COURSE TITLE: ENGR 112 Engineering Orientation II

CREDITS: 4

ROOM: (IA-215)

CRN: 42891

LECTURE: (Pre Recorded Lectures in Moodle)

RECITATION: (IA-215) (Time you can ask Questions as a class): Tuesday 4:00 to 4:50 pm

IN-CLASS EXAMS: (IA-215)
- **Midterm: Tuesday May 3, 2022 (4:00 pm to 5:50 pm in IA-215)**
- **Final Exam: Tuesday Jun 7, 2022 (4:00 pm to 5:50 pm in IA-215)**
  https://www.linnbenton.edu/calendars/finals-schedule.php

INSTRUCTOR: Craig Munsee

EMAIL: munseec@linnbenton.edu

OFFICE: IA-206

OFFICE HOURS (Additional time you can ask Questions): (Zoom Meeting)
- **Tuesday 3:00 pm to 3:50 pm in IA-206**
- **Wednesday Noon - 12:50 pm in IA-206 and (Zoom Meeting: Link in Moodle)**
- **Thursday Noon - 12:50 pm (Zoom Meeting: Link in Moodle)**
- **Friday Noon - 12:50 pm (Zoom Meeting: Link in Moodle)**
- **Others by Appointment**

Course Description:
- Covers systematic approaches to problem solving using the computer. Includes logic analysis, flow charting, input/output design, introductory computer programming, and the use of engineering software.

Prerequisite(s):
- Math 111 College Algebra with a grade of C or better.

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

1. Identify, formulate, and solve engineering problems. Demonstrate the ability to apply mathematics, science, and engineering techniques to solve engineering problems.
2. Select and apply the techniques, skills, and modern engineering tools necessary for engineering practice.
3. Mathematically describe and solve engineering problems using complex numbers, vector and matrix operations, and simultaneous linear equations.
4. Develop internally documented computer programs that utilize sequence, selection and repetition control structures and user-defined functions using the SCI(MAT)LAB programming

environment.

Textbooks:
- **No Textbooks are required** for this class, but if your interested in more information see the list below.
- Reference Book: Introduction to SCILAB For Engineers and Scientists, by Nagar, Sandeep
- Reference Book: MATLAB: An Introduction with Applications, 6th Edition, by Amos Gilat
- Reference Book: MATLAB for Engineers 5th Edition, by Holly Moore

Course Topics:
- Engineering Problem Solving of Basic Engineering Concepts: Units, and Unit Conversion, Force, Weight, Temperature, Pressure, Density, Energy, Power, and Efficiency.
- Working with Excel Workbooks
- Graphical Solutions using Excel
- SCI(MAT)LAB programming environment

Grading:

Assignment	Number	Percentage
In-Class Assignments (ICA)	9	15 %
Homework	9	25 %
Weekly Quizzes	9	20 %
Exams	2	40 %
Total		100%

- 90-100% A, 80-89% B, 70-79% C, 60-69% D, < 59% F
- The class is designed to go over the material in the lectures and work through the in-class assignments (ICAs). After completing the weeks' worth of lectures, you should have the ICA completed and be ready to work on the homework. This gives you the opportunity to work on the assignment over the weekend and be able to ask question before the assignments are due. If you wait till the day the assignments are due, you run the risk of not being able to get answers to questions and possibly not completing the assignments on time.
- There will not be any extra assignments given beyond those listed, so please **do not** email the instructor to ask if there is anything extra you can do to improve your grade.

In-Class Assignments (ICA):
- ICAs are assignment that will be used to help teach the class material. The instructor will work through these assignments in the lectures and the students are expected to complete the assignments and turn them in for credit.
- ICA sets are linked in Moodle and are to be turned in to Moodle by 11:55 PM on the day they are due. If there is a problem with Moodle, you may email the assignment to the instructor.
- The type of files you will be turning in to Moodle for grading are Excel and SCILAB files.
- **The lowest ICA grade will be dropped.**
- **Late assignments will not be accepted unless an extension has been requested prior to the due date. A student is allowed only one two-day extension for an ICA assignment.**
- The Student is responsible for turning the ICA in on time and in the recommended format. They are also responsible for turning in the correct ICA. If the ICA is not turned in on time or the

wrong assignment has been submitted a score of zero will be given for that assignment.

Homework:
- Homework problem sets are linked in Moodle and are to be turned in to Moodle by 11:55 PM on the day they are due. If there is a problem with Moodle, you may email the assignment to the instructor.
- The type of files you will be turning in to Moodle for grading are Excel and SCILAB files.
- **The lowest homework grade will be dropped.**
- **Late homework will not be accepted unless an extension has been requested prior to the due date. A student is allowed only one two-day extension for a homework assignment.**
- Each problem will be checked for a reasonable attempt at solving.
- Solutions to the homework problems will be posted in Moodle after the homework is due.
- The Student is responsible for turning the homework in on time and in the recommended format. They are also responsible for turning in the correct homework. If the homework is not turned in on time or the wrong assignment has been submitted a score of zero will be given for that assignment.

