**Purdue Northwest Curriculum Document Coversheet**

|  |  |  |  |
| --- | --- | --- | --- |
| **Document No:**(According to [Instruction](http://faculty.pnw.edu/blog/curriculum-document-approval-procedures/)s[[1]](#footnote-1)) | COT18-38 REV PROG EET | **Approval by Faculty Senate:** (Leave Blank) | 5/3/19 |
| **Proposed Effective Date**  | Fall 2019 | **Date Reviewed by Senate Curriculum****Committee:** (Leave blank) | 4/12/19 |
| **Submitting Department:**(Name of both Dept & College/School ) | Engineering TechnologyCollege of Technology | **Name(s) of Library Staff Consulted:** (NA if not required) |  |
| **Date Reviewed by Department**  | 3/22/2019 |  |  |
| **Submission Date:**(Date sent to College/School Curr Comm after Dept Review) | 3/22/2019 | **Will New Library****Resources Used?** | [ ]  **Yes** [x] **No** Double-click to check Yes / No. |
| **Date Reviewed by College/School Curriculum Committee**  | 3/22/2019 | **Form 40 Needed?**(Double-click one box.)Registrar will complete Form 40 **after** Senate approval of document. | [x]  **Yes** New courses or any course change, check **YES**[ ]  **No** For **all other** curriculum matters, check **NO**. |
| **Contact Person(s):**(Name & Title) | Omer FarookAssociate Professor of EET |  |  |

Unless marked “Leave blank” all parts of this form must be filled in **before** sending to Secretary of the Faculty Senate.

|  |
| --- |
| **Task (check all that apply and fill out sections appropriate for each change).** [x]  Program/Concentration Change or New Program/Concentration Proposal: Complete Section I, III, & IV[ ] Minor Change or New Minor Proposal: Complete Section I (delete sections III & IV)[ ]  Certificate Change or New Certificate Proposal: Complete Section I (delete sections III & IV)[ ]  Course Change or New Course Proposal: Complete Section II (delete sections III & IV) |
| **Program name**. Electrical Engineering Technology |
| **Degree name(s).** (If applicable.) Electrical Engineering Technology, BS |

## Section I: This section is for changes in programs, minors and certificates

|  |
| --- |
| **List the major changes in each program of study, minor or certificate.** Declare 5 Professional Selective courses with a total of 15 credit hours, for the ECET students to pursue Minor of their choosing in a number of other field of studies. Reflect the redistribution of courses on the Program of Study is attached. |
| **Impact on Students.** (State “N/A” if proposal will not greatly affect students.)Provide students the choice of pursuing minors along with ECET Major, thereby enhance their position in the market place. |
| **Impact on University Resources.** (State “N/A” if proposal will not require new resources, faculty or funds.)None |
| **Impact on other Academic Units.** (State “N/A” if proposal will not affect other units.)(Include name of person in affected area discussed with)None |

## Section III: PLAN OF STUDY REVISION

* 120 Credit Hours
* Minimum GPA of 2.0 required for graduation

**PNW General Education Core (31 Credits Minimum)**

* **English Composition (6 Credits):**[ENGL 10400 - English Composition I](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431#tt6663) and [ENGL 22000 - Technical Report Writing](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431#tt9839)
* **Speech Communication (3 Credits):**[COM 11400 - Fundamentals of Speech Communication](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431#tt5798)
* **Quantitative Reasoning (3 Credits):** [MA 14700 - Algebra And Trigonometry For Technology](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431#tt8686) or [MA 15300 - College Algebra](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431#tt2979)
* **Natural Sciences (4 Credits):**[PHYS 22000 - General Physics](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431#tt3166)
* **Technology (3 Credits):**[ECET 10900 - Digital Fundamentals](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1528)
* **Humanities (3 Credits):**[Select from the Humanities Core list](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1528)
* **Social Sciences (3 Credits):**[SOC 10000 - Introductory Sociology](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431#tt5367)
* **Additional Credits (3 Credits):**[ECET 20901 - Microcontroller Applications](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431#tt7020)
* **First-Year Experience (FYE) (3 Credit):** [ECET 10001 - Introduction To Electrical And Computer Engineering Technology](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431#tt6111)

