



# COLLEGE OF ENGINEERING

IMPACT • ACCESS • INCLUSION



## Undergraduate Advising Form • MECHANICAL ENGINEERING (Lincoln) CATALOG YEAR 2024-2025

*This form is meant as a planning tool only. Please meet with your advisor each term.*

<b>SEM 1</b> <b>15</b> <b>HRS</b>	<b>MATH 106 (5)</b> Calculus I <i>Pre: MPE 106 or MATH 102 or MATH 103</i>	<b>CHEM 109A&amp;L (4)</b> General Chemistry I <i>Pre: MPE 106 or MATH 102 or MATH 103</i>	<b>ENGR 100 (3)</b> Interpersonal Skills for Engineering Leaders	<b>ACE 1 Writing (3)</b> Choose from JGEN 120, JGEN 200, JGEN 300, or ENGL 151 <b>OR</b> ACE (3) (5, 6, 7, or 9)	<b>ENGR 10 (0)</b> Freshman Seminar		
				*See note in SEM 5			
<b>SEM 2</b> <b>16</b> <b>HRS</b>	<b>MATH 107 (4)</b> Calculus II <i>Pre: MATH 106</i>	<b>CHEM 110A&amp;L (4)</b> General Chemistry II <i>Pre: CHEM 109</i>	<b>PHYS 211 &amp; 221 (5)</b> General Physics I & Lab <i>Pre: MATH 106</i>	<b>CSCE 155N (3)</b> Computer Science I: MATLAB <i>Pre: MATH 102 or MPE 103</i>			
<b>SEM 3</b> <b>17</b> <b>HRS</b>	<b>MATH 208 (4)</b> Calculus III <i>Pre: MATH 107</i>	<b>PHYS 212 (4)</b> General Physics II <i>Pre: PHYS 211 Co: MATH 107</i>	<b>MECH 223 (3)</b> Statics <i>Pre: PHYS 211, MATH 107</i>	<b>MECH 130 (3)</b> Introduction to Geometric Modeling and Mechanical Design Practices	<b>BSEN 206 (3)</b> Engineering Economics <i>Pre: Sophomore Standing</i>	<b>ENGR 20 (0)</b> Sophomore Seminar	
<b>SEM 4</b> <b>16</b> <b>HRS</b>	<b>MATH 221 (3)</b> Differential Equations <i>Pre: MATH 107</i>	<b>MECH 325 (3)</b> Elastic Bodies <i>Pre: MECH 223, MATH 208</i>	<b>MECH 373 (3)</b> Dynamics <i>Pre: MECH 223, MATH 208</i>	<b>MECH 200 (3)</b> Thermodynamics <i>Pre: MECH 223</i>	<b>MATL 360 (4)</b> Elements of Materials Science <i>Pre: CHEM 109A/L, PHYS 212 Co: MECH 223</i>		
<b>SEM 5</b> <b>16</b> <b>HRS</b>	<b>MATH 314 (3)</b> Linear Algebra <i>Pre: MATH 107</i>	<b>MECH 230 (3)</b> Intro to MECH Design <i>Pre: MECH 130, MECH 325</i>	<b>MECH 342 (3)</b> Kinematics & Dynamics of Machinery <i>Pre: MECH 130, MECH 373</i>	<b>ECEN 211 &amp; 231 (4)</b> Elements of Electrical Engineering <i>Pre: MATH 107, PHYS 211</i>	<b>ACE 1 Writing (3)</b> Choose from JGEN 120, JGEN 200, JGEN 300, or ENGL 151 <b>OR</b> ACE (3) (5, 6, 7, or 9)		
					*Choose whichever course not chosen in SEM 1		
<b>SEM 6</b> <b>15</b> <b>HRS</b>	<b>MECH 321 (3)</b> Engineering Statistics <i>Pre: MATH 208</i>	<b>MECH 310 (3)</b> Fluid Mechanics <i>Pre: MECH 373, MATH 221 Co: MECH 200</i>	<b>MECH 350 (3)</b> Dynamics & Control of Engr Systems <i>Pre: MECH 373, ECEN 211, CSCE 155N Co: MATH 314</i>	<b>MECH 380 (3)</b> Measurements <i>Pre: ECEN 231, JGEN 200 Co: MECH 321, MECH 350, MECH 310</i>	<b>MECH 300 (3)</b> Thermal Systems & Design <i>Pre: MECH 200, CSCE 155N</i> <b>Sp</b>	<b>MECH 343 (3)</b> Elements of Machine Design <i>Pre: MECH 325, MATL 360 Co: MECH 342, MECH 321</i>	
<b>SEM 7</b> <b>16</b> <b>HRS</b>	<b>MECH 446 (2)</b> Senior Design I <i>Pre: BSEN 206, MECH 200, 230, 310, 350, Professional Admission to degree program</i> <b>Fa</b>	<b>MECH 370 (3)</b> Manufacturing Methods & Processes <i>Pre: MATL 360, MECH 325</i>	<b>MECH 420 (3)</b> Heat Transfer <i>Pre: MECH 310</i>	<b>MECH 488 (2)</b> Kinematics & Machine Design Lab <i>Pre: MECH 342 Co: MECH 380</i>	<b>TECH ELEC (3)</b>	<b>ACE (3)</b> (5, 6, 7, or 9)	
<b>SEM 8</b> <b>17</b> <b>HRS</b>	<b>MECH 447 (2)</b> Senior Design II <i>Pre: MECH 446</i> <b>Sp</b>	<b>ENGR 400 (1)</b> Professional Ethics & Social Responsibilities <i>Pre: Junior Standing</i>	<b>MECH 487 (2)</b> Thermal Fluids Lab <i>Pre: MECH 200, 380 Co: MECH 420</i>	<b>SENIOR ELEC (3)</b>	<b>DESIGN ELEC (3)</b>	<b>ACE (3)</b> (5, 6, 7, or 9)	<b>ACE (3)</b> (5, 6, 7, or 9)

