

## Integrative Studies: ENGINEERING Field

The following are advanced course options for Integrative Studies majors. You are always responsible to meet a course prerequisite. **These may not be your only options.** Please check course offerings every semester for additional courses.

### Biomedical Engineering

| Course #  | Course Name                         | Pre-Requisites – Grade of C or better |
|-----------|-------------------------------------|---------------------------------------|
| BMEN 1300 | Discover Biomedical Engineering     | None                                  |
| BMEN 1400 | Software for Biomedical Engineering | MATH 1650                             |

### Construction Engineering Technology/Construction Management

| Course #  | Course Name                                                                   | Pre-Requisites – Grade of C or better |
|-----------|-------------------------------------------------------------------------------|---------------------------------------|
| CNET 1160 | Construction Methods and Materials                                            | None                                  |
| CNET 2180 | Building Construction Techniques                                              | CNET 1160                             |
| CNET 2200 | Surveying for Construction                                                    | None                                  |
| CNET 2300 | Construction Graphics and Modeling                                            | None                                  |
| CNET 3150 | Construction Contract Documents                                               | CNET 2180                             |
| CNET 3160 | Construction Cost Estimating                                                  | CNET 2180                             |
| CNET 3190 | Construction Scheduling                                                       | CNET 2180                             |
| CNET 3410 | Occupational Safety and Liability                                             | None                                  |
| CNET 4170 | Construction Management                                                       | CNET 3160                             |
| CNET 4630 | Construction Management for Mechanical, Electrical and Plumbing (MEP) Systems | CNET 2180                             |

### Mechanical Engineering/Manufacturing

| Course #  | Course Name                                        | Pre-Requisites – Grade of C or better |
|-----------|----------------------------------------------------|---------------------------------------|
| ENGR 1030 | Technological Systems                              | None; Core: Component Area Option A   |
| ENGR 1304 | Engineering Graphics                               | None                                  |
| ENGR 2304 | Statics and Strength of Materials                  | MATH 1190 or MATH 1710, and PHYS 1410 |
| ENGR 3000 | Foundations of Manufacturing                       | None                                  |
| MEEN 1000 | Discover Mechanical & Energy Engineering (2 hours) | MATH 1650                             |

### Materials Science & Engineering

| Course #  | Course Name                                                    | Pre-Requisites – Grade of C or better |
|-----------|----------------------------------------------------------------|---------------------------------------|
| MTSE 1100 | Discover How and What Materials Matter                         | None; Core: Component Area Option A   |
| MTSE 3000 | Fundamentals of Materials Science I                            | CHEM 1410/1430                        |
| MTSE 3001 | Fundamentals of Materials Science II                           | MTSE 3000 or be concurrently enrolled |
| MTSE 3003 | Fundamentals of Materials Science and Engineering Lab (1 hour) | Currently enrolled in MTSE 3000       |
| MTSE 3010 | Bonding and Structure                                          | Passed MTSE 3000                      |
| MTSE 3030 | Thermodynamics and Phase Diagrams                              | MTSE 3000                             |
| MTSE 3050 | Mechanical Properties of Materials                             | ENGR 3000                             |
| MTSE 3090 | Materials Science and Engineering Lab (1 hour)                 | MTSE 3000                             |
| MTSE 3100 | Material Science and Engineering lab II (1 hour)               | MTSE 3090                             |

## Computer Science/Information Technology

| Course #  | Course Name Computer Sciences                    | Pre-Requisites – Grade of C or better                         |
|-----------|--------------------------------------------------|---------------------------------------------------------------|
| CSCE 1010 | Discovering Computer Science                     | None                                                          |
| CSCE 1030 | Computer Science I (C++)                         | CSCE 1010 and MATH 1100 or 1650 or 1710                       |
| CSCE 1035 | Computer Programming I (Python)                  | CSCE 1010 and MATH 1100 or 1650 or 1710                       |
| CSCE 1040 | Computer Science II (Advanced C++)               | CSCE 1030 and MATH 1100 or 1650 or 1710                       |
| CSCE 1045 | Computer Programming II (Advanced Python)        | CSCE 1015 and 1035 and MATH 1650 or be concurrently enrolled  |
| CSCE 2100 | Foundations of Computing                         | CSCE 1040 or 1045, plus MATH 1710 or be concurrently enrolled |
| CSCE 2110 | Foundations of Data Structures                   | CSCE 1040 or 1045                                             |
| CSCE 2210 | Introduction to Visual Scripting for Games       | CSCE 1010                                                     |
| CSCE 3055 | IT Project Management                            | CSCE 2100                                                     |
| CSCE 3201 | Applied Artificial Intelligence                  | MATH 1650                                                     |
| CSCE 3214 | Software Development for Artificial Intelligence | MATH 1650                                                     |
| CSCE 3220 | Human Computer Interfaces                        | CSCE 2110 and either CSCE 2100 or MATH 2000                   |
| CSCE 3420 | Internet Programming                             | CSCE 2110 and either CSCE 2100 or MATH 2000                   |
| CSCE 3550 | Foundations of Cybersecurity                     | CSCE 2110 or be concurrently enrolled                         |
| CSCE 3600 | Principles of Systems Programming                | CSCE 2100 and CSCE 2110                                       |
| CSCE 3615 | Enterprise Systems Architecture and Design       | CSCE 2100                                                     |
| CSCE 4127 | Digital Logic and Computer Organization          | CSCE 2100 – new course – not offered yet                      |
| CSCE 4201 | Introduction to Artificial Intelligence          | CSCE 2110                                                     |