University of San Diego
SHILEY-MARCOS
SCHOOL OF ENGINEERING

University of San Diego Shiley-Marcos School of Engineering

IntEngr - Embedded Software Concentration Degree Checklist (2023/24 catalog)

Complete	Core Curriculum	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)	PHIL 342	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)	COMM 203	3
	Quantitative Reasoning (CQUR)	ISYE 330	
	First Year Integration (CINL)	LLC course	
	Advanced Integration (CINT)	GENG 492	
Complete	**Math/Science Courses**	**Prerequisites/(Corequisites)**	
	CHEM 151/151L - General Chemistry		4
	Additional Math or Science (based on concentration)		3
	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	3
	PHYS 270/270L – Mechanics +lab	MATH 150	4
	PHYS 271/271L – Electricity & Magnetism +lab	PHYS 270 (C- or better), MATH 151	4
Complete	**Engineering Core Courses**	**Prerequisites/(Corequisites)**	**32**
	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**	**Prerequisites/(Corequisites)**	**12.5**
	GENG 250: Integrated Approach to Energy	(PHYS 271, PHYS 271L, ENGR 102, ENGR 103, MATH 310)	3
	GENG 311 - Engineering Materials Science	CHEM 151&L, MATH 151, PHYS 271&L (all with C- or better)	3
	GENG 288: Integrated Approach to Electrical Engineering	PHYS 271, MATH 310	4
	GENG 380 - Sustainability and Engineering		3
	MENG 210 - Statics	PHYS 270, MATH 150	3
	Engineering Elective (lower or upper division)		3
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	GENG 350 - Engineering and Social Justice	ENGR 103, (GENG 250 or GENG 288 or MENG 311 C- or better)	3
	GENG 360 - Experimental Engineering	ENGR 102, GENG 288 or ELEC 201, MENG 210, GENG 250 or MENG 260	3
	GENG 491 - Engineering Senior Design I	GENG 350&360	4
	GENG 492 - Engineering Senior Design II	GENG 491	3
Complete	**Embedded Software Concentration**		**35**
	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, MATH 160	3.5
	COMP 310 - Operating Systems	COMP 280	3.5
	COMP 365 - Principles of Information Security	COMP 280	3
	COMP 375 - Networking	COMP 280	3.5
	GENG 421 - Embedded System Performance	COMP 385	3
	GENG 422 - Advanced Embedded Software Development	GENG 421	3
			26.5
		Total GENG units	**147**