



Catalog Year 2023-2024

AAS, Industrial Cybersecurity
Engineering Technology

(For internal use only)

No change

UCC proposal

A Major Academic Plan (MAP) is one way to complete a degree in a set number of semesters. The *example* below is only one strategy. Actual plans for individual students will vary based on advisor recommendations and academic needs. Official Program Requirements including Major, General Education, Electives, and university requirements (see pg.2) are based on Catalog Year.

| Course Subject and Title | Cr. | Min. Grade | *GE, UU or UM | **Sem. Offered | Prerequisite | Co-Requisite |
|--|-------|------------|---------------|----------------|---|--|
| Semester One | | | | | | |
| ESET 1162: Industrial Safety and Regulation | 2 | C- | | F, S, D | | |
| ESET 1121: Basic Electricity and Electronics | 4 | C- | | S, F | Minimum score of 20 on ALEKS or equivalent | ESET 1121L |
| ESET 1121L: Basic Electricity and Electronics Lab | 3 | C- | | S, F | | ESET 1121 |
| ESET 1140: Applied Technical Intermediate Algebra | 5 | C- | | F, S, D | | |
| ESET 1181: Introduction to Cyber-Physical Systems | 3 | C- | | F, D | | |
| ESET 1182: Information Technology Fundamentals | 3 | C- | | F, D | | |
| Total | 20 | | | | | |
| Semester Two | | | | | | |
| GE Objective 3: MGT 2216 (Recommended), OR MATH 1143, OR 1147, OR 1153, OR 1160, OR 1170 | 3-5 | C- | GE | | | |
| ESET 1120: Introduction to Energy Systems (Recommended) | 2 | C- | | F, S, D | | ESET 1120L |
| ESET 1120L: Introduction to Energy Systems Lab (Recommended) | 1 | C- | | F, S, D | | ESET 1120 |
| ESET 1122: Electrical Systems and Motor Control (Recommended) | 3 | C- | | F, S, D | ESET 1121 and ESET 1121L; or instructor permission | ESET 1122L |
| ESET 1122L: Electrical Systems and Motor Control Laboratory (Recommended) | 1 | C- | | F, S, D | ESET 1121 and ESET 1121L; or instructor permission | ESET 1122 |
| GE Objective 5: PHYS 1101/L (Recommended), OR PHYS 1100, OR PHYS 1111 AND 1113, OR PHYS 1112 AND 1114, OR CHEM 1100, OR CHEM 1111/L, OR CHEM 1112/L | 4-5 | C- | GE | | | |
| Total | 14-17 | | | | | |
| Semester Three | | | | | | |
| GE Objective 1: ENGL 1101, Writing & Rhetoric I OR ENGL 1102: Writing & Rhetoric II | 3 | C- | GE | F, S, Su | | |
| ESET 2205: Fundamentals of Control Logic (Recommended) | 3 | C- | | F, S, D | Permission of instructor | |
| ESET 2242: Practical Process Measurements and Control (Recommended) | 2 | C- | | F, D | ESET 1122 or instructor permission | |
| ESET 2282: Introduction to Networking | 3 | C- | | F | | |
| CYBR 3383: Security Design for Cyber-Physical Systems | 3 | C- | | F, D | Pre- or Co-Req: ESET 1181, 2282, 2223, 2227, or instructor approval | Pre- or Co-Req: ESET 1181, 2282, 2223, 2227, or instructor approval |
| CYBR 3384: Risk Management for Cyber-Physical Systems | 3 | C- | | F, D | Pre- or Co-Req: ESET 1181, 2282, 2223, 2227, CYBR 3383 or instructor approval | Pre- or Co-Req: ESET 1181, 2282, 2223, 2227, CYBR 3383, or instructor approval |
| Total | 17 | | | | | |
| Semester Four | | | | | | |
| GE Objective 2: COMM 1101 Fundamentals of Oral Communication | 3 | C- | GE | F, S | | |
| GE Objective 6: ECON 2201 (Recommended) | 3 | C- | GE | F, S, Su | | |
| CYBR 4481: Defending Critical Infrastructure & Cyber Physical Systems | 3 | C- | | S, D | ESET 2282, CYBR 3383, 3384, or instructor approval | |
| CYBR 4486: Network Security for Industrial Environments | 3 | C- | | S, D | ESET 2282, CYBR 3383, or instructor approval | |
| CYBR 4487: Professional Development and Certification | 3 | C- | | S, D | CYBR 3383, 3384 | CYBR 4486, 4481 |
| INFO 4411: Intermediate Information Assurance | 3 | C- | | D | INFO 1150 OR CS 1337 OR INFO 3310 OR instructor permission | |
| Total | 18 | | | | | |
| *GE=General Education Objective, UU=Upper Division University, UM= Upper Division Major | | | | | | |
| **See Course Schedule section of Course Policies page in the e-catalog (or input F, S, Su, etc.) | | | | | | |

