

Oregon Institute of Technology
Master of Science in Engineering (MSE)
Curriculum Map according to Catalog Year 2022-23

Any deviations from courses listed below must be approved by academic advisor, department chair, and Registrar's office. Substitution is not official until shown in official student records.
 Course descriptions can be found in the university catalog (www.oit.edu/catalog)

Course Notes	Required Oregon Tech Courses				Pre- and Co-requisites	YEAR 1			YEAR 2			NOTES				
	Prefix	No.	Course Title	Credits		F	W	S	F	W	S					
Graduate Research, Development & Innovation (required for all MSE tracks)					21											
	ENGR	511	Research Methods & Innov.: Intellectual Property	4	Graduate Standing	4										
	ENGR	512	Research Methods & Innov.: Research Methods	4	Graduate Standing		4									
	ENGR	513	Research Methods & Innov.: Strategy & Innovation	4	Graduate Standing				4							
1, 2	ENGR / EE	596 / 597 / 598	Graduate R&D / Project / Thesis	3	Graduate Standing					3						
1, 2	ENGR / EE	596 / 597 / 598	Graduate R&D / Project / Thesis	3	Graduate Standing						3					
1, 2	ENGR / EE	596 / 597 / 598	Graduate R&D / Project / Thesis	3	Graduate Standing								3			
MSE in Electrical Engineering					24											
3	EE / ENGR / REE	5XX	Depth: EE Specialty Course I	4	Per catalog	4										
3	EE / ENGR / REE	5XX	Depth: EE Specialty Course II	4	Per catalog		4									
3	EE / ENGR / REE	5XX	Depth: EE Specialty Course III	4	Per catalog				4							
4			Engineering Elective	4	Per catalog					4						
4			Engineering Elective	4	Per catalog						4					
4			Engineering Elective	4	Per catalog							4				
MSE in Embedded Systems Engineering (not offered in AY2022/23)					24											
	EE	535	Embedded Systems I	4	Graduate Standing	4										
	EE	555	Embedded Systems II	4	Graduate Standing		4									
	EE	565	Sensors and Instrumentation	4	Graduate Standing				4							
5			Engineering Elective	4	Per catalog					4						
5			Engineering Elective	4	Per catalog						4					
5			Engineering Elective	4	Per catalog							4				
MSE in Optical Engineering (not offered in AY 2022/23)					24											
	EE	548	Geometric Optics	4	PHY 223	4										
	EE	549	Optical Detection and Radiometry	4	PHY 223		4									
	EE	550	Physical Optics	4	PHY 223				4							
	EE	551	Lasers	4	EE 550					4						
	EE	552	Waveguides and Fiber Optics	4	EE 550						4					
	EE	553	Optical Metrology	4	EE 550							4				
MSE in Power Systems Engineering					24											
	REE	529	Power Systems Analysis	3	Graduate Standing	3										
	REE	549	Power System Protection & Control	3	REE 529		3									
	REE	569	Grid Integration of Renewables	3	REE 549				3							
6			Engineering Elective	3	Per catalog					3						
6			Engineering Elective	3	Per catalog						3					
6			Engineering Elective	3	Per catalog							3				
6			Engineering Elective	3	Per catalog								3			
6			Engineering Elective	3	Per catalog									3		
MSE in Robotics, Autonomous Systems, and Control Engineering					24											
	ENGR	561	Modeling & Simulation of Dynamic Systems	4	Graduate Standing	4										
	ENGR	562	Control Engineering II: Modern Methods	4	ENGR 561, EE461 or equivalent		4									
	ENGR	563	Motion Control in Mechanisms and Robotics	4	ENGR 561				4							
	ENGR	564	Autonomous Systems	4	ENGR 562, ENGR 563					4						
	EE	530	Linear Systems and Digital Signal Processing	5	Graduate Standing						5					
7			Engineering Elective	3	Per catalog								3			
MSE in Systems Engineering					24											
	SEM	521	Foundations of Systems Engineering	4	Graduate Standing	4										
	SEM	522	Advanced Systems Engineering	4	Graduate Standing		4									
	SEM	525	Advanced Engineering Management	4	Graduate Standing				4							
8			Engineering/Technology Management Elective	4	Per catalog					4						
8			Engineering/Technology Management Elective	4	Per catalog						4					
8			Engineering/Technology Management Elective	4	Per catalog							4				
Minimum Total Required Credits						45	7/8	7/8	7/8	7/9	7/9	6/7				

