ENGINEERING MANAGEMENT

Department Website: Engineering Management (https://www.gonzaga.edu/school-of-engineering-applied-science/graduate/mem/)

Gonzaga University's School of Engineering and Applied Science (SEAS) offers a fully online Master of Engineering Management (MEM) degree for professionals involved in managing engineering technologies. The three-fold goals of the program are to:

1. Provide skills necessary to manage continually evolving technologies,
2. Develop a foundation for making strategic engineering decisions, and
3. Provide skills required to advance in project/product/process management positions.

Courses are offered online over an eight-week period. Students may register and take courses asynchronously from anywhere in the world. (Visit our website at https://gonzaga.edu/school-of-engineering-applied-science/graduate/mem (https://gonzaga.edu/school-of-engineering-applied-science/graduate/mem/))

Admissions

1. Students applying to Gonzaga University must submit Gonzaga's Graduate Application, which can be accessed online at https://www.gonzaga.edu/gradapply (https://www.gonzaga.edu/gradapply/).
2. Along with the application for graduate study, each program at Gonzaga has distinct admission requirements. Please refer to the table below to view that detailed information.

Program Name	How to Apply Link
Master's in Engineering Management	https://www.gonzaga.edu/school-of-engineering-applied-science/graduate/mem/apply (https://www.gonzaga.edu/school-of-engineering-applied-science/graduate/mem/apply/)

Required Qualifications

Applicants should have a Bachelor of Science degree in a STEM field, such as:

- Engineering field, i.e. Biomedical, Civil, Computer, Electrical, Mechanical, etc.
- Mathematics
- Chemistry, Biology, or Biochemistry
- Computer Science
- Physics

Program prerequisites are:

- Calculus I, II & III
- Ordinary differential equations
- One lab science in Chemistry, Biology, Biochemistry, or Physics

Prerequisite course credits are not counted toward the graduate degree program credits. They must be taken in addition to the 30 credits required for the MEM degree.

Any applicants with a non-STEM degree should discuss prerequisite courses with the Admissions Specialist.

Master in Engineering Management Program Requirements

To complete the MEM degree program, thirty credit hours of courses are required beyond the pre-requisite courses. Students are expected to maintain a minimum grade point average of 3.00. Degree requirements consist of 12 credit hours of core courses and 18 hours of graduate-level electives. Upon approval by the program director, one 400-level undergraduate engineering course may be accepted as a technical elective if it does not replicate a course in the candidate's undergraduate degree.

Minimum of Thirty (30) credits that must include:

- 12 credits of core Engineering Management (ENGM) courses
- 9 credits of Engineering Management elective courses
- 6 credits of Master of Business Administration (MBUS) courses
- 3 credits of Leadership courses

Code	Title	Hours
Core Courses		
ENGM 510	Engineering Portfolio Management	3
ENGM 520	Statistical Quality Control	3
ENGM 530	Strategic Engineering Decision	3
ENGM 601	Master's Project	3
Engineering Management Elective Courses		
ENGM 505	Engineering Project Management	3
ENGM 525	Quality Systems	3
ENGM 540	Global Engineering Management	3
ENGM 550	Systems Engineering Design	3
ENGM 580	Special Topics	3
Approved Business Electives (Working Professionals Only, approval of MEM Director Required):		
Choose six credits of the following:		
MBUS 520	Financial Management	
MBUS 560	Accounting Analysis	
MBUS 671	Risk Management	
MBUS 699	Special Topics (Negotiations)	
Master of Business Administration Courses		
Select six credits of the following: [1]		6
MBUS 612	Managing People and Performance	
MBUS 613	Quantitative and Stats Analysis	
MBUS 625	Operations Theory and Practice	
MBUS 670	Foundations of Project Management	
MBUS 673	Global Project Management	
MBUS 674	Agile Project Management	
MBUS 675	Quality Management	
Leadership Courses		
Select one of the following:		3
ORGL 504	Organizational Communication	
ORGL 515	Leadership and Human Potential	
ORGL 570	Introduction to Global Systems	

TADP 556	Engineering Leadership	
Total Hours		**36**

[1] If the equivalent of Gonzaga ENGM 405 Engineering Project Management has not been taken, MBUS 670 Foundations of Project Management or ENGM 505 Engineering Project Management must be selected for three of the MBA course credits. ENGM 505 Engineering Project Management will not satisfy both Engineering Management elective course and Master of Business Administration course requirements.

Courses

ENGM 505. Engineering Project Management. (3 Credits)
Modern organizations rely heavily on project management to ensure that they realize their organizational strategies and objectives. In recent years, project management has increased in visibility and importance, both as a profession and as an organizational priority. Organizations are demanding professionals who can deliver on the promise of project management. This course will introduce the fundamentals of effective traditional and agile project management, present industry standards and best practices, while providing guidance on becoming project management professionals.
Equivalent: MBUS 670
Enrollment limited to students in the School of Engineering/Appl Sci college.

ENGM 510. Engineering Portfolio Management. (3 Credits)
Assessment and management of engineering development portfolios using the Stage-Gate approach, technology readiness levels and manufacturing readiness levels.

ENGM 520. Statistical Quality Control. (3 Credits)
Statistical process control including Shewhart charts, univariate control, multi-variate control and designed experiments.

ENGM 525. Quality Systems. (3 Credits)
Exploration of the philosophies and methodologies employed in quality science: Principles of quality, Tools and techniques for quality, Performance excellence standards. International standards and specific applications in aerospace (AS9100) and biomedical (cGMP) industries.

ENGM 530. Strategic Engineering Decision. (3 Credits)
Competitive assessment, strategic road mapping, risk management, collaboration strategies, intellectual property, patents/trade secrets

ENGM 540. Global Engineering Management. (3 Credits)
Export/import issues for technology, designing for global markets, global technology drivers, product lifecycle management, working effectively in virtual teams

ENGM 550. Systems Engineering Design. (3 Credits)
Overview of the key engineering activities to design, manufacture, and sustain products. Traditional approach to managing engineering technologies plus disruptions caused by highly interconnected, digital data and technologies collectively known as Industry 4.0.

ENGM 580. Special Topics. (0-4 Credits)
May be repeated for credit.
Course topics address themes relevant to managing engineering technology. This course may be repeated with a change in subject matter for a maximum of 3 credits.

ENGM 601. Master's Project. (1-3 Credits)
May be repeated for credit.
Application of engineering management principles to a business or non-profit organization, including background literature review, characterization of existing situation, recommendations for improvement of organizational efficiency.
Prerequisites: ENGM 510 with a minimum grade of C and ENGM 520 with a minimum grade of C and ENGM 530 with a minimum grade of C