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
Katherine Aidala, track chair

217G Dwight Hall
413-538-3010
https://www.mtholyoke.edu/acad/nexus/engineering (https://www.mtholyoke.edu/acad/nexus/engineering/)

Faculty

This area of study is administered by the Engineering committee:
Katherine Aidala, Kennedy-Schelkunoff Professor of Physics

Maria Gomez, Elizabeth Page Greenawalt Professor of Chemistry

Dylan Shepardson, Robert L. Rooke Associate Professor of Mathematics

Naomi Darling, Five College Associate Professor of Architecture Studies

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
Completion of the UAF application stages 1 and 2 [1]		
A substantive internship [2]		
COLL-211	Reflecting Back: Connecting Internship and Research to Your Liberal Arts Education	2
A presentation at LEAP Symposium		
Total Credits		**18**

1. Or a fifth class with approval of the track chair
2. At least 240 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.
- The sequence of a Nexus is part of what makes it unique:
  - Nexus students will develop a brief proposal outlining their specific area of focus and provide a course outline for approval from the track chair. A Plan of Study form must be returned to the Nexus Program office.
  - UAF application stages 1 and 2 must be completed before the internship or research project.
  - COLL-211 is taken after the internship or research project and culminates in a presentation at LEAP Symposium.
- Students are highly encouraged to take advantage of the Five College offerings in engineering. Students often take the 300-level course off campus.

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 (http://www.mtholyoke.edu/acad/nexus/engineering/) for examples of how some of these courses may fit together with majors and subfields of engineering.

Code	Title	Credits
College(Interdeptmnt) Courses		
COLL-211	Reflecting Back: Connecting Internship and Research to Your Liberal Arts Education	2
Computer Science		
COMSC-211	Advanced Data Structures	4
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