advice on whether courses could be used to satisfy departmental requirements.

[ENGS 20](#): Introduction to Scientific Computing

[ENGS 21](#): Introduction to Engineering

[ENGS 22](#): Systems

[ENGS 23](#): Distributed Systems and Fields

[ENGS 24](#): Science of Materials

[ENGS 25](#): Introduction to Thermodynamics

[ENGS 26](#): Control Theory

[ENGS 27](#): Discrete and Probabilistic Systems

[ENGS 30](#): Biological Physics

[ENGS 31](#): Digital Electronics

[ENGS 32](#): Electronics: Introduction to Linear and Digital Circuits

[ENGS 33](#): Solid Mechanics

[ENGS 34](#): Fluid Dynamics

[ENGS 35](#): Biotechnology and Biochemical Engineering

[ENGS 36](#): Chemical Engineering

[ENGS 37](#): Introduction to Environmental Engineering

[ENGS 41](#): Sustainability and Natural Resource Management

[ENGS 42](#): Contaminant Hydrogeology

[ENGS 43](#): Environmental Transport and Fate

[ENGS 51](#): Principles of System Dynamics

[ENGS 52](#): Introduction to Operations Research

[ENGS 56](#): Introduction to Biomedical Engineering
[ENGS 60](#): Introduction to Solid-State Electronic Devices
[ENGS 61](#): Intermediate Electrical Circuits
[ENGS 62](#): Microprocessors in Engineered Systems
[ENGS 63](#): Introduction to VLSI Systems
[ENGS 64](#): Cellular and Molecular Biomechanics
[ENGS 65](#): Engineering Software Design
[ENGS 66](#): Discrete Mathematics in Computer Science
[ENGS 67](#): Programming Parallel Systems
[ENGS 68](#): Introduction to Communication Systems
[ENGS 71](#): Structural Analysis
[ENGS 73](#): Materials Processing and Selection
[ENGS 76](#): Machine Engineering
[ENGS 80](#): Ethics and Engineering
[ENGS 91](#): Numerical Methods in Computation
[ENGS 92](#): Fourier Transforms and Complex Variables
[ENGS 93](#): Statistical Methods in Engineering

[Note that the pre-approval is limited to these Dartmouth College courses only. In particular, this does not imply automatic approval courses with similar titles at UMass or elsewhere.]

Additional courses could be approved in consultation with the Registrar and Amherst College departments.