- Notes:**
- 1) A minimum of three terms or 9 credits of ENGR 596 - Graduate R&D, ENGR 597 - Graduate Project, or ENGR 598 - Graduate Thesis must be completed. ENGR 596 and ENGR 598 are not accepted for accelerated BS/MS students who have not completed an undergraduate engineering senior capstone project.
 - 2) For the general MS Engineering (no specialty) and MSE in Systems Engineering, a coursework-only option is available. In this option, 9 credits of R&D, project, or thesis are replaced with graduate-level engineering courses with a substantial research or project component. The coursework-only option requires advisor approval and is not available for students following the accelerated BS/MS program.
 - 3) To meet depth requirement, students must select at least three courses from one of the following tracks: Automation, Robotics, and Control; Embedded Systems and Interconnected Devices; Optical Engineering; Power Systems Engineering; or three courses from the following list: EE 501, EE 525, EE 526, EE 530, EE 532, EE 535, EE 560, EE 565, EE 575. Other courses may be used with advisor approval. Refer to catalog for course descriptions (www.oit.edu/catalog).
 - 4) Select from: any 500-level EE course not used towards meeting depth requirement, ENGR 561, ENGR 562, ENGR 563, ENGR 564, REE 529, REE 549, REE 569, SEM 521, or other advisor-approved engineering elective.
 - 5) Select from: EE 501, EE 526, EE 530, EE 532, EE 549, EE 575, EE 585, ENGR 561, ENGR 562, ENGR 563, ENGR 564, SEM 521, or other advisor-approved engineering elective.
 - 6) Select from: REE 527, REE 545, REE 547, REE 559, REE 567, REE 571, REE 581, SEM 521, or other advisor-approved engineering elective
 - 7) Select from: EE 535, EE 555, EE 565, SEM 521, or other advisor-approved engineering elective.
 - 8) Select from: any 500-level EE, ENGR, or REE course, or other advisor-approved engineering or technology management elective.

Other MSE Requirements

- 1) **Continuous Enrollment:** All graduate degree-seeking students at Oregon Tech must be continuously enrolled. Continuous enrollment is defined as completing, with grades assigned, a minimum of 1 hour of graduate credit every quarter (excluding summer).
- 2) **Academic Performance:** Students must maintain a cumulative GPA of 3.0 or better in all graduate work specific to the program of study to remain in good academic standing. Grades below C do not meet requirements for a graduate degree or for course prerequisites.
- 3) **Transfer Credits and Credits Completed Prior to Admission:** With advisor approval, students may transfer up to 15 graduate credits from other accredited institutions and apply those credits toward the MSE degree. Only grades of A and B are accepted for transfer credit. Students can apply up to 15 graduate program credits completed as a non-admitted student towards the MSE program upon formal admission (Please note that formal admission into the MSE program is decided by an admissions committee and not guaranteed by performance in courses completed as a non-admitted student).
- 4) **Academic Progress:** Students should regularly monitor their academic progress. Oregon Tech uses a web-based degree audit system, DegreeWorks, which can be accessed through Web-for-Student. Students should work with their advisor to ensure transfer courses or other courses requiring approval are adequately reflected in DegreeWorks.
- 5) **Graduation:** Students must submit an **Application for Degree** at least two terms prior to their anticipated degree completion date. Students completing Graduate Project or Graduate Thesis must complete their Project or Thesis and have their Final Approval Form signed and submitted to the Registrar's Office before they can graduate. For instructions on these steps, visit <https://www.oit.edu/registrar/graduate>.