**Major Core (89 Credits)**

* [ECET 10201 - Direct Current Circuits And Components](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 10900 - Digital Fundamentals](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 15201 - Alternating Current Circuits And Analysis](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 15401 - Electronic Components And Circuits](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 15901 - Digital Circuits And Applications](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 21000 - Structured C++ Programming For Electromechanical Systems](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 21201 - Electrical Power And Motors](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 26200 - Programmable Logic Controllers](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 30301 - Telecommunication Systems](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 31201 - Power Electronics Fundamentals](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 33101 - Generation And Transmission Systems For Electrical Power](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 36200 - Process Control Instrumentation](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 37301 - Renewable Energy Sources And Modeling](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 38400 - Advanced Mathematical Methods In DSP](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 39200 - Digital Signal Processing](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 40400 - Wireless Communication And Networking](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 45500 - Object Oriented System Design](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 45600 - Operating System With Embedded System Design](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 49000 - Senior Design Project Phase I](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [ECET 49100 - Senior Design Project Phase II](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [IET 30800 - Engineering Project Management And Economic Analysis](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [MA 14800 - Algebra And Trigonometry For Technology II](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431) or [MA 15400 - Trigonometry](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431#tt378)
* [MA 16019 - Applied Calculus I For Technology](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* [MA 16021 - Applied Calculus II And Differential Equations](https://catalog.pnw.edu/preview_program.php?catoid=5&poid=1431)
* Wellness Course Credit Hours: 1.00
* 400 Level ECET Electives (1) Credit Hours: 3.00
* Professional Selective Credit Hours: 15- Student may choose two Social Sciences courses plus one additional Humanities or Social Science course to fulfill this requirement

## Section IV: For all Program Changes;

Current Semester by Semester

| **SEMESTER 1 - Program Requirements (Course Title)**  | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Intro to ECET | ECET 10001 | FA | 3 | Yes |  |  |  |  |
| Digital Fundamentals | ECET 10900 | FA | 3 |  |  |  |  |  |
| Algebra & Trig for Technology I | MA 14700 or MA 15300 |  | 3 | Yes |  |  | MA 15300 | MA 11500 or ALEKS Math Placement 45 |
| English Composition I | ENGL 10400 | ALL | 3 | Yes | C- |  | ENGL1000 |  |
| Fundamentals of Speech | COM 11400 | ALL | 3 | Yes |  |  |  |  |

| **SEMESTER 2 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DC Circuits and Components | ECET 10201 (m) | SP | 3 |  |  |  |  | MA 14700 |
| Digital Circuits Application | ECET 15901 | SP | 3 |  |  |  |  | ECET 10900 |
| Structured C++ Programming for Electromechanical Systems | ECET 21000 | SP | 3 |  |  |  |  |  |
| Algebra & Trig for Technology II | MA 14800 / MA 15400 |  | 3 |  |  |  | MA 15400 | MA 14700 or MA 15300 or ALEKS Math Placement 60 |
| Humanities Elective | Any Gen. Ed. Approved Humanities course | ALL | 3 | Yes |  |  |  |  |

| **SEMESTER 3 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AC Circuits and Analysis | ECET 15201 | FA | 3 |  |  |  |  | ECET 10201 and MA 14800  |
| Electronic Component Circuits | ECET 15401 | FA | 3 |  |  |  |  | Pre-req or Co-req:ECET 15201 |
| Microcontroller Applications | ECET 20901 (m) | FA | 3 |  |  |  |  | ECET 15901 and ECET 21000 |
| Technical Report Writing | ENGL 22000 |  | 3 | Yes |  |  |  | ENGL 10400 or ENGL 10000 or ENGL 10800 |
| Introduction to Sociology | SOC 10000 | ALL | 3 | Yes |  |  |  |  |

| **SEMESTER 4 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Programmable Logic Controllers | ECET 26200 | SP | 3 |  |  |  |  | ECET 15201  |
| Electrical Power & Motors | ECET 21201 (m) | SP | 3 |  |  |  |  | ECET 15201 |
| Applied Calculus I for Technology | MA 16019  |  | 4 |  |  |  | MA 16300 | MA 14800 or MA 15400 or ALEKS Math Placement 75 |
| General Physics | PHYS 22000 |  | 4 | Yes |  |  |  | MA 14800 or MA 15400 |
| Wellness | Any FM Course / Open Elective |  | 1 |  |  | See Note 3 |  |  |

| **SEMESTER 5 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Applied Calc. II and Diff. Eqs. | MA 16021 |  | 3 |  |  |  | MA 16400 or MA 22400 | MA16019 |
| Operating System with Embedded System Design | ECET 45600 | FA | 3 |  |  |  |  | ECET 20901 |
| Advanced Math Methods in DSP | ECET 38400 | FA | 3 |  |  |  |  | ECET 15201 and MA 16019 |
| Telecommunication Systems | ECET 30301 | FA | 3 |  |  |  |  | ECET 15401 |
| Generation & Trans Systems for Electrical Power  | ECET 33100 | FA | 3 |  |  |  |  | ECET 21201 |