| 2023-2024 Major Requirements | CR | GENERAL EDUCATION OBJECTIVES Satisfy Objectives 1,2,3,4,5,6 (7 or 8) and 9 | | 36 cr. min |
|---|-----------|--|-------------------|-----------------------|
| MAJOR REQUIREMENTS | 53 | 1. Written English (6 cr. min) | ENGL 1101 OR 1102 | 3 |
| ESET 1121: Basic Electricity and Electronics | 4 | | | |
| ESET 1121L: Basic Electricity and Electronics Lab | 3 | 2. Spoken English (3 cr. min) | COMM 1101 | 3 |
| ESET 1140: Applied Technical Intermediate Algebra | 5 | 3. Mathematics (3 cr. min) | MGT 2216 (Rec) | 3-5 |
| ESET 1162: Industrial Safety and Regulations | 2 | 4. Humanities, Fine Arts, Foreign Lang. (2 courses; 2 categories; 6 cr. min) | | |
| ESET 1181: Introduction to Cyber-Physical Systems | 3 | | | |
| ESET 1182: Information Technology Fundamentals | 3 | | | |
| ESET 2282: Introduction to Networking | 3 | 5. Natural Sciences (2 lectures-different course prefixes, 1 lab; 7 cr. min) | | |
| CYBR 3383: Security Design for Cyber-Physical Systems | 3 | PHYS 1101/L (Recommended); OR PHYS 1111 AND PHYS 1113; | | 4-5 |
| CYBR 3384: Risk Management for Cyber-Physical Systems | 3 | OR PHYS 1112 AND PHYS 1114; OR CHEM 1100; OR CHEM 1111/L; OR CHEM 1112/L | | |
| CYBR 4481: Defending Critical Infrastructure and Cyber Physical Systems | 3 | 6. Behavioral and Social Science (2 courses-different prefixes; 6 cr. min) | | |
| CYBR 4486: Network Security for Industrial Environments | 3 | ECON 2201 (Recommended) | | 3 |
| CYBR 4487: Professional Development and Certification | 3 | | | |
| INFO 4411: Intermediate Information Assurance | 3 | One Course from EITHER Objective 7 OR 8 (1 course; 3 cr. min) | | |
| | | 7. Critical Thinking | | |
| Choose a minimum of 12 credits from the following: | 12 | 8. Information Literacy | | |
| ESET 1120: Introduction to Energy Systems | 2 | 9. Cultural Diversity (1 course; 3 cr. min) | | |
| ESET 1120L: Introduction to Energy Systems Lab | 1 | | | |
| ESET 1122: Electrical Systems and Motor Control Theory | 3 | General Education Elective to reach 36 cr. min. (if necessary) | | |
| ESET 1122L: Electrical Systems and Motor Control Theory Lab | 1 | | | |
| ESET 2205: Fundamentals of Control Logic | 3 | | | Total GE 16-19 |
| ESET 2220: Thermal Cycles and Heat Transfer | 2 | Undergraduate Catalog and GE Objectives by Catalog Year | | |
| ESET 2221: Nuclear Steam Supply Systems | 2 | | | |
| ESET 2222: Process Control Theory | 3 | | | |
| ESET 2226: Process Control Devices Lab | 1 | | | |
| ESET 2242: Practical Process Measurements and Control | 2 | | | |
| ESET 2251: Reactor Theory Safety and Design | 4 | MAP Credit Summary | | CR |
| ESET 2292: Electrical Engineering Technology I | 8 | Major | | 53 |
| ESET 2292L: Electrical Engineering Technology I Lab | 5 | General Education | | 16-19 |
| INST 2281: Electrical Automation Theory | 8 | Upper Division Free Electives to reach 36 credits | | 0 |
| INST 2282: Electrical Automation Lab | 5 | Free Electives to reach 120 credits | | 0 |
| | | TOTAL | | 69-72 |
| | | | | |
| | | | | |
| | | Graduation Requirement Minimum Credit Checklist | | Confirmed |
| | | Minimum 36 cr. General Education Objectives (15 cr. AAS) | | X |
| | | Minimum 15 cr. Upper Division in Major (0 cr. Associate) | | |
| | | Minimum 36 cr. Upper Division Overall (0 cr. Associate) | | |
| | | Minimum of 120 cr. Total (60 cr. Associate) | | X |
| | | | | |
| Advising Notes | | MAP Completion Status (for internal use only) | | |
| | | | Date | |
| | | | | |
| | | OAA or COT: | PJ 6/30/23 | |
| | | | | |
| | | Complete College American Momentum Year | | |
| | | Math and English course in first year-Specific GE MATH course identified | | |
| | | 9 credits in the Major area in first year | | |
| | | 15 credits each semester (or 30 in academic year) | | |
| | | Milestone courses | | |