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| *Millersville University**Dept. of Applied Engineering, Safety & Technology**120 credits minimum – Updated Spring 2020* *(rev FA21\_AENG)* | ***Bachelor of Science (B.S.)******Applied Engineering & Technology Management (AETM)*****Concentration: Graphic Communication Technology** |

**DEPARTMENTAL REQUIREMENTS** (60 credits)

Technical Option(36 credits)

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| Grade | Course No. | Title | Cr |
|  | AENG 110 | Communication & Information Systems | 3 |
|  | AENG 241 | Drafting Communications | 3 |
|  | AENG 251 | Print Media Systems *(prereq AENG 110 or ART 244 or COMM 221)* | 3 |
|  | AENG 252 | Web Publishing Systems *(prereq AENG 110)* | 3 |
|  | AENG 344 | Product Design *(prereq AENG 241)* | 3 |
|  | AENG 351 | Digital Imaging  | 3 |
|  | AENG 355 | Contemporary Printing *(prereq AENG 251)* | 3 |
|  | AENG 356 | Desktop Publishing *(prereq ENGL 110*) *[Writing course]* | 3 |
|  | AENG 357 | Packaging & Specialty Printing *(prereq AENG 241 & 251; or ART 348)* | 3 |
|  | AENG 455 | Research & Development in Graphic Communication *(prereq AENG 355)* | 3 |
|  | AENG 457 | Print Production Mgmt & Cost Estimating *(prereq AENG 355 & MATH 130)* | 3 |
|  | \_\_\_\_\_\_\_\_\_\_ | Technical Elective: ***Select ONE from the following list:***  AENG 120, 130, 243, 342, 347, 498, 515; ART 133, 142, 240, 306; BUAD 231; COMM 206, 220 | 3 |

Technology Management Core (15 credits)

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| Grade | Course No. | Title | Cr |
|  | OSEH 120 | Safety, Health & Environmental Issues | 3 |
|  | AENG 492 | Technical Entrepreneurship *(prereq AENG 130 or AENG 241; and BUAD 251;  and junior or senior class status)* | 3 |
|  | AENG 494 | Total Quality Management *(prereq MATH 130; and senior class status)* | 3 |
|  | BUAD 251 | Principles of Management [W] *(prereq C- or higher in ECON 101 & ECON 102; and ENGL 110); must earn a C- or higher as a prereq for MGMT 452* | 3 |
|  | MGMT 452 | Prod & Oper Mgmt *(prereq: C- or higher in BUAD 251; and MATH 130; and  MATH 151, 160 or 161)* | 3 |

Electives Courses in Technology Management (9 credits)

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| Grade | Course No. | Title | Cr |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. 2. 3.  | *Select* ***THREE*** *courses from the following list*:• AENG 300 Internship ***(maximum of 6 credits internship***• AENG 400 Internship ***may be counted for the degree)***• AENG 392 Intro to Industrial Training [W] *(prereq ENGL 110)*• OSEH 221 Industrial Fire Prevention• OSEH 320 Safety Engineering Principles *(prereq OSEH 120)*• OSEH 323 Human Factors in OSEH *(prereq OSEH 120)*• OSEH 333 Intro to System Safety *(prereq OSEH 320 and MATH 130)*• BUAD 161 Intro to Financial Accounting *(prereq MATH 101 or 151)*• BUAD 352 Human Resource Mgmt *(prereq C- or higher in BUAD 251)*• MGMT 353 Labor-Mgmt Relations *(prereq C- or higher in BUAD 251)*• MGMT 357 International Mgmt *(prereq C- or higher in BUAD 251)*• PSYC 329 Industrial/Org Psyc *(prereq ENGL 110, PSYC 100)* [W]• SOCY 318 Sociology of Complex Organizations | 3333333333333 |

**REQUIRED RELATED COURSES** (19-21 credits)

Required Related – Math *(Fulfills the Gen Ed Math Requirement plus one course in G2)*

