

# Electrical Engineering and Physics

## Department Information

- **Department Web Site:**  
[www.ndsu.edu/ece/](http://www.ndsu.edu/ece/) (<http://www.ndsu.edu/ece/>)
- **Credential Offered:**  
B.S.E.E.
- **Official Program Curriculum:**  
[catalog.ndsu.edu/undergraduate/program-curriculum/electrical-engineering-physics/](http://catalog.ndsu.edu/undergraduate/program-curriculum/electrical-engineering-physics/) (<http://catalog.ndsu.edu/undergraduate/program-curriculum/electrical-engineering-physics/>)

This dual major option will appeal to students with broad interests in both fundamental physics science and applied engineering methods. Graduates, equipped with analytical problem-solving skills and technical knowledge, will be well prepared to pursue careers in a wide range of fields within industry, government, and higher education. Students will earn one degree, a Bachelor of Science in Electrical Engineering (B.S.E.E.) degree, with a major in electrical engineering and physics.

## Sample Program Guide

IMPORTANT DISCLAIMER: This guide is not an official curriculum. This guide is a sample four-year degree plan of how students might plan this major with other degree requirements to complete their education in four years. Student plans will vary from this sample due to a variety of factors, such as, but not limited to, start year, education goals, transfer credit, and course availability. To ensure proper degree completion, enrolled students should utilize Degree Map (<https://www.ndsu.edu/registrar/degreemap/>) and Schedule Planner (<https://www.ndsu.edu/onestop/degree-map-and-planning/>) in Campus Connection and consult regularly with academic advisors to ensure graduation requirements are being met.

| Freshman                     |         |                                                    |         |
|------------------------------|---------|----------------------------------------------------|---------|
| Fall                         | Credits | Spring                                             | Credits |
| COMM 110                     |         | 3 ECE 111                                          | 3       |
| ENGL 110                     |         | 3 ENGL 120                                         | 3       |
| PHYS 171 <sup>1</sup>        |         | 1 MATH 129 <sup>1</sup>                            | 3       |
| ECE 173 <sup>1</sup>         |         | 4 MATH 166 <sup>1</sup>                            | 4       |
| MATH 165 <sup>1</sup>        |         | 4 PHYS 251 & 251L <sup>1</sup>                     | 5       |
| Gen Ed Wellness              |         | 2                                                  |         |
|                              |         | 17                                                 | 18      |
| Sophomore                    |         |                                                    |         |
| Fall                         | Credits | Spring                                             | Credits |
| EE 206 <sup>1</sup>          |         | 4 PHYS 370 <sup>1</sup>                            | 3       |
| MATH 265 <sup>1</sup>        |         | 4 ECE 311                                          | 4       |
| ECE 275 <sup>1</sup>         |         | 4 MATH 266 <sup>1</sup>                            | 3       |
| PHYS 252 & 252L <sup>1</sup> |         | 5 PHYS 350 <sup>1</sup>                            | 3       |
|                              |         | Gen Ed Humanities/Fine Arts and Cultural Diversity | 3       |
|                              |         | 17                                                 | 16      |
| Junior                       |         |                                                    |         |
| Fall                         | Credits | Spring                                             | Credits |
| ECE 320                      |         | 3 ECE 331                                          | 4       |
| ECE 321                      |         | 2 ECE 343                                          | 4       |
| PHYS 355 <sup>1</sup>        |         | 3 ECE 351                                          | 4       |
| PHYS 360 <sup>1</sup>        |         | 3 ECE 376                                          | 4       |
| PHYS 462 <sup>1</sup>        |         | 3 ECE 401                                          | 1       |

|                                                                       |                |                                                                  |                |
|-----------------------------------------------------------------------|----------------|------------------------------------------------------------------|----------------|
| ENGL 320, 321, 324, or 459                                            |                | 3                                                                |                |
|                                                                       |                | 17                                                               | 17             |
| <b>Senior</b>                                                         |                |                                                                  |                |
| <b>Fall</b>                                                           | <b>Credits</b> | <b>Spring</b>                                                    | <b>Credits</b> |
| ECE 341                                                               |                | 3 ECE 405                                                        | 3              |
| ECE 403                                                               |                | 2 ECE Elective                                                   | 3              |
| ENGR 327                                                              |                | 3 ECE Elective                                                   | 3              |
| PHYS 485 <sup>1</sup>                                                 |                | 3 Gen Ed Social & Behavioral Sciences<br>and Global Perspectives | 3              |
| PHYS Elective (PHYS 215, 481, 486<br>or 489) <sup>1</sup>             |                | 3 Gen Ed Social & Behavioral Sciences                            | 3              |
| ECE/PHYS Elective (PHYS 411/L,<br>PHYS 413, or PHYS 415) <sup>1</sup> |                | 3                                                                |                |
|                                                                       |                | 17                                                               | 15             |
| <b>Total Credits: 134</b>                                             |                |                                                                  |                |

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Grade of C or higher required.