The goal of the UNH BSEP program is to produce broadly-trained engineers who can provide solutions to today's challenging problems in support of a technologically evolving society. The core of the program is based on interdisciplinary training, complemented with a deeper understanding of the physical principles needed to support careers in engineering, engineering research or, perhaps, further training in systems engineering. The program balances depth and breadth in skill development; flexibility and functionality are what drive the program in the sense that 1) the particular focus is based on the student's interests, and 2) the breadth of the course selection is guided by the post-graduation goals of the student (e.g., employment versus graduate school).

A student must have a minimum grade of C in each 400- or 500-level courses that are part of the core requirements and an overall grade-point average of 2.33 in these courses in order to continue in the program.
Engineering Physics Major (B.S.)

Discovery Courses 8

Third Year

Fall

PHYS 616 Classical Mechanics and Mathematical Physics II 4
ME 608 Fluid Dynamics 3
ECE 541 Electric Circuits 4
Discovery Course 4

Credits 16

Spring

PHYS 703 Electricity and Magnetism I 4
ECE 548 Electronic Design I 4
Elective in Major 3-4
Discovery Course 4

Credits 15

Fourth Year

Fall

PHYS 797 Senior Design Project 2
ECE 651 Electronic Design II 4
Elective in Major 3-4
Discovery Course 4
Free Elective 4

Credits 17-18

Spring

PHYS 797 Senior Design Project 2
ME 743 Satellite Systems, Dynamics, and Control 3
Elective in Major 4
Discovery Course 4
Free Elective 4

Credits 17

Total Credits 129-131

Engineering Research Track

Course Title Credits
First Year
Fall
PHYS 407H Honors/General Physics I 4
MATH 425H Honors/Calculus I 4
CHEM 405 Chemical Principles for Engineers 4
PHYS 400 Physics Seminar I 1
Discovery Course 4

Credits 17

Spring

PHYS 408H Honors/General Physics II 4
MATH 426H Honors/Calculus II 4
IAM 550 Introduction to Engineering Computing 4
ENGL 401 First-Year Writing 4

Credits 16

Second Year

Fall

PHYS 505 General Physics III 3

PHYS 506 General Physics III Laboratory 1
MATH 528 Multidimensional Calculus 4
ECE 541 Electric Circuits 4

Discovery Course 4

Credits 16

Third Year

Fall

PHYS 508 Thermodynamics and Statistical Mechanics 4
ECE 651 Electronic Design II 4
PHYS 616 Classical Mechanics and Mathematical Physics II 4
Discovery Course 4

Credits 16

Spring

PHYS 703 Electricity and Magnetism I 4
ECE 543 Introduction to Digital Systems 4
Elective in Major 4
Discovery Course 4

Credits 16

Fourth Year

Fall

PHYS 797 Senior Design Project 2
PHYS 704 Electricity and Magnetism II 4
PHYS 708 Optics 4
ECE 633 Signals and Systems I 3
Elective in Major 4
Discovery Course 4

Credits 21

Spring

PHYS 797 Senior Design Project 2
ECE 647 Random Processes and Signals in Engineering 3
ME 608 Fluid Dynamics 3
Elective in Major 4
Discovery Course 4

Credits 16

Total Credits 134

Student Learning Outcomes

The Student Outcomes consist of the ABET general requirements for all engineering programs. Students are expected to achieve the outcomes below upon graduation.
• An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

• An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

• An ability to communicate effectively with a range of audiences.

• An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

• An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

• An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

• An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.