

# ENGINEERING (M.S.) - THESIS

**Important:** This degree plan is effective for those starting this degree program in fall 2022 through summer 2023. This degree plan will remain in effect for students who do not break enrollment or who do not change degree programs, concentrations, or cognates.

Code	Title	Hours
<b>Core Courses</b> <sup>1</sup>		
ENGR 596	Graduate Orientation/Seminar Series	3
ENGR Elective <sup>2</sup>		3
ENGR Elective <sup>2</sup>		3
ENGR Elective <sup>2</sup>		3
ENGR Elective <sup>2</sup>		3
ENGR Elective <sup>2</sup>		3
ENGR Elective <sup>2</sup>		3
ENGR Elective <sup>2</sup>		3
<b>Total Hours</b>		<b>24</b>

<sup>1</sup> A M.S. committee comprising three faculty members who have earned their Ph.D.s will oversee the M.S. student's research and educational program. One committee member will be the advisor. The committee is responsible for oversight of the following: (1) the educational program of study, and (2) the thesis defense. In order to complete the requirements for this degree, the student must plan a program with the M.S. committee.

<sup>2</sup> Choose from the following courses, based on plan of study approved by M.S. committee: ENGR 501 Numerical Methods (3 c.h.), ENGR 503 Partial Differential Equations (3 c.h.), ENGR 504 Ordinary Differential Equations (3 c.h.), ENGR 505 Finite Element Analysis (3 c.h.), ENGR 512 Computing Languages (Python, MATLAB, C, C++, Fortran) (3 c.h.), ENGR 517 Advanced Thermodynamics (3 c.h.), ENGR 521 Advanced Heat Transfer (3 c.h.), ENGR 525 Continuum Mechanics (3 c.h.), ENGR 527 Advanced Mechanics of Materials (3 c.h.), ENGR 541 Inelasticity (3 c.h.), ENGR 543 Damage and Fracture (3 c.h.), ENGR 545 Fatigue (3 c.h.), ENGR 595 Directed Individual Study in Engineering (3 c.h.), ENGR 596 Graduate Orientation/Seminar Series (3 c.h.), ENGR 597 Special Topics in Engineering (3 c.h.), ENGR 606 Computational Fluid Dynamics (3 c.h.), ENGR 615 Bio-Inspired Design (3 c.h.), ENGR 616 Design Optimization (3 c.h.), ENGR 631 Composite Materials (3 c.h.), ENGR 635 Materials Processing Methods (3 c.h.), ENGR 637 Materials Characterization Methods (SEM, OM) (3 c.h.), ENGR 639 Mechanical Metallurgy (3 c.h.), ENGR 651 Integrated Computational Materials Engineering (ICME) (3 c.h.), ENGR 687 Thesis Research in Engineering (3 c.h.), ENGR 688 Thesis Research in Engineering (6 c.h.), ENGR 689 Thesis Research in Engineering (9 c.h.), and ENGR 690 Thesis Defense in Engineering (0 c.h.).

Code	Title	Hours
<b>Thesis Courses</b>		
ENGR Elective <sup>1</sup>		12
ENGR 690	Thesis Defense in Engineering	0
<b>Total Hours</b>		<b>12</b>

<sup>1</sup> Choose a minimum of 12 hours from the following: ENGR 687 Thesis Research in Engineering (3 c.h.), ENGR 688 Thesis Research in

Engineering (6 c.h.), and ENGR 689 Thesis Research in Engineering (9 c.h.).

*All applicable prerequisites must be met*

## Graduation Requirements

- Complete 36 hours
- A minimum of 12 hours must be completed through Liberty University, not to include credits from a prior degree earned through Liberty
- A maximum of 24 hours of transfer credit, including credit from a degree on the same academic level previously earned through Liberty, may be applied to the degree
- 3.0 GPA
- No grades lower than B- may be applied to the degree
- Degree must be completed within 5 years
- Submission of Degree Completion Application must be completed within the last semester of a student's anticipated graduation date

## Program Offered in Residential Format