Quizzes:
- A weekly quiz is given to test the student's knowledge of the material presented in the lecture and lecture notes for that week.
- **Students who do not complete the Week 1 quiz will be dropped from the class**.
- **No Quiz grades will be dropped.**

Exams:
- The exams will be in-class timed tests and will only be given on the day indicated above. The exams will be given during the weeks scheduled class time.
- **If you miss the exam on the day it has been offered, it is the reasonability of the student to arrange for a make-up exam. There will be a 10% grade penalty for each additional day you are later than the original exam date.**
- No exam grades will be dropped.

Inservice/Holidays:
- School Inservice: LBCC will be closed (**Friday, Apr 1, 2022**)
- Memorial Day: LBCC will be closed (**Monday, May 30, 2022**)

Class Climate Survey:
- Student feedback is important to improve this course and to help the instructor know how to adjust teaching methods. Your feedback is taken seriously and does influence future versions of the course. The evaluations are anonymous, and links to the evaluations will be emailed to your student LBCC email account after the 5th week of the term. I encourage you take this opportunity to provide constructive feedback on the class. Thank you in advance for your input!
- **Extra Credit will be given for those who completing the Class Climate Survey**. Since the survey is anonymous you are asked to attach a screen shot showing that you completed the survey (Not a screen shot of your answers). A place to turn this in can be found on week 7 of Moodle.

Academic Integrity:
- You are expected to turn in your own work and not take credit for the work of others.
- For Homework assignments, you may work together and discuss the problems with your classmates, but you are expected to turn in your own work. If you turn in something that is not your work, it is considered cheating (This includes copying and sharing computer files).
- **No collaboration is allowed for Quizzes and Exams.**
- **Depending on the severity of the incident, those caught cheating and those who aid them will receive a score of zero for that assignment or fail the class and will be reported to Jill Childress, Ed. D. | Manager, Student Conduct and Retention.**

Computer & Software Requirements:
- You will need a computer capable of running the full version of Microsoft Office (Excel) and SciLab. There are Windows and Mac versions available for both programs.
- You should install both programs the first week to determine if your computer can run the programs correctly.
- As a student, you can get a copy of the full version of Microsoft Office for free. There is no cost for SciLab. For assistance with installing Microsoft Office contact the student help desk.
  - https://www.microsoft.com/en-us/education/products/office
  - https://www.linnbenton.edu/student-services/library-tutoring-testing/library/help-desk.php
  - https://www.scilab.org/
- If you are considering purchasing a new computer, I would recommend a Windows-based Laptop with an Intel i7 processor, 16 GB of RAM, and at least a 500 GB hard drive. MacOS computers are good computers too, but are limited when it comes to compatibility for Engineering software.

College Policies

COVID-19 CLASSROOM REQUIREMENTS FOR ALL STUDENTS AND FACULTY
Linn-Benton Community College has established rules and policies to make the return to the classroom as safe as possible. It is required for everyone to follow all of the campus rules and policies. To participate in this class, LBCC requires all students to comply with the following:
https://www.linnbenton.edu/about-lbcc/college-services/safety/covid19/index.php

WHERE TO REPORT A POSITIVE CASE OF COVID AND HOW TO KNOW IF YOU NEED TO QUARANTINE
In the event of a positive diagnosis of coronavirus, we appreciate your support in reporting it to our Office of Finance and Operations by contacting floms@linnbenton.edu. College administration will then work with local health authorities to begin contact tracing, and others who may have been exposed will be notified. The identity of the individual or individuals infected will be kept confidential, but you will be informed if a quarantine is necessary. If you are not informed about a close contact, you do not need to quarantine.

Drop/Withdraw Policy:
If you are withdrawing from the class, you must file a Schedule Change Form with Registration or use WebRunner. If you formally drop the class **before Monday of the second week of the term**, you will receive a tuition refund. If you withdraw after the Monday of the second week of instruction through the seventh week a **'W'** will show up on your transcript. **No withdrawals are allowed after the end**

of the seventh week. An instructor may not assign a "W" grade.

If you received financial aid or veteran's benefits, PLEASE talk with associates at the appropriate office to determine what effects on eligibility dropping a course will have. Don't jeopardize your eligibility!! You can contact the Financial Aid Office by calling (541) 917-4850 or by visiting the Financial Aid Office in Takena Hall.

If you stop attending the course without formally withdrawing you will continue to accumulate grades (zeroes for all assignments not turned in) and will receive the grade assigned by the instructor. You will also be held accountable for all charges on your account.