| **SEMESTER 6 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Renewable Energy Systems Sources and Modelling | ECET 37301 | SP | 3 |  |  |  |  | ECET 33100 and Pre/Co ECET31201 |
| Digital Signal Processing | ECET 39200 | SP | 3 |  |  |  |  | ECET 38400 and ECET 20901 |
| Wireless Communication & Networking | ECET 40400 | SP | 3 |  |  |  |  | ECET 30301 |
| Power Electronics Fundamentals | ECET 31201 | SP | 3 |  |  |  |  | ECET21201 and ECET15401  |
| Engineering Project Management | IET 30800 | FA, SP | 3 |  |  |  |  | Junior or Senior standing |

| **SEMESTER 7 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Senior Design Project Phase 1 (e) | ECET 49000 | FA, SP | 1 |  |  |  |  | IET 30800 and 3 out of ECET 39200, ECET 30301, ECET 31201, ECET 26200, and ECET 45600 |
| Process Control Instrumentation | ECET 36200 | FA | 3 |  |  |  |  | ECET 15401  |
| Humanities or Social Science Elective |  | ALL | 3 | Yes |  | See Note1 |  |  |
| Humanities or Social Science Elective |  |  | 3 |  |  | See Note1 |  |  |
| Science or Math Elective | Science or Math / Statistics course | ALL | 3 | Yes  |  | See Note1 |  |  |
| ECET Elective | ECET 40000 Level | FA | 3 |  |  | See Note4 |  |  |

| **SEMESTER 8 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Senior Design Project Phase II (e) | ECET 49100 | FA, SP | 2 |  |  |  |  | ECET 49000 |
| Object Oriented System Design | ECET 45500 | FA | 3 |  |  |  |  | ECET 21000 |
| Technical Elective |  |  | 3 |  |  | See Note 4 |  |  |
| ECET Elective | ECET 40000  | FA | 3 |  |  | See Note 2 |  |  |
| Humanities or Social Science Elective or Free Elective |  |  | 3 |  |  | See Note 1 |  |  |
| **Program Total** |  |  | **120** |  |  |  |  |  |

*Additional Information and Guidelines*

Note 1: Additional General Education Courses - Science or Math elective (3 credit hours) any Natural Science or Mathematics / Statistics general education approved course OR Humanities or Social Science elective (3 credit hours) any Humanities or Social Science general education approved course.

Note 2: ECET Elective – any ECET course except those already required in the plan of study.

Note 3: Any FM Course Sufficient / Free Elective (For transfer students)

Note 4: Select from any General Ed Approved Technology

## Section IV continued: For all Program Changes;

Proposed Semester by Semester

| **SEMESTER 1 - Program Requirements (Course Title)**  | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Intro to ECET | ECET 10001 | FA | 3 | Yes |  |  |  |  |
| Digital Fundamentals | ECET 10900 | FA | 3 |  |  |  |  |  |
| Algebra & Trig for Technology I | MA 14700 or MA 15300 |  | 3 | Yes |  |  | MA 15300 | MA 11500 or ALEKS Math Placement 45 |
| English Composition I | ENGL 10400 | ALL | 3 | Yes | C- |  | ENGL1000 |  |
| Fundamentals of Speech | COM 11400 | ALL | 3 | Yes |  |  |  |  |

| **SEMESTER 2 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DC Circuits and Components | ECET 10201 (m) | SP | 3 |  |  |  |  | ECET10001 or MCET10000 and MA 14700 or 15300 or 15900 |
| Digital Circuits Application | ECET 15901 | SP | 3 |  |  |  |  | ECET 10900 |
| Structured C++ Programming for Electromechanical Systems | ECET 21000 | SP | 3 |  |  |  |  |  |
| Algebra & Trig for Technology II | MA 14800 / MA 15400 |  | 3 |  |  |  | MA 15400 | MA 14700 or MA 15300 or ALEKS Math Placement 60 |
| Professional Selective 1 |  |  | 3 |  |  |  |  |  |

| **SEMESTER 3 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AC Circuits and Analysis | ECET 15201 | FA | 3 |  |  |  |  | ECET 10201 and MA 14800 or 15400 |
| Electronic Component Circuits | ECET 15401 | FA | 3 |  |  |  |  | Pre-req or Co-req:ECET 15201 |
| Microcontroller Applications | ECET 20901 (m) | FA | 3 |  |  |  |  | ECET 15901 and ECET 21000 |
| Technical Report Writing | ENGL 22000 |  | 3 | Yes |  |  |  | ENGL 10400 or ENGL 10000 or ENGL 10800 |
| Professional Selective 2 |  |  | 3 |  |  |  |  |  |

