Bossier Parish Community College
Master Syllabus

Course Prefix and Number: TEED 262   **Credit Hours:** 3-2-3

Course Title: Mechatronics Level II

Course Prerequisites: TEED 260

Textbook(s): None

Course Description: The course is designed for the mechatronics system technician. Successful completion will prepare the student to sit for the Siemens Mechatronic System Certification Program Level II. Topics include process control, Siemens Totally Integrated Automation, automation systems, motor control, mechanics and machine elements, and manufacturing processes.

Learning Outcomes:
At the end of this course the student will:
    A. illustrate process control techniques and terminology associated with a mechatronic system;
    B. use Siemens TIA to modify, maintain, and develop mechatronic systems;
    C. demonstrate and understand PLC integrated controls as used in automated systems;
    D. demonstrate and understand the key features of machine elements and mechanics associated with mechatronics systems; and
    E. demonstrate and understand the integration of mechatronics systems within the larger manufacturing process or plant operations.

To achieve the learning outcomes, the student will or will be able to:
(The letter designations at the end of each statement refer to the learning outcome(s).
1. analyze the technical specification of mechatronic systems, subsystems, modules and components; (A)
2. derive and determine parameters for mechatronic systems and system elements; (A)
3. measure, interpret and analyze electrical, PLC/microcontroller and mechanical values; (B)
4. assemble and install tools and hardware systems; (B)
5. install, implement and modify software tools used in mechatronic systems; (B)
6. use troubleshooting skills to identify, foresee and prevent possible problems, conflicts and failures and to systematically and intelligently make repairs; (A,B,C)
7. program mechatronic modules and systems, especially PLCs; (B,C)
8. implement PLC networks, including configuration and data transfer using bus systems; (B,C)
9. incorporate relevant technical literature into understanding of system operation and using this information to propose procedural and operational changes; (B,C,D)
10. demonstrate safety standards; (E)

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11. demonstrate knowledge of process control technology, including all regulator types; (E)
12. observe, follow, and influence cost control and process efficiency procedures; (E) and
13. execute all of the above as an effective member of a team. (E)

Course Requirements:
Complete all homework assignments, in-class equipment exercises, in class tests, and final exam.

Course Grading Scale:
90 – 100 = A
80 – 89   = B
70 – 79   = C
60 – 69   = D
0 – 59   = F

Attendance Policy: The college attendance policy is available at
http://www.bpcc.edu/catalog/current/academicpolicies.html

Course Fees: This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, software licenses, certification exams, and/or clinical fees.

Nondiscrimination Statement: Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

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