## **MECHANICAL ENGINEERING**

### **COLLEGE REQUIREMENTS**

- Students may repeat a maximum of three engineering courses.
- Students may take any one engineering course a maximum of two times.
- Pass/No Pass is only an option for up to 12 credits of ACE courses 5, 6, 7, and 9. Pass/No Pass is not an option for other required courses or Engineering electives.
- Students can be reviewed for professional admission twice within one department. If they do not receive professional admission after the second review, they can change their major. If they stay in the College of Engineering they must meet the professional admission criteria of their new major after one review or they must change their major outside of the college.
- Must fulfill the requirements of the catalog year of admission, can change to a subsequent catalog year in consultation with an advisor.
- 30 of the last 36 degree hours must be registered for and completed at UNL or UNO.
- College probation
  - Students with a cumulative GPA of less than 2.4 will be placed on college probation
  - Students move back to good academic standing when their cumulative GPA is 2.4 or higher
  - Students will be dismissed from the College of Engineering after two sequential semesters on college probation
  - Students cannot graduate from the College of Engineering while on college probation

### **DEPARTMENT REQUIREMENTS**

- Grade of 'C' or better required for the following classes: MATH 106, MATH 107, MATH 208, CHEM 109A/L, PHYS 211, and MECH 223.
- PHYS 222 General Physics Lab II (1 cr) may substitute for PHYS 221 General Physics Lab I.
- Choose one ACE elective from each of the four ACE Student Learning Outcomes 5, 6, 7, and 9.
- Choose one from the following ACE 1 electives: JGEN 120, JGEN 200, JGEN 300, or ENGL 151.
- ENGR 200 is recommended for ACE 6 or ACE 9 credit.
- The capstone design sequence must be taken in the order shown in the curriculum and should be taken in the last full academic year (fall-spring) of the program (i.e. MECH 446 in the fall & MECH 447 in the spring).
- Design and technical electives must be chosen from a list of approved 400-level mechanical engineering elective courses provided by the department every semester.
- Senior electives may be either another mechanical engineering technical elective, another mechanical engineering design elective, or, with prior written approval from your advisor, a 300 or higher level engineering, science, or math course.
- Students may choose to complete either MECH 300 or 343 in the sixth semester. If both courses are taken, one may count as the senior elective.
  - MECH 343 Prerequisites:
    - MECH 325; MECH 342 or parallel; MATL 360; MECH 321 or parallel.
  - MECH 300 Prerequisites:
    - MECH 200 and CSCE 155N
- Professional admission – mechanical engineering students will be reviewed for professional admission upon completion of MECH 223 and 43 credit hours (and 12 UNL credit hours for transfer students). To be granted professional admission, a student must:
  - Earn a major GPA of 2.7 or higher at time of review
  - Have no more than 4 withdraws on their record
  - Have no more than 3 repeated courses
  - One must earn professional admission after two reviews or change their major. The second review will occur in the subsequent semester of first review