Millersville University

*Effective Spring 2017 (rev FA21\_AENG)*

Department of Applied Engineering, Safety & Technology

Applied Engineering & Technology (AETE) – Associate of Technology – 60 credits minimum

***Course Titles***

*(3-credit courses)*

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| --- | --- |
| AENG 110 Communication & Information Systems | AENG 357 Packaging & Specialty Printing *(prereq TIEC 241 & 251; or ART 348)* |
| AENG 120 Energy & Power Systems | AENG 364 Digital Electronics *(prereq AENG 262)* |
| AENG 130 Production Materials & Processes | AENG 375 Polymer Ceramic Technology *(prereq AENG 271)* |
| AENG 241 Drafting Communications | AENG 376 Wood Technology *(prereq AENG 271)* |
| AENG 243 Technical Sketching, Design & Rendering | AENG 382 Automated Manufacturing *(prereq AENG 130; and 241; and 271 or 281 or 342 )* |
| AENG 251 Print Media Systems *(prereq AENG 110 or ART 244 or COMM 201)* | AENG 392 Intro to Industrial Training *(prereq ENGL 110)* |
| AENG 252 Web Publishing Systems *(prereq AENG 110)* | AENG 425 Industrial Robotic Systems *(prereq AENG 325)* [R&D] |
| AENG 261 Electronic Systems | AENG 427 Prog Logic Controllers *(prereq AENG 425; & MATH 151 or 161)* [R&D] |
| AENG 262 Semiconductor Electronics *(prereq AENG 261)* | AENG 433 Construction Project Management *(prereq AENG 332)* |
| AENG 271 Processing Nonmetallic Matls *(prereq AENG 130)* | AENG 446 Computer-Aided Drafting & Design *(prereq AENG 342)* |
| AENG 281 Metallic Materials & Production Methods *(prepreq AENG 130)* | AENG 448 Machine Tool Design *(prereq AENG 342)* |
| AENG 300 Co-op | AENG 455 Research & Development in Graphic Comm. *(prereq AENG 355)* [R&D] |
| AENG 325 Power Conversion & Control *(prereq AENG 120 or 261)* | AENG 457 Print Prod Mgmt & Cost Estimating *(prereq AENG 355 & MATH 130* |
| AENG 326 Fluid Power *(prereq AENG 120 or 325)* [R&D] | AENG 466 Wireless Communication Systems *(prereq AENG 262)* [R&D] |
| AENG 331 Construction Technology I *(prereq AENG 271)* | AENG 467 Mobile Robotic Systems *(prereq AENG 262)* [R&D] |
| AENG 332 Construction Technology II *(prereq AENG 271)* |  |
| AENG 342 Computer-Aided Engineering Drawing *(prereq AENG 241)* | OSEH 120 Safety, Health & Environmental Issues |
| AENG 344 Product Design *(prereq AENG 241*) [R&D] | OSEH 220 Legal Aspects of Safety |
| AENG 345 Statics & Strength of Matls *(prereq AENG 241; and MATH 151, 160 or 161)* | OSEH 221 Fire Prevention, Protection & Control |
| AENG 346 Architectural Drawing & Design *(prereq AENG 241)* | OSEH 320 Safety Engineering Principles *(prereq OSEH 120)* |
| AENG 347 Engineering Visualization *(prereq AENG 241)* | OSEH 321 Ind Hygiene—Chem & Bio Hazards *(prereq OSEH 120; MATH 151; CHEM 104)* |
| AENG 348 Green Buildings & Sustainable Systems *(prereq AENG 241 & MATH 130)* | OSEH 323 Human Factors *(prereq OSEH 120)* |
| AENG 351 Digital Imaging | OSEH 333 Intro to System Safety *(prereq OSEH 320 & MATH 130)* |
| AENG 355 Contemporary Printing *(prereq AENG 251)* | OSEH 410 Safety & Hygiene Mgmt *(prereq OSEH 220)* |
| AENG 356 Desktop Publishing *(prereq ENGL 110)* [R&D] | OSEH 422 Environ & Ind Hygiene II [4 cr] *(prereq OSEH 321 & PHYS 132)* |

