Engineering, M.S.E.

Degree Offered

- Master of Science, Engineering (M.S.E.)

Nature of the Program

The M.S.E. is a college-wide undesignated program that compliments the designated master's program in each of the individual engineering discipline majors, namely, aerospace engineering, chemical engineering, civil engineering, electrical engineering, industrial engineering, materials science and engineering, mechanical engineering, mining engineering or petroleum and natural gas engineering. Students may structure a unique masters degree that crosses disciplines; for example, a program that addresses one of the Grand Challenges of Engineering may be effectively addressed with an M.S.E.

The master of science in engineering (M.S.E) program may be advised for students who have a baccalaureate degree in a field of engineering different from the M.S. major they are seeking. It is also open to students holding a baccalaureate degree in the physical sciences who wish to pursue an M.S. degree in an engineering program. For these students, additional preparatory undergraduate coursework may be required.

The M.S.E. can provide students with the background and experience to pursue doctoral work in engineering.

Due to the interdisciplinary nature of the degree program, the M.S.E. can also serve as an avenue to explore and develop potential future M.S. programs in a new engineering discipline on an experimental basis.

Curriculum in Master of Science in Engineering

A candidate for the M.S. degree in engineering must comply with the rules and regulations as outlined in the WVU Graduate Catalog and the specific requirements of the Statler College and the specific department in which the student's concentration is in.

Program Requirements

All M.S. degree candidates are required to perform research and follow a planned program of study. The student's research advisor, in conjunction with the student's Advising and Examining Committee (AEC) will be responsible for determining the plan of study appropriate to the student's needs. The underlying principle of the planned program is to provide the students with the necessary support to complete their degree and prepare them for their career.

Curriculum Requirements

Code	Title	Hours
A minimum cumulative GPA of 3.0 is required in all courses		
Course Requirements *		
A minimum of 60% of courses must be from 500 level or above		
Plan of Study		
Select from the following based on degree path:		24
Any BIOM, BMEG, CE, CHE, CHEM, CPE, CS, EE, IENG, IH&S, MAE, MATH, MINE, PNGE, PHYS, SAFM, SENG, or STAT courses 400-795, as approved by the student's AEC		
Complete 1 of the following options:		6
Thesis Option - 6 hours		
Research - any 697 (6 hours)		
Final Oral or Written Examination		
Thesis		
Problem Report Option - 6 hours		
Complete 3 additional hours of coursework		
Research - any 697 (3 hours)		
Final Oral or Written Examination		
Formal written report or professional report/paper		
Coursework Option - 6 hours		
Complete 6 additional hours of coursework		
Total Hours		30

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Students who do not hold a baccalaureate degree in engineering may be required to take a set of undergraduate engineering courses above and beyond the minimum coursework requirements.

Final Examination

M.S. students following the thesis or problem report option must prepare a written research proposal. The proposal must be approved by the student's AEC at least one semester prior to the final oral examination.

All students, regardless of option, are required to pass a final oral or written examination, administered by their AEC, covering the thesis or problem report and/or related course material.

Suggested Plan of Study

The plan below illustrates the Thesis Option. It is important for students to take courses in the order specified as much as possible; all prerequisites and concurrent requirements must be observed. A typical M.S.E. degree program that completes degree requirements in three semesters is as follows.

First Year			
Fall	**Hours**	**Spring**	**Hours**
Course	3	Course	3
Course	3	Course	3
Course	3	Course	3
Course	3		
	12		9
Second Year			
Fall	**Hours**		
Course	3		
Course	3		
Research	3		
	9		

Total credit hours: 30

Major Learning Outcomes

Upon graduation, with a masters of science degree in engineering, students will have:

- An expert level understanding of the advanced principles of their engineering specialty
- Ability to apply advanced methodologies in their specialty area
- Ability to design and conduct original experiments, analyze and interpret data, and develop recommendations with a high degree of independence
- Advanced ability to use contemporary techniques, skills, and tools necessary for engineering practice in education, industry, and/or government
- Ability to effectively communicate technical information in the form of a thesis, scientific publication or presentation
- Understanding of professional and ethical responsibility
- Ability to understand the impact of engineering solutions in global and societal context
- Recognition of the need to engage in life-long learning
- Foundational preparation to pursue doctoral studies