

Systems Science & Engineering Sample Curriculum

	WashU Course	Fall	Spring
Home Institution (3-4 years)			
Calculus II, III	Math 132, 233	3	3
Differential Equations	Math 217	3	
General Physics I, II	Physics 191, 192	3	3
General Physics Lab I, II	Physics 191L, 192L	1	1
General Chemistry I	Chem 111A	3	
General Chemistry Laboratory I	Chem 151	2	
Introduction to Computer Science	CSE 131		3
Outside concentration (in one science/math area)		6	6
English Composition	CWP 100		3
Humanities and social science electives		6	9
Additional home institution degree requirements		varies	varies
90 units or more of transferable college credit	Subtotal	90+ to transfer	
First Year of Dual Degree Curriculum at WashU			
Numbers in bold denote courses typically offered in both fall and spring semesters			
Introduction to Electrical and Systems Engineering	ESE 105	4	
Introduction to Electrical and Electronic Circuits	ESE 230	4	
Probability and Statistics for Engineering	ESE 326	3	
Optimization	ESE 4031 or 415	3	
Engineering Mathematics A	ESE 318		3
Engineering Mathematics B	ESE 319		3
Introduction to Engineering Design	ESE 205		3
Signals and Systems	ESE 351		3
Computer Science elective from the approved list	CSE 132 or CSE 247		3
	Subtotal	14	15
Second Year of Dual Degree Curriculum at WashU			
Control Systems	ESE 441	3	
Required Systems lab*	ESE 4480	3	
Technical Writing	ENGR 310	3	
Engineering Ethics and Sustainability	ENGR 4501	1	
SSE electives**	See approved list	6	6
Elective Systems lab	ESE 4481 or other		3
Systems Science & Engineering Capstone Design Project	ESE 499		3
Engineering Professional Practice*** or Free Elective	ENGR 4502, 4503		2
Free elective			1
	Subtotal	16	15
60 units or more must be taken at Washington Univ.	Total	60+ for WU degree	

*Either ESE 4480 or 4481 is required as a systems lab. ESE 441 is a co-requisite for 4480 and prerequisite for 4481, so 4480 is suggested in the third semester.

**In selecting elective courses, make sure to select enough courses with engineering topics units so that engineering topics units total at least 45.

***Engineering Professional Practice suggested if student did not complete a social science course at 300 level or higher at their home institution.

Master's degree candidates should consult with their faculty advisor regarding graduate courses taken third year.

Note some graduate courses may be necessary second year. 84 minimum WashU residency units are required for the Master's degree. Updated May 2022