LBCC Comprehensive Statement of Nondiscrimination:
Linn-Benton Community College does not discriminate based on race, color, religion, ethnicity, use of native language, national origin, sex, sexual orientation, gender, gender identity, marital status, disability, veteran status, age, or any other status protected under applicable federal, state, or local laws in its programs or activities. For further information see Board Policy 1015 and Administrative Rule 1015-01. The following staff members have been designated to handle inquiries regarding the nondiscrimination policies:

For concerns or inquiries regarding disability accessibility and accommodations:
Contact: Carol Raymundo, Director of Center for Accessibility Resources
RCH-101, Albany Campus, Albany, OR 97321
(541) 917-4789
 raymundo@linnbenton.edu

For concerns or complaints about the College or an LBCC staff member:
Contact: Scott Rolen, Director of Human Resource Development and Support and Title IX Coordinator
CC-108, Albany Campus, Albany, OR 97321
(541) 917-4425
rolens@linnbenton.edu

For concerns or complaints about a student:
Contact: Jill Childress, Manager for Student Conduct and Retention and Title IX Coordinator
WH-215, Albany Campus, Albany, OR 97321
(541) 917-4806
childrj@linnbenton.edu

Request for Special Needs or Accommodations:
Direct questions about or requests for accommodations to the Center for Accessibility Resources, 541-917-4789 or cfar@linnbenton.edu at least three business days in advance for special events and as soon as possible for classroom or other emerging requests. LBCC will make every effort to honor requests. LBCC is an equal opportunity educator and employer.

Student Resources:
LBCC has many resources to help our students be successful and overcome difficulties so that you can focus on learning. If you have a need, please contact your advisor for assistance and they can help direct you to the services you need. A list of some of these resources can be found in Aviso or the link below. https://linnbenton.avisoapp.com/aviso/app/resourceGuide/index

Changes to the Syllabus

I reserve the right to change the contents of this syllabus due to unforeseen circumstances. You will be given notice of relevant changes in class, or through LBCC e-mail.

ENGR 112 Class Schedule:

Week:	Topics Covered:	Assignments Due:
1 **Mar 28**	• Syllabus • L01_Dimensions and Units • L02_Temperature • L03_Mass Force and Weight	• Week 1 Quiz (**Take by Sunday Apr 3**)
2 **Apr 4**	• L04_Excel Workbooks • L05_Density • L06_Pressure	• ICA #1 (**Due on Wednesday Apr 6**) • Homework #1 (**Due on Wednesday Apr 6**) • Week 2 Quiz (**Take by Sunday Apr 10**)
3 **Apr 11**	• L07_Graphical Solutions	• ICA #2 (**Due on Wednesday Apr 13**) • Homework #2 (**Due on Wednesday Apr 13**) • Week 3 Quiz (**Take by Sunday Apr 17**)
4 **Apr 18**	• L08_Energy • L09_Power and Efficiency	• ICA #3 (**Due on Wednesday Apr 20**) • Homework #3 (**Due on Wednesday Apr 20**) • Week 4 Quiz (**Take by Sunday Apr 24**)
5 **Apr 25**	• L10_Introduction to SCILAB • L11_Saving SCILAB Work • ENGR112 Practice Midterm	• ICA #4 (**Due on Wednesday Apr 27**) • Homework #4 (**Due on Wednesday Apr 27**) • Week 5 Quiz (**Take by Sunday May 1**)
6 **May 2**	• L12_Working with Vectors in SCILAB • L13_Working with Arrays in SCILAB	• <mark>**Midterm (Tuesday May 3)**</mark> • ICA #5 (**Due on Friday May 6**) • Homework #5 (**Due on Friday May 6**) • Week 6 Quiz (**Take by Sunday May 8**)
7 **May 9**	• L14_Graphing in SCILAB	• ICA #6 (**Due on Wednesday May 11**) • Homework #6 (**Due on Wednesday May 11**) • Week 7 Quiz (**Take by Sunday May 15**)
8 **May 16**	• L15_ Creating Functions in SCILAB • L16_ Solving Systems of Linear Equations with SCILAB • L17_Programming in SCILAB	• ICA #7 (**Due on Wednesday May 18**) • Homework #7 (**Due on Wednesday May 18**) • Week 8 Quiz (**Take by Sunday May 22**)
9 **May 23**	• L17_Programming in SCILAB cont.	• ICA #8 (**Due on Wednesday May 25**) • Homework #8 (**Due on Wednesday May 25**) • Week 9 Quiz (**Take by Sunday May 29**)
10 **May 30**	• ENGR112 Practice Final	• ICA #9 (**Due on Wednesday Jun 1**) • Homework #9 (**Due on Wednesday Jun 1**)
Finals **Jun 6**		• <mark>**Final Exam (Tuesday Jun 7)**</mark>