| **SEMESTER 4 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Operating System with Embedded System Design | ECET 45600 | FA | 3 |  |  |  |  | ECET 20901 |
| Electrical Power & Motors | ECET 21201 (m) | SP | 3 |  |  |  |  | ECET 15201 |
| Applied Calculus I for Technology | MA 16019  |  | 4 |  |  |  | MA 16300 | MA 14800 or MA 15400 or ALEKS Math Placement 75 |
| General Physics | PHYS 22000 |  | 4 | Yes |  |  |  | MA 14800 or MA 15400 |
| Wellness | Any FM Course / Open Elective |  | 1 |  |  | See Note 4 |  |  |

| **SEMESTER 5 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Applied Calc. II and Diff. Eqs. | MA 16021 |  | 3 |  |  |  | MA 16400 or MA 22400 | MA16019 |
| Advanced Math Methods in DSP | ECET 38400 | FA | 3 |  |  |  |  | ECET 15201 and MA 16019 |
| Telecommunication Systems | ECET 30301 | FA | 3 |  |  |  |  | ECET 15401 |
| Generation & Trans Systems for Electrical Power  | ECET 33100 | FA | 3 |  |  |  |  | ECET 21201 |
| Engineering Project Management | IET 30800 | FA, SP | 3 |  |  |  |  | Junior or Senior standing |

| **SEMESTER 6 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Renewable Energy Systems Sources and Modelling | ECET 37301 | SP | 3 |  |  |  |  | ECET 33100 and Pre/Co ECET31201 |
| Digital Signal Processing | ECET 39200 | SP | 3 |  |  |  |  | ECET 38400 and ECET 20901 |
| Wireless Communication & Networking | ECET 40400 | SP | 3 |  |  |  |  | ECET 30301 |
| Power Electronics Fundamentals | ECET 31201 | SP | 3 |  |  |  |  | ECET21201 and ECET15401  |
| Programmable Logic Controllers | ECET 26200 | SP | 3 |  |  |  |  | ECET 15201 |

| **SEMESTER 7 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Senior Design Project Phase 1 (e) | ECET 49000 | FA, SP | 3 |  |  |  |  | IET 30800 and 3 out of ECET 38400, ECET 30301, ECET 31201 and ECET 45600 |
| Object Oriented System Design | ECET 45500 | FA | 3 |  |  |  |  | ECET 21000 |
| Process Control Instrumentation | ECET 36200 | FA | 3 |  |  |  |  | ECET 15401  |
| Professional Selective 3 |  |  | 3 |  |  |  |  |  |
| Professional Selective 4 |  |  | 3 |  |  |  |  |  |
| **SEMESTER 8 - Program Requirements (Course Title)** | **Subject Code/ Course Number** | **Semester Offered**  | **Credit Hours** | **Gen Ed** | **Min Grade** | **Notes** | **Also Allowed** | **Pre/Co-requisite Courses** |
| Senior Design Project Phase II (e) | ECET 49100 | FA, SP | 3 |  |  |  |  | ECET 49000 or 49101 |
| ECET Elective | ECET 40000 Level | FA | 3 |  |  | See Note2 |  |  |
| Humanities Elective | Any Gen. Ed. Approved Humanities course | ALL | 3 | Yes |  |  |  |  |
| Professional Selective 5 |  |  | 3 |  |  |  |  |  |
| Introduction to Sociology | SOC 10000 | ALL | 3 | Yes |  |  |  |  |
| **Program Total** |  |  | **120** |  |  |  |  |  |

*Additional Information and Guidelines*

Note 1: Additional General Education Courses - Science or Math elective (3 credit hours) any Natural Science or Mathematics / Statistics general education approved course OR Humanities or Social Science elective (3 credit hours) any Humanities or Social Science general education approved course.

Note 2: ECET Elective – any 400 Level ECET course except those already required in the plan of study.

Note 3: The purpose of these 5 Professional Selective courses (15 credits) is to provide students to Pursue a Minor of their choice. Consult Advisor for possible exceptions.

Note 4: Any FM Course Sufficient / Free Elective (For transfer students)

1. <http://faculty.pnw.edu/blog/curriculum-document-approval-procedures/> [↑](#footnote-ref-1)