Shiley-Marcos SCHOOL OF ENGINEERING
University of San Diego

Int Engr - Embedded Software Degree Checklist (2025/26 catalog)

Complete	Core Curriculum (33-39 Units)	Course that Satisfies Requirement	Units
	First Year Writing (CFYW)	FYW 150	3
	Mathematical Reasoning (CMRP)	MATH 150	
	Second Language Competency		3 to 9
	Lower-Division Theological and Religious Inquiry (FTRI)		3
	Upper-Division Theological and Religious Inquiry (FTRI)		3
	Philosophical Inquiry (FPHI)		3
	Ethical Inquiry (FETI)		3
	Scientific and Technological Inquiry (ESTI)	ENGR 101	
	Historical Inquiry (EHSI)		3
	Social and Behavioral Inquiry (ESBI)		3
	Literary Inquiry (ELTI)		3
	Artistic Inquiry (EARI)		3
	Diversity, Inclusion, Social Justice (FDD1)	ENGR 103	
	Diversity, Inclusion, Social Justice (FDD2 or FDG2)	GENG 350	
	Advanced Writing (CADW)	GENG 350	
	Oral Communication (CORL)		3
	Critical Thinking (CCTH)		
	Information Literacy (CILT)		
	Quantitative Reasoning (CQUR)	ISYE 330	
	First Year Integration (CINL)	LLC course	
	Advanced Integration (CINT)	GENG 492	
Complete	**Math/Science Courses (32 Units)**	**Prerequisites/(Corequisites)**	
	CHEM 151/151L - General Chemistry	(MATH 115 or MATH 150 or MATH 151)	4
	MATH 150 - Calculus I		4
	MATH 151 - Calculus II	MATH 150 (C- or better)	4
	MATH 310 - Applied Math for Science and Engineering I	MATH 151 (C- or better)	3
	MATH 262 - Discrete Math	MATH 151 (C- or better)	3
	ISYE 330 - Engineering Probability & Statistics	MATH 151 or MATH 262	3
	PHYS 270/270L - Mechanics & Lab	MATH 150 (C- or better)	4
	PHYS 271/271L - Electricity and Magnetism & Lab	PHYS 270/270L (C- or better), MATH 151	4
	Additional Math or Science (based on concentration)		3
Complete	**Engineering Core Courses (12.5 Units)**	**Prerequisites/(Corequisites)**	
	ENGR 101 - Introduction to Engineering	(MATH 150)	3
	ENGR 102 - Electromechanical System Design	ENGR 101, ENGR 121/COMP 110, (MATH 151)	3
	ENGR 103 - User-Centered Design	ENGR 101, (MATH 151)	3
	COMP 110 - Computational Problem Solving	MATH 115 credit or placement in MATH 130 or higher	3.5
Complete	**GENG Required Courses (35 Units)**	**Prerequisites/(Corequisites)**	
	MENG 210 - Statics	PHYS 270, MATH 150	3
	GENG 250 - Integrated Approach to Energy	(PHYS 271, PHYS 271L, ENGR 102, ENGR 103, MATH 310)	3
	GENG 288 - Integrated Approach to Electrical Engineering	PHYS 271, (MATH 310)	4
	GENG 311 - Engineering Materials Science	CHEM 151/151L, MATH 151, PHYS 271/271L	3
	GENG 350 - Engineering and Social Justice	ENGR 103, (GENG 250 or GENG 288 or MENG 311)	3
	GENG 360 - Experimental Engineering	ENGR 102, GENG 288 or ELEC 201, MENG 210, GENG 250 or MENG 260, COMP 110, MATH 310, (ISYE 330)	3
	GENG 380 - Sustainability and Engineering		3
	GENG 491 - Engineering Senior Design I	GENG 360, (GENG 350)	4
	GENG 492 - Engineering Senior Design II	GENG 491	3
	Engineering Elective (lower or upper division)	See Undergraduate Catalog for respective course prerequisites/corequisites	3
	Engineering Elective (upper division)	See Undergraduate Catalog for respective course prerequisites/corequisites	3
Complete	**Embedded Software Concentration (26.5 Units)**		
	COMP 120 - Programming Abstractions and Methodologies	COMP 110 (C- or better)	3.5
	COMP 280 - Introduction to Computer Systems	COMP 120 (C- or better)	3.5
	COMP 300 - Principles of Digital Hardware	COMP 280 (C- or better), MATH 262 (C- or better)	3.5
	COMP 310 - Operating Systems	COMP 280 (C- or better)	3.5
	COMP 365 - Principles of Information Security	COMP 280 (C- or better)	3
	COMP 375 - Networking	COMP 280 (C- or better)	3.5
	GENG 421 - Embedded System Performance	COMP 280 (C- or better)	3
	GENG 422 - Advanced Embedded Software Development	GENG 421 (C- or better)	3
Complete	**Additional Requirements**	**Notes for Additional Requirements**	
	Connect (Career Readiness Program)	Complete 12 points (orientation, networking, senior survey, and 9 flex points)	
	Free Electives	Complete additional units needed to meet 147 Unit requirement for degree	
		Total GENG Degree Units	**147**