



**2009-2010
Suggested Course
of Study**

**Mathematics
Department
(541) 463-5392**

**Science Department
(541) 463-5446**

Engineering

This suggested course of study is for students interested in pursuing a bachelor's degree in engineering. A suggested course of study is not the same as a state-approved vocational program in which a student earns a degree or certificate issued by the Lane Board of Education.

Lane Community College offers the first two years of college core science, engineering, and general education courses needed for most engineering major disciplines. The AAOT course of study shown below includes lower division general education requirements needed for a degree in at state university in Oregon. Certain engineering disciplines may require additional courses that are not offered at Lane. If your particular area of study has course requirements not available at Lane, then Linn-Benton Community College might offer the necessary courses. See one of Lane's Engineering advisors for more information.

Most Lane engineering students transfer to Oregon State University (OSU), but many have continued successfully at other well-known professional schools. Students who wish to complete all of the lower division general education requirements for OSU before they transfer may wish to consider

earning an Associate of Science (AS) degree while at Lane. In addition to the OSU general education and engineering core requirements, only three additional credits are required to earn the AS degree from Lane. See the suggested program of study at the end of this listing.

At the earliest opportunity, an interested student should meet with one of Lane's Engineering advisors. Most engineering courses at Lane are offered only once each academic year, and they must be taken in sequence. A well-planned course of study at Lane is essential to ensure a smooth transition to a university. In addition, it is very important for a transfer student to consult the engineering advisor at the specific intended transfer university.

Students who need mathematics preparation before beginning calculus must complete preparatory course work (such as the One-Year Preparatory Curriculum listed below) before enrolling in most of the courses listed in the Two-Year Curriculum.

See the mathematics and science division counselors or advisors for assistance in term-by-term schedule planning and for answers to questions about transfer requirements of various universities.

Engineering

One-Year Preparatory Curriculum – for students needing pre-calculus mathematics

This option allows the student to complete many of the general education requirements and the required freshman chemistry courses prior to beginning the Two-year Core Curriculum.

	Fall
MTH 111 College Algebra *	5
WR 121 English Composition: Exposition and Introduction to Argument ^{*,1,G}	4
General Education requirements 3 and required electives	6-8
Total Credits	15-17

	Winter
MTH 097 Geometry *	4
CH 221 General Chemistry 1 ^{*,1,G}	5
General Education requirements 3 and required electives	6-8
Total Credits	15-17

	Spring
MTH 112 Trigonometry *	4
CH 222 General Chemistry 2 ^{*,1,2,G}	5
General Education requirements 3 or required electives	3
Choice of:	4
SP 111 Fundamentals of Public Speaking ^{1,G}	
SP 112 Persuasive Speech ^{1,G}	
Total Credits	16

Two-Year Curriculum – for students ready to begin the Engineering studies with calculus

	First Year	Fall
MTH 251 Calculus 1 ^{*,1,G}		5
CH 221 General Chemistry 1 ^{*,1,G}		5
ENGR 101 Engineering Orientation ^{*,2,G}		3
WR 121 English Composition: Exposition and Introduction to Argument ^{*,1,G}		4
Total Credits		17

	Winter
MTH 252 Calculus 2 ^{*,1,G}	5
CH 222 General Chemistry 2 ^{*,2,G}	5
ENGR 102 (199) Engineering Orientation 2 ^{*,1,G}	3
PH 211 General Physics w/Calculus ^{*,1,G}	5
Total Credits	18

	Spring
MTH 253 Calculus 3 ^{*,1,G}	4
MTH 261 Linear Algebra ^{*,1,G}	2
PH 212 General Physics w/Calculus ^{*,1,G}	5
ENGR 115 Engineering Graphics ^{*,1,2,G}	3
Total Credits	14

	Second Year	Fall
MTH 254 Vector Calculus 1 ^{*,1,G}		4
ENGR 211 Statics ^{*,1,G}		4
PH 213 General Physics w/Calculus ^{*,1,G}		5
Total Credits		13

	Winter
ENGR 221 Electrical Fundamentals ^{*,1,G}	4
WR 227 Technical Writing ^{*,2,G}	4
MTH 265 Statistics for Scientists and Engineers ^{*,2,G}	4
Choice of:	4
MTH 255 Vector Calculus 2 ^{*,2,G}	
ENGR 213 Strength of Materials ^{*,1,2,G}	
Total Credits	19

	Spring
MTH 256 Differential Equations ^{*,1,G}	4
ENGR 212 Dynamics ^{*,1,2,G}	4
Choice of:	4
SP 111 Fundamentals of Public Speaking ^{1,G}	
SP 112 Persuasive Speech ^{1,G}	
General Education requirements 3 or required electives	3-4
Total Credits	15-16

* Prerequisite required

- 1 Will be used to meet requirements for OSU Engineering Core GPA. Must earn a grade of "C" or better, not P/NP. ("C-" will not be accepted.)
- 2 Required for graduation in specific engineering majors. Must earn a grade of "C" or better, not P/NP. ("C-" will not be accepted.)
- 3 See Math/Science academic advisor for course selection.

