ENGINEERING

Overview and Contact Information

The Engineering Nexus provides a path from the traditional disciplines of the liberal arts to a career in engineering. Engineers are trained to solve a diverse set of problems, and a student may major in the field of science or mathematics most closely allied to the engineering subfield in which the student is interested. Combining a science or mathematics major with some additional course work and summer internships in engineering is excellent preparation for future graduate work in engineering or employment in engineering-related fields.

While the Engineering Nexus explicitly is not an engineering degree or accreditation, it is intended as a route into the field of engineering. The experiential portion of the Nexus involves completing a summer internship in the field of engineering. This may be participating in a formal Research Experiences for Undergraduates (REU) program in an academic laboratory, a summer internship with an engineering firm, working abroad for the summer in an engineering laboratory, or other options.

See Also

- Dual-Degree in Engineering (http://catalog.mtholyoke.edu/other-programs/other-degree-certificate-programs/)

Contact Information

Eleanor Townsley, Nexus director
Katie Walker, coordinator

108 Daniel L. Jones Building
413-538-3010
https://www.mtholyoke.edu/academics/find-your-program/engineering (https://www.mtholyoke.edu/academics/find-your-program/engineering/)

Faculty

This area of study is administered by the Engineering committee:
Katherine Aidala, Kennedy-Schelkunoff Professor of Physics; Director of the Fimbel Maker & Innovation Lab

Requirements for the Nexus

A minimum of 18 credits:

Code	Title	Credits
Three courses above the 100 level approved by the Nexus in Engineering advisor		12
One 300-level course approved by the Nexus in Engineering advisor or selected with approval of the track chair		4
A substantive internship [1]		
COLL-211	Reflecting Back: Connecting Internship and Research to Your Liberal Arts Education	2
A presentation at LEAP Symposium		
Total Credits		**18**

[1] At least 200 work hours and responsibilities that exercise ability to think analytically and creatively, and contribute meaningfully to the organization's stated mission and complements the student's area of focus

Additional Specifications

- Given the diversity of the engineering field, a wide range of courses can count toward the Nexus. Note that a random selection from the list of Nexus in Engineering courses provided will not be automatically approved by an Engineering Nexus advisor. It is critical for students to understand what subfields of engineering they wish to pursue and how they enhance their existing majors.
- Nexus students will develop a brief proposal outlining their specific area of focus including a course outline. Students will schedule an advising meeting with a track chair to get approval and complete a Plan of Study form (https://docs.google.com/forms/d/e/1FAIpQLSeKmJ0emEKS2yRQpDd_YULP8lNbkckyh9Rf1ys4M_dvIyh-0A/viewform/) to be returned to the Nexus Program office.
- The sequence of a Nexus is part of what makes it unique:
  - In preparation for the summer internship or research, students complete courses chosen in consultation with the track chair. If seeking funding through LYNK UAF, students will additionally complete orientation and advising, and online training.
  - COLL-211 is taken after the internship or research project and culminates in a presentation at LEAP Symposium.
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Courses Counting toward the Nexus

Students craft their selection of courses in consultation with a Nexus in Engineering advisor. These courses are examples of courses that have been used in the past for a particular program. See the Nexus in Engineering website (https://www.mtholyoke.edu/academics/find-your-program/engineering/) for examples of how some of these courses may fit together with majors and subfields of engineering.

Code	Title	Credits
Chemistry		
CHEM-328	From Lilliput to Brobdingnag: Bridging the Scales Between Science and Engineering	4
College(Interdeptmnt) Courses		
COLL-211	Reflecting Back: Connecting Internship and Research to Your Liberal Arts Education	2
Computer Science		
COMSC-226	Engineering Robotic Systems	4
Economics		
ECON-212	Microeconomic Theory	4
ECON-307	Seminar in Industrial Organization	4
Mathematics		
MATH-333	Differential Equations	4
MATH-342	Probability	4
Physics		
PHYS-290	Advanced Laboratory Practicum	1-8
PHYS-308	Electronics	4
PHYS-325	Electromagnetic Theory	4
PHYS-390	Advanced Laboratory Practicum	1-8