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| Grade | Course No. | Title | Cr |
|  | MATH 130 | Elements of Statistics *(prereq: See Web Schedule or Undergrad Catalog)* | 3 |
|  | MATH  | ***Select ONE from***:• MATH 151 Calc for Mgmt, Life *(prereq C- or higher in MATH 101 or MPT 151)*• MATH 160 Precalculus *(prereq C- or higher in MATH 101 or MPT 160)*• MATH 161 Calculus I *(prereq C- or higher in MATH 160 or MPT 161)* | 444 |

Required Related – Science *(Fulfills two G2 courses)*

*Must complete one science course with a lab* *component*

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| Grade | Course No. | Title | Cr |
| \_\_\_\_\_\_\_\_\_\_ | 1. 2.  | ***Select TWO from***: • CHEM 101 Chem! Better Things• CHEM 103 General, Organic, Biochem I• CHEM 104 General, Organic, Biochem II• PHYS 103 Elements of Physics *Can receive credit for either*• PHYS 104 Applied Physics *PHYS 103 or 104, but not for both*• PHYS 131 Physics I• PHYS 132 Physics II | 3334444 |

Required Related – Economics *(Fulfills two G3 courses)*

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| Grade | Course No. | Title | Cr |
|  | ECON 101 | Macroeconomics | 3 |
|  | ECON 102 | Microeconomics | 3 |

**GENERAL EDUCATION REQUIREMENTS** (48 credits)

*Note: 18 credits of Gen Ed are fulfilled by Required Related Courses*

G1 – HUMANITIES & FINE ARTS *[ART, COMM/THEATRE, ENGL, FOREIGN LANG/HUMN, MUSI, PHIL]* (9 credits)

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| Grade | Course No. | Title*Maximum of two courses from the same dept; all three courses could be from different depts* | Cr |
|  |  |  | 3 |
|  |  |  | 3 |
|  |  |  | 3 |

G2 – SCIENCE & MATH — *These credits are fulfilled by Required Related Math & Science*  (9 credits)

G3 – SOCIAL SCIENCES *[AFAM, ANTH, BUAD, GEOG, GOVT, HIST, INTL, PSYC, SOCY, SOWK/GERT, WSTU]* (9 credits)

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| Grade | Course No. | Title | Cr |
| **x** | **x** | *fulfilled by ECON 101* | 3 |
| **x** | **x** | *fulfilled by ECON 102* | 3 |
| **x** | **x** | *fulfilled by BUAD 251* | 3 |

Additional General Education Requirements (18 credits)

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| Grade | Course No. | Title | Cr |
|  | COMM 100 | Fundamentals of Speech *(minimum of “C-“ required)* | 3 |
|  | ENGL 110 | English Composition *(minimum of “C-“ required)* | 3 |
| **x** | **x** | Math course *(fulfilled by Required Related Math)* | 3 |
|  | WELL 175 | Wellness | 3 |
|  |  | **Perspectives** [P] *(NOTE: AENG 301, 302, or 303 [D] recommended)* | 3 |
|  |  | **UNIV 103** or **Open Elective** *(Open Elective cannot be a course from major dept)* | 3 |

Advanced Writing (AW) Course (3 credits)

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| Grade | Course No. | Title | Cr |
|  | ENGL \_\_\_\_\_ | **Select *ONE* from:**• ENGL 312 Technical Writing • ENGL 318 Web Writing• ENGL 316 Business Writing • ENGL 319 Science Writing | 3 |

GENERAL EDUCATION REQUIREMENTS CHECKLIST:

Three G1, G2, or G3 courses at **200-LEVEL OR HIGHER**: (1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (3) BUAD 251 [ ]  completed

Three **WRITING** [W] courses *(does not include ENGL 312/316):* (1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2) AENG 356 [ ]  completed (3) BUAD 251 [ ]  completed

One **CULTURAL DIVERSITY** [D] course: *NOTE: AENG 303 is a [D]* (1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_

FREE ELECTIVES (9-11 credits) – needed to bring overall total to 120 credits; depends on credit value of science & math courses selected

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 cr cr Updated Spring 2020