

Name: \_\_\_\_\_

PSU ID: \_\_\_\_\_

**3-2 Program Courses for Engineering Majors\*****The Pennsylvania State University****3-2 Institution: Juniata College**

PSU Course	Credits	Course Title	PSU Majors	3-2 Course	Credits	Grade
BIOL 141, 142	3, 1	Physiology and Lab	BIO E, elective for E SC, I E, M E	No Equivalent	-----	
CAS 100	3	Effective Speech	ALL	CM 200W	3	
CHEM 110	3	Chemical Principles I	ALL	CH 114 or CH 105	4	
CHEM 111	1	Experimental Chemistry I	ALL except AERSP, M E	Part of CH 114 or CH 121	-----	
CHEM 112	3	Chemical Principles II	BIOE, CH E, elective for E SC, I E, M E, ALL EMS except MNG E	CH 115 or CH 230	4	
CHEM 113	1	Experimental Chemistry II	BIOE, CH E, MATSE	Part of CH 115	-----	
CHEM 210	3	Organic Chemistry I	BIOE, CH E, MATSE(PLMSE), ENENG	No Equivalent	-----	
CHEM 212, 213	3, 2	Organic Chemistry II and Lab	BIOE, CH E, MATSE(PLMSE)	No Equivalent	-----	
CMPEN 270	4	Introduction to Digital Systems & Lab	CMPEN, E E, I E	No Equivalent	-----	
CMPSC 121, 122	3, 3	Intermediate Programming	CMPEN	CS 240	3	
CMPSC 200/201	3	Computer Programming for Engineers	ALL except B E, CH E, CMPEN	CS 110	4	
E E 210	4	Circuits and Devices	BIOE(EE option), CMPEN, E E, E SC	No Equivalent	-----	
E MCH 211	3	Statics	ALL except CH E, CMPEN, MATSE (PLMSE), and ENENG	PC 320	3	
E MCH 212	3	Dynamics	ALL except CH E, CMPEN, E E, MATSE (PLMSE) and ENENG	PC 321	3	
E MCH 213	3	Strength of Materials	ALL except CH E, CMPEN, E E, ENVSE, MATSE (PLMSE) and ENENG	No Equivalent	-----	
ECON 002 or 004	3	Intro. Microecon. or Macroecon. Analysis and Policy (GS)	ALL	EB 105, 222, 223	3	
EDSGN 100	3	Introduction to Engineering Design	ALL except CMPEN, ENVSE, MATSE, PNG E and ENENG	No Equivalent	-----	
ENGL 015	3	Rhetoric and Composition	ALL	EN 110	5	
ENGL 202C	3	Effective Writing: Technical Writing		No Equivalent	-----	
GEOSC 001	3	Physical Geology	C E, PNG E, ENVSE, MNG E	GL 1200	3	

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The Pennsylvania State University

3-2 Institution: Juniata College

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MATH 140	4	Calculus and Analytic Geometry I	ALL	MA 130	4	
MATH 141	4	Calculus and Analytic Geometry II		MA 230	4	
MATH 220	2	Matrices	ALL except B E, CH E, PNG E, ENENG	MA 110 or 160	3	
MATH 230	4	Calculus and Vector Analysis	ALL except C E, ENVSE, MNG E	MA 235	4	
MATH 251	4	Ordinary and Partial Differential Equations	ALL	MA 335	4	
M E 201/300	3	Introduction to Thermal Science/ Engineering Thermodynamics I	ALL except CH E, CMPEN, E E, E SC, MNG E and ENENG	PC 350	3	
PHYS 211	4	General Physics (Mechanics)	ALL	PC 202, 206	4	
PHYS 212	4	General Physics (Electricity and Magnetism)		PC 203, 207	4	
PHYS 213	2	Fluids & Thermodynamics	AERSP, E E, E SC, PNG E, MNG E	PC 350	3	
PHYS 214	2	Waves & Quantum Physics	ALL except B E, C E, I E, ENVSE, PNG E, MNG E, and ENENG	PC 300 or 301	5 or 3	
STAT 401/ 418	3	Experimental Methods/ Probability	C E, CMPEN, E E	MA 220 or 320	3	
<b>General Education Electives</b>						
Arts Electives (GA)	6	e.g. Architecture, Art History, Integrative Arts, Landscape Architecture, Music, Theatre Arts	ALL	Juniata's Distribution requirements of Fine Arts, International Social Science, Humanities, and Natural Science and Juniata's requirement of a Cultural Analysis course, Interdisciplinary Colloquium, and intensive communications requirement suffice for this category	>21	
Health (GHA)	3	Health Education and Exercise and Sport Activities				
Humanities Electives (GH)	6	e.g. American Studies, Classics, History, Humanities, Multi-Ethnic Studies, Philosophy, Religious Studies				
Social & Behavioral Science Elective (GS)	3	e.g. Anthropology, Human Development, Political Science, Psychology, Sociology				PNGE, MNG E, and ENENG require an ethics elective

\* College of Engineering (EN) Majors:

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|-----------------------------|----------------------------|
| AERSP Aerospace Engineering | E E Electrical Engineering |
| B E Biological Engineering  | E SC Engineering Science   |
| BIOE Bioengineering         | I E Industrial Engineering |
| CH E Chemical Engineering   | M E Mechanical Engineering |
| C E Civil Engineering       | NUC E Nuclear Engineering  |
| CMPEN Computer Engineering  |                            |

\* College of Earth and Mineral Sciences (EMS) Majors:

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|---|
| ENENG Energy Engineering                    |
| ENVSE Environmental Systems Engineering     |
| MATSE Material Science and Engineering      |
| (PLMSE) Polymer Science and Engineering     |
| Option of MATSE                             |
| MNG E Mining Engineering                    |
| PNG E Petroleum and Natural Gas Engineering |