**MT3.899: Capstone Project and Assessment**

Linn-Benton Community College – Spring 2020

3 Credit Hours

**Instructor: Ken Dickson-Self** **Office hours:** Online meetings available

Office: IA-112A **Phone:** 541-917-4942 (forwards to mobile)

Email:   dicksok@linnbenton.edu

**REQUIRED TEXT:**

1. Access to [Moodle](https://moodle.linnbenton.edu/login/index.php) and [Google Drive](https://drive.google.com/) (student account)

**COURSE DESCRIPTION**

Complete the creation of operating and maintenance routines for a working, fully automated production system using skills learned in previous mechatronics coursework. Troubleshoot systems faults and devise a plan for optimizing system operation. Requires substantial research activity and lab time.

**COURSE OUTCOMES**

Upon successful completion of this course, students will be able to:

* Work with team to plan & organize a Mechatronics' Project Submit Mechatronics' Project plan for approval to instructor.
* Progress toward Mechatronics' Project completion and submit weekly progress reports to instructor.
* Present Mechatronics' Project to classmates & Mechatronics' instructors via PowerPoint or other presentation software.
* Prepare for industry-based certifications.
* Pass third-party Mechatronics' Assessment Exam.

**GRADING**

This class is graded “A” through “F”.  Letter grades will be assigned as follows:

*90-100% = A, 80-89% = B, 70-79% = C, 60-69% = D, Below 60% = F*

Final Grade: Determined by the following breakdown:

Project, Final Report 60%

SkillsUSA Certification Assessment 20%

Assigned Activities and Homework 20%

 100%

All assignments will be submitted via Moodle. Late assignments will be penalized.

**PROJECT, FINAL REPORT**

Your groups and your project will be assigned by the instructor. As we go through the course, you will be learning the fundamentals of project management. As you learn these skills, you will be applying them to your project. The expectation is that you each will work toward the final project, which is a single document created by your group. The document will be a formal report detailing how the project is to be completed, including key aspects such as risk assessment, network diagram, priority matrix, and work breakdown structure. Much of the work on your final report will actually come from assignments and homework done throughout the term. Your final report must read like a cohesive document and will lose points if every bit and section sounds like it was written by a different person.

A significant portion of your grade on the final report will come from your peers. You will be assessed on both the quality and quantity of your work. For instance, if five people are on your team, each should do 20% of the work. If your teammates grade you as doing only 10% of the work, you will receive only half of the possible points available for the final project. This does not mean you need to rush out and do 80% of the work to ensure you get a good grade. It means you must work together to move the project toward the goal. If your group has someone who is not contributing their fair share of the work. This is easily handled in peer evaluations. Students will not be assessing their own work, and all evaluations will be confidential.

**SKILLSUSA CERTIFICATION ASSESSMENT**

As part of the accreditation for the program and as a meaningful certificate of accomplishment for graduates, all Capstone students must complete the SkillsUSA Mechatronics Assessment. A passing grade for this comprehensive assessment is 65%, but every student who attempts the assessment will be given full credit for this grade aspect.

**ASSIGNED ACTIVITIES AND HOMEWORK**

Throughout the term, there will be several activities and homework that get assigned. Most of these will be in support of the final report you will submit, but they may also include other topics of my choosing.

**LBCC EMAIL AND COURSE COMMUNICATIONS**

You are responsible for all communications sent to your LBCC email account. You are required to use your LBCC-provided email account for all email communications at the College. You may access your LBCC student email account through [Student Email](http://linnbenton.edu/lbcc-email).

**DISABILITY AND ACCESS STATEMENT**

Students who may need accommodations due to documented disabilities, who have medical information which the instructor should know, or who need special arrangements in an emergency should speak with their instructor during the first week of class. If you believe you may need accommodations but are not yet registered with the Center for Accessibility Resources (CFAR), please visit the CFAR Website for steps on how to apply for services or call 541-917-4789.

**ACADEMIC HONESTY**
Students are expected to follow [LBCC policies](http://www.linnbenton.edu/faculty-and-staff/administrative-information/policies/board-policies-and-administrative-rules/7000-series-student-services/) regarding academic integrity as articulated in the Students’ Rights Responsibilities and Conduct Policy. Students found to be involved in academic dishonesty will receive an F (failing grade) in this course.

**STATEMENT OF INCLUSION**

To promote academic excellence and learning environments that encourage multiple perspectives and the free exchange of ideas, all courses at LBCC will provide students the opportunity to interact with values, opinions, and/or beliefs different than their own in safe, positive and nurturing learning environments. LBCC is committed to producing culturally literate individuals capable of interacting, collaborating and problem-solving in an ever-changing community and diverse workforce.

**TITLE IX REPORTING POLICY**

If you or another student are the victim of any form of sexual misconduct (including dating/domestic violence, stalking, sexual harassment), or any form of gender discrimination, LBCC can assist you. You can report a violation of our sexual misconduct policy directly to our Title IX Coordinator. You may also report the issue to a faculty member, who is required to notify the Coordinator, or you may make an appointment to speak confidentially to our Advising and Career Center by calling 541-917-4780.

**SCHEDULE – Subject to change**

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| **Week** | **Topic of the week** | **Work Due** |
| 1 | Syllabus, Intro to Project Management | Teams Assigned (Instructor) |
| 2 | Project Management Fundamentals | Project Assigned (Instructor) |
| 3 | Project Plan | Identify Milestones |
| 4 | Work breakdown structure | Network diagram |
| 5 | Resource analysis |  |
| 6 | Risk analysis |  |
| 7 | Risk Response | Risk Assessment |
| 8 | Project Process Management |  |
| 9 | Final Project Work |  |
| 10 | Final Project Work | Final Project Report |