Engineering

Associate of Science degree – with Core Engineering courses included

The following three-year plan for Engineering students satisfies the requirements for an Associate of Science degree from Lane Community College, including all required engineering courses and all necessary general education courses. Additionally, these general education courses will satisfy all of the lower division general education requirements for graduating from Oregon State University. See one of Lane's Engineering advisors for assistance in choosing these specific courses to ensure that they meet both Lane and OSU requirements.

Suggested Course of Study for Engineering students who want to earn an Associate of Science degree at Lane

First Year	Fall
MTH 111 College Algebra *	5
WR 121 English Composition: Exposition and Introduction to Argument ^{*,1,G}	4
HE 275 Lifetime Health and Fitness	3
Arts and Letters Elective (A.S. degree) ³	3-4
Total Credits	15-16

	Winter
MTH 097 Geometry *	4
CH 221 General Chemistry 1 ^{*,1,G}	5
Social Science Elective (A.S. degree) ³	3-4
Total Credits	12-13

	Spring
MTH 112 Trigonometry *	4
CH 222 General Chemistry 2 ^{*,2,G}	5
WR 227 Technical Writing ^{*,1,G}	4
ENGR 115 Engineering Graphics ^{*,1,2,G}	3
Total Credits	16

Second Year	Fall
MTH 251 Calculus 1 ^{*,1,G}	5
ENGR 101 Engineering Orientation ^{*,2,G}	3
Social Science Elective (A.S. degree) ³	3-4
Choice of:.....	4
SP 111 Fundamentals of Public Speaking ^{1,G}	
SP 112 Persuasive Speech ^{1,G}	
Total Credits	15-16

	Winter
MTH 252 Calculus 2 ¹	5
PH 211 General Physics w/Calculus ¹	5
Physical Education Elective (A.S. degree)	1
ENGR 102 (199) Engineering Orientation 2 ¹	3
Total Credits	14

	Spring
MTH 253 Calculus 3 ^{*,1,G}	4
MTH 261 Linear Algebra ^{*,1,G}	2
PH 212 General Physics w/Calculus ^{*,1,G}	5
Physical Education Elective (A. S. degree)	1
Total Credits	12

Third Year	Fall
MTH 254 Vector Calculus 1 ^{*,1,G}	4
ENGR 211 Statics ^{*,1,G}	4
PH 213 General Physics w/Calculus ^{*,1,2,G}	5
Total Credits	13

	Winter
ENGR 221 Electrical Fundamentals ^{*,1,G}	4
Biological Science Elective (A.S. degree) ³	4
Physical Education Elective (A. S. degree)	1
MTH 265 Statistics for Scientists and Engineers ^{*,2,G}	4
Choice of:.....	4
MTH 255 Vector Calculus 2 ^{*,1,2,G}	
ENGR 213 Strength of Materials ^{*,2,G}	
Total Credits	17

	Spring
MTH 256 Differential Equations ^{*,1,G}	4
ENGR 212 Dynamics ^{*,1,2,G}	4
Social Science (A.S. degree) Elective ³	3-4
Arts and Letters (A.S. degree) Elective ³	3-4
Total Credits	14-16

* Prerequisite required

- Will be used to meet requirements for OSU Engineering Core GPA. Must earn a grade of "C" or better, not P/NP. ("C-" will not be accepted.)
- Required for graduation in specific engineering majors. Must earn a grade of "C" or better, not P/NP. ("C-" will not be accepted.)
- See Math/Science academic advisor for course selection.

Standard footnotes:

- * Prerequisite required
- A Meets Arts/Letters requirement
- B Must be passed with grade of "B-" or better to use as a prerequisite
- D Degree or certificate requirement; must be passed with grade of "C-" or better
- G Must be taken for a grade, not P/NP; major requirement

- H Meets Human Relations/Social Science requirement
- M Meets Mathematics requirement
- P Meets PE/Health requirement
- R Required for AAS degree
- S Meets Science/Math/Computer Science requirement
- W Meets Written Communications or English Composition requirement

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and compliance with the Americans with Disabilities Act

7/09