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)*

|  |  |
| --- | --- |
| 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 261  AENG 271  AENG 281  AENG 325  AENG 342  OSEH 120  *Select one from:*  • AENG 375  • AENG 376  *Select one from:*  • AENG 300  • AENG 382  • AENG 425  • AENG 448 | AENG 130  AENG 241  AENG 342  AENG 344  AENG 346  OSEH 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 332  AENG 346  AENG 348  OSEH 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 342  OSEH 120  *Select two from:*  • AENG 300  • AENG 364  • AENG 425  • AENG 427  • AENG 466  • AENG 467 | AENG 110  AENG 251  AENG 252  AENG 351  AENG 355  AENG 356  OSEH 120  *Select three from:*  • AENG 241  • AENG 243  • AENG 300  • AENG 357  • AENG 455 | AENG 110  AENG 120  AENG 130  AENG 261  OSEH 120  *To be completed during  1 semester at Penn State, State College campus:*  *NFMT 311, 312,  313, 314, 315, 316* | AENG 120  AENG 130  OSEH 120  OSEH 220  OSEH 221  OSEH 320  OSEH 321  OSEH 323  CHEM 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)