**Department Requirements** (30 credits) **- *Complete one of the seven Technical Concentrations shown***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Advanced Manufacturing | Computer Aided Drafting & Design | Construction Technology | Control Systems Technology | Graphic Communications | Nanofabrication Manufacturing | Occupational Safety & Environ. Health |
| AENG 130 AENG 241 AENG 261AENG 271 AENG 281 AENG 325 AENG 342OSEH 120*Select one from:*• AENG 375• AENG 376*Select one from:* • AENG 300• AENG 382• AENG 425• AENG 448  | AENG 130 AENG 241 AENG 342AENG 344AENG 346OSEH 120*Select four from:*• AENG 110• AENG 120• AENG 243• AENG 300• AENG 345• AENG 347• AENG 446• AENG 448 | AENG 120 AENG 130 AENG 241 AENG 271 AENG 331 AENG 332AENG 346AENG 348OSEH 120*Select one from:*• AENG 300• AENG 326• AENG 347 • AENG 376 | AENG 130 AENG 241 AENG 261 AENG 262 AENG 325 AENG 326 AENG 342OSEH 120*Select two from:*• AENG 300• AENG 364• AENG 425• AENG 427• AENG 466• AENG 467 | AENG 110 AENG 251 AENG 252 AENG 351AENG 355AENG 356OSEH 120*Select three from:*• AENG 241• AENG 243• AENG 300• AENG 357• AENG 455 | AENG 110 AENG 120 AENG 130 AENG 261OSEH 120*To be completed during 1 semester at Penn State, State College campus:* *NFMT 311, 312, 313, 314, 315, 316* | AENG 120AENG 130OSEH 120OSEH 220OSEH 221OSEH 320OSEH 321OSEH 323CHEM 104*Select one from:*• OSEH 333• OSEH 410• OSEH 422• AENG 300• AENG 392 |

**Required Related Courses** (7-8 credits)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Advanced Manufacturing | Computer Aided Drafting & Design | Construction Technology | Control Systems Technology | Graphic Communications | Nanofabrication Manufacturing | Occupational Safety & Environ. Health |
| *Select one from:* PHYS 103 PHYS 104 PHYS 131*Select one from:* MATH 130 MATH 151 MATH 160 MATH 161 | *Select one from:* PHYS 103 PHYS 104 PHYS 131*Select one from:* MATH 130 MATH 151 MATH 160 MATH 161 | *Select one from:* PHYS 103 PHYS 104 PHYS 131*Select one from:* MATH 130 MATH 151 MATH 160 MATH 161 | *Select one from:* CHEM 101  CHEM 103  PHYS 103 PHYS 104*Select one from:* MATH 151 MATH 160 MATH 161 | *Select one from:* CHEM 101  CHEM 103  PHYS 103 PHYS 104 PHYS 131*Select one from:* MATH 130 MATH 151 MATH 160 MATH 161 | CHEM 103*Select one from:* PHYS 103 PHYS 104 PHYS 131*Select one from:* MATH 130 MATH 151 MATH 160  | *Select one from:* CHEM 103  CHEM 111*Select one from:* PHYS 103 PHYS 104 PHYS 131*Select one from:* MATH 130 MATH 151 MATH 160 |

Required Related Course Titles:

 MATH 130 Elements of Statistics, 3 cr CHEM 101 Chem! Better Things, 3 cr PHYS 103 Elements of Physics, 4 cr

 MATH 151 Calculus for Mgmt, Life, 4 cr CHEM 103 General, Organic, Biochem I, 3 cr PHYS 104 Applied Physics, 4 cr

 MATH 160 Precalculus, 4 cr CHEM 104 General, Organic, Biochem II, 3 cr PHYS 131 Physics I, 4 cr

 MATH 161 Calculus I, 4 cr CHEM 205 Color & Form, 4 cr

**General Education Requirements** (27 credits)

• G1: Humanities & Fine Arts, (2 courses, 6 credits)

• G2: Science & Math [*these credits will be fulfilled by Required Related Science & Math courses]*

• G3: Social Sciences, (2 courses, 6 credits)

• COMM 100 Fundamentals of Speech, 3 cr

• ENGL 110 English Composition, 3 cr

• Advanced Writing, 3 cr: Select from ENGL 312 Technical Writing or ENGL 316 Business Writing or ENGL 318 Web Writing or ENGL 319 Science Writing

**Additional free elective** (1 to 3 credits needed to meet the 60-credit minimum to graduate; depends on value of science & math courses selected)