

Mechanical Engineering and Physics Dual Major

Major Requirements

Degree Type: B.S.M.E.
Minimum Credits Required: 136

University Degree Requirements

For complete details on these and other university degree requirements, refer to the Degree and Graduation Requirements (<https://catalog.ndsu.edu/academic-policies/undergraduate-policies/degree-and-graduation/>) section in the University Catalog.

1. Minimum of 120 semester credits (some programs may exceed this minimum).
2. Complete the University General Education requirements.
3. Minimum institutional GPA of 2.00 based on work taken at NDSU.
4. Minimum of 30 credits in resident at NDSU.
5. Minimum of 36 upper level credits (courses numbered 300 or higher).
6. Students with transfer credit must meet the NDSU 30 credits in residence (#4). Of these 30 credits in residence, a minimum of 15 credits must be in courses numbered 300 or above, and 15 credits must be in the student's declared major curricula.

University General Education Requirements

A list of university approved general education courses along with the administrative policies governing the requirement and the categories is available here (<https://catalog.ndsu.edu/academic-policies/undergraduate-policies/general-education/>).

Code	Title	Credits
Category C: Communication		12
Category R: Quantitative Reasoning		3
Category S: Science and Technology		10
Category A: Humanities and Fine Arts		6
Category B: Social and Behavioral Sciences		6
Category W: Wellness		2
Category D: Cultural Diversity		
Category G: Global Perspectives		
Category L: Digital Literacy		
Total Credits		39

Mechanical Engineering & Physics Major Requirements

Code	Title	Credits
CHEM 121	General Chemistry I	3
CHEM 122	General Chemistry II	3
ECE 301	Electrical Engineering I	3
ECE 306	Electrical Engineering Lab I	1
ENGL 321	Writing in the Technical Professions	3
ENGR 327	Ethics, Engineering, and Technology	3
IME 330	Manufacturing Processes	3
MATH 129	Basic Linear Algebra	3
MATH 165	Calculus I	4
MATH 166	Calculus II	4
MATH 265	Calculus III	4
MATH 266	Introduction to Differential Equations	3
ME 111	Introduction to Mechanical Engineering *	2
ME 212	Fundamentals of Visual Communication for Engineers	3
ME 213	Modeling of Engineering Systems	3
ME 221	Engineering Mechanics I	3
ME 222	Engineering Mechanics II	3

ME 223	Mechanics of Materials	3
ME 331	Materials Science and Engineering	3
ME 331L	Materials Science and Engineering Laboratory	1
ME 352	Fluid Dynamics	3
ME 351	Thermodynamics I	3
ME 412	Engineering Measurements	3
ME 421	Theory of Vibrations	3
ME 442	Machine Design I	3
ME 443	Machine Design II	3
ME 454	Heat and Mass Transfer	3
ME 457	Thermal Systems Laboratory	3
ME 460	Product Design and Development	3
ME 461	Design Project I	3
ME 462	Design Project II	3
PHYS 171	Introductory Projects in Physics	1
PHYS 252	University Physics II	4
PHYS 252L	University Physics II Laboratory	1
PHYS 350	Modern Physics	3
PHYS 355	Classical Mechanics	3
PHYS 361	Electromagnetic Theory	3
PHYS 411	Optics for Scientists & Engineers	3
PHYS 411L	Optics for Scientists and Engineers Lab	1
PHYS 485	Quantum Mechanics I	3
PHYS Elective		3

Total Credits**116**

* Students who have completed ABEN 110, CM&E 111, CE 111, IME 111, ECE 111 or ENGR 111 are not required to take ME 111.

Degree Notes:

- No grade less than 'C' is accepted to fulfill any of the degree requirements.
- Admission to the dual major requires a minimum 2.70 Engineering GPA and a minimum 2.50 cumulative GPA by the end of the sophomore year of the curriculum.
- A 2.50 cumulative GPA is required for graduation.