**Purdue Northwest Curriculum Document Coversheet**

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| **Document No:**  (According to [Instruction](http://faculty.pnw.edu/blog/curriculum-document-approval-procedures/)s[[1]](#footnote-1)) | COT 18-14 REV COURSE MCET 48200 | **Approval by Faculty Senate:**  (Leave Blank) | 3/8/2019 |
| **Proposed Effective Date** | July 1, 2019 | **Date Reviewed by Senate Curriculum**  **Committee:**  (Leave blank) | 2/22/2019 |
| **Submitting Department:**  (Name of both Dept & College/School ) | Engineering Technology College of Technology | **Name(s) of Library Staff Consulted:**  (NA if not required) |  |
| **Date Reviewed by Department** | 11/16/2018 |  |  |
| **Submission Date:**  (Date sent to College/School Curr Comm after Dept Review) | 11/16/2018 | **Will New Library**  **Resources Used?** | **Yes** **No**  Double-click to check Yes / No. |
| **Date Reviewed by College/School Curriculum Committee** | 1/25/2019 | **Form 40 Needed?**  (Double-click one box.)  Registrar will complete Form 40 **after** Senate approval of document. | **Yes** New courses or any course change, check **YES**  **No** For **all other** curriculum matters, check **NO**. |
| **Contact Person(s):**  (Name & Title) | Maged Mikhail Assistant Professor of MCET |  |  |

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

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| **Task (check all that apply and fill out sections appropriate for each change).**  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**. Mechatronics Engineering Technology |
| **Degree name(s).** (If applicable.) |

## Section II: This section is for changes in courses only

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| **Subject.** (Brief description of proposed change, addition or deletion.)   1. The perquisites of MCET48200 are being changed. 2. The description of the course is being updated to be more descriptive of how the course is now being taught. 3. The title of this course is being revised to match the updated course description. |
| **Justification.** (Briefly list main reasons for proposed change, addition or deletion.)  A more specific prerequisite for the MCET 48200 course has been developed as new course, MCET 38200. This new course uses one of the previous MCET 48200 prerequisites and adds more specific knowledge and skills needed to be successful in the MCET 48200 course.  The content of this course has expanded to more fully integrate robotic and system concepts as recommended by industrial advisory board members of the mechatronics engineering technology program and other industry partners. An updated course description that is more understandable to students has been suggested to make the content of the course clear. The revised course description to match the updated description has also been suggested. Students will earn an industry recognized certificate. |

Use the **Current** and **Proposed** spaces below for course changes only. Otherwise, mark “N/A”

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| **Current:** (Course changes: include entire present catalog information. Leave blank if new course)  MCET 48200 (2-3-3) Application of Industrial Robots For Advanced Manufacturing  Credit Hours: 3.00. This course provides an overview of robot mechanisms, dynamics, and intelligent controls. Topics include: planar and spatial kinematics; motion planning; mechanism design for manipulators and mobile robots; multi-rigid-body dynamics, 3D graphic simulation, control design, actuators, and sensors; wireless networking, task modeling, human-machine interface, and embedded software; programming industrial robots, robot cell design, end of arm tooling (EOAT) design; robot coupling with high speed vision systems.  Typically offered Spring  Prerequisite(s):ECET 26200 with C- or better AND MCET 21700 with C- or better OR MCET 21700 with C- or better | | **Proposed:** (Course changes: include entire new catalog information.)  MCET 48200 (2-3-3) Robotic System Integration  Credit Hours 3.00. This course covers the tasks and procedures required to integrate advanced PLC systems with industrial robots for advanced manufacturing. Topics include advanced robot programming and applications such as packaging, welding, painting, maintenance and troubleshooting. An introduction to advanced programming to develop complex scenarios for integrating robots, vision system, and PLCs into industrial work cells will also be covered. Students are required to demonstrate proficiency in setting up and programming an advanced integrated robotic application.  Typically offered Spring  Prerequisite(s): MCET 38200 Programming Industrial Robots |
| **Is this course also:** | **General Education** | **Currently Designated ExL (see** [**instructions[[2]](#footnote-2)**](http://faculty.pnw.edu/blog/curriculum-document-approval-procedures/)**)** |

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| **Course Objectives / Learning Outcomes.** (New courses only. List main outcomes. If lengthy, attach separate page.)  1) Apply industrial safety as they relate to robotic systems.  2) Develop communication between robot, PLC and PC systems.  3) Manipulate Robot/PLC I/O sensors and integrated systems.  4) Integrate HMI for robot registers.  5) Develop preventative maintenance programs for robotic systems.  6) Employ vision processes in advanced robotics applications. |
| **Impact on Students.** N/A (State “N/A” if proposal will not greatly affect students.) |
| **Impact on University Resources.** N/A (State “N/A” if proposal will not require new resources, faculty or funds.) |
| **Impact on other Academic Units.** N/A (State “N/A” if proposal will not affect other units.) (Include name of person in affected area this was discussed with.) |

(Boxes will expand and spill over onto next page to accommodate your typing.)

1. <http://faculty.pnw.edu/blog/curriculum-document-approval-procedures/> [↑](#footnote-ref-1)
2. <http://faculty.pnw.edu/blog/curriculum-document-approval-procedures/> [↑](#footnote-ref-2)