SURVEYING ENGINEERING, B.S.

Begin Campus: Wilkes-Barre
End Campus: Wilkes-Barre

Degree Requirements

For the Bachelor of Science degree in Surveying Engineering, a minimum of 132 credits is required:

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27 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 9 credits of GWS courses; 6 credits of GQ courses; 9 credits of GN courses; 3 credits of GS courses.

Requirements for the Major

To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44. The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also vary subject to the program. For additional information, see the General Education Requirements section of the Bulletin and consult your academic adviser.

Code | Title                                                                 | Credits |
-----|-----------------------------------------------------------------------|---------|
EDSGN 100 | Cornerstone Engineering Design                                      | 3       |
MATH 230  | Calculus and Vector Analysis                                        | 4       |
MATH 251  | Ordinary and Partial Differential Equations                        | 4       |
PHYS 211  | General Physics: Mechanics                                         | 4       |
PHYS 212  | General Physics: Electricity and Magnetism                          | 4       |
PHYS 214  | General Physics: Wave Motion and Quantum Physics                   | 2       |
SUR 212   | Route and Construction Surveying                                   | 4       |
SUR 222   | Photogrammetry                                                      | 3       |
SUR 262   | Coordinate Systems in Map Projections                               | 2       |
SUR 341   | Adjustment Computations                                             | 3       |
SUR 351   | Geodetic Models                                                     | 3       |
SUR 362   | Introduction to Geospatial Information Engineering                 | 3       |
SUR 381   | Stormwater Hydraulics and Hydrology                                 | 4       |
SUR 441   | Data Analysis and Project Design                                    | 3       |
SUR 455   | Precise Positioning Systems                                         | 3       |
SUR 462   | Parcel-Based Geospatial Information Systems                         | 3       |
SUR 471   | Professional Aspects of Land Surveying                             | 3       |
SUR 490   | Seminar in Surveying                                                | 1       |
SUR 162   | Methods in Large Scale Mapping                                      | 3       |
SUR 241   | Surveying Measurement Analysis                                      | 3       |
SUR 272   | Cadastral Surveying                                                 | 3       |
SUR 372W  | Legal Aspects of Land Surveying                                    | 3       |
CE 410    | Sustainable Residential Subdivision Design                          | 3       |
or SUR 482 | Land Development Design                                             | 3       |

Select one of the following:

- ECON 102 Introductory Microeconomic Analysis and Policy
- ECON 104 Introductory Macroeconomic Analysis and Policy
- ECON 14 Principles of Economics

Additional Courses: Require a grade of C or better

- CAS 100A Effective Speech                                           | 3       |
or CAS 100B Effective Speech                                         | 3       |
- ENGL 15 Rhetoric and Composition                                    | 3       |
or ENGL 30H Honors Rhetoric and Composition                           | 3       |
- ENGL 202C Effective Writing: Technical Writing                     | 3       |
or ENGL 202D Effective Writing: Business Writing                     | 3       |

Supporting Courses and Related Areas

Select 6 credits from the following: 6

- CE 300-level courses
- CE 400-level courses
- SUR 313 Integrated Surveying                                       | 3       |
- SUR 422 Digital Photogrammetry                                     | 3       |
- SUR 496 Independent Studies                                        | 3       |
- SUR 497 Special Topics                                             | 3       |

1 These courses are not offered at Wilkes-Barre campus. They are provided to accommodate concurrent degree students in CE and SURE.

General Education

Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements section of the Bulletin and consult your academic adviser.

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

Foundations (grade of C or better is required.)

- Quantification (GQ): 6 credits
- Writing and Speaking (GWS): 9 credits

Knowledge Domains

- Arts (GA): 6 credits
- Health and Wellness (GHW): 3 credits
- Humanities (GH): 6 credits
• Social and Behavioral Sciences (GS): 6 credits
• Natural Sciences (GN): 9 credits

Integrative Studies (may also complete a Knowledge Domain requirement)
  • Inter-Domain or Approved Linked Courses: 6 credits

University Degree Requirements

First Year Engagement
All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3 credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.

Cultures Requirement
6 credits are required and may satisfy other requirements
  • United States Cultures: 3 credits
  • International Cultures: 3 credits

Writing Across the Curriculum
3 credits required from the college of graduation and likely prescribed as part of major requirements.

Total Minimum Credits
A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits. Students should consult with their college or department adviser for information on specific credit requirements.

Quality of Work
Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

Limitations on Source and Time for Credit Acquisition
The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#83-80)). For more information, check the Suggested Academic Plan for your intended program.