

COURSE TITLE: ENGR 112 Engineering Orientation II

CREDITS: 4

ROOM: (Online)

CRN: 30300

LECTURE/RECITATION: (Pre Recorded Lectures Online)

INSTRUCTOR: Craig Munsee

EMAIL: munseec@linnbenton.edu

OFFICE: IA-206

OFFICE HOURS: (Zoom Meeting)

Monday 2:00 pm - 2:50 pm

Tuesday 2:00 pm - 2:50 pm

Wednesday 2:00 pm - 2:50 pm

Thursday 2:00 pm - 2:50 pm

Friday 2:00 pm - 2:50 pm

(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
- Reference Book: Thinking Like an Engineer: An Active Learning Approach, Third Edition

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

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.
 - <https://www.microsoft.com/en-us/education/products/office>
 - <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.

Grading:

Assignment	Number	Percentage
In-Class Assignments (ICA)	9	15 %
Homework	9	25 %
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. You are given one additional week to complete the homework and turn in the ICA. 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 online timed tests and will only be given on the day indicated below. Because the exams will be online, you may take it any time during the day it is offered. The exam will close at midnight even if you started it at 11:00 pm.
- If you have a time conflict for the test, you will need to contact your instructor before the exam to arrange for a different day.
- If you miss the exam on the day it has been offered and prior arrangements have not been made, there will be a 10% grade penalty to make up the exam.
- No exam grades will be dropped.
- Dates of the exams are listed below:
 - Midterm: **Tuesday Feb 9, 2021**
 - Final Exam: **Tuesday Mar 16, 2021**

<https://www.linnbenton.edu/current-students/schedule-and-learn/finals-schedule/>

Holidays:

- Martin Luther King Jr. Day: LBCC will be closed (**Monday, Jan 18, 2021**)
- Presidents Day: LBCC will be closed (**Monday, Feb 15, 2021**)

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 Student Evaluations of Teaching (SETs) are anonymous, and links to the evaluations will be emailed to your student 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 and ICA 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 Exams and quizzes.
- **Those caught cheating and those who aid them will receive a score of zero for that assignment or test and will be reported to the Dean of Students.**

College Policies

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.

Center for Accessibility Resources (CFAR):

You should meet with your instructor during the first week of class if:

1. You have a documented disability and need accommodations.
2. Your instructor needs to know medical information about you.
3. You need special arrangements in the event of an emergency.

If you have documented your disability, remember that you must make your request for accommodations through the Center for Accessibility Resources Online Services web page every term in order to receive accommodations. If you believe you may need accommodations but are not yet registered with CFAR, please visit the CFAR website at <http://www.linnbenton.edu/cfar> for steps on how to apply for services or call 541-917-4789.

LBCC Comprehensive Statement of Nondiscrimination

LBCC prohibits unlawful discrimination 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. For further information see Board Policy P1015 in our Board Policies and Administrative Rules. Title II, IX, & Section 504: Scott Rolen, CC-108, 541-917-4425; Lynne Cox, T-107B, 541-917-4806, LBCC, Albany, Oregon. To report: [linnbenton-advocate.symphlicity.com/public report](http://linnbenton-advocate.symphlicity.com/public-report).

Know your rights and responsibilities:

LBCC students have rights: the right to free speech, the right to assemble, the right of a free press, etc. LBCC students also have responsibilities to their community: the responsibility to participate and engage in class, the responsibility to advocate for their needs (ask for help), the responsibility to support a respectful teaching and learning environment, the responsibility to treat all persons with respect, the responsibility to be truthful and honest in all work and communications, and the responsibility to follow staff directions, local, state, and federal laws.

Rights and responsibilities balance together to create the best learning environment. For example, while you have free speech in the café or courtyard, in class the instructor decides whose turn it is to talk and what the topics for conversation will be. Students are free to believe what they believe, but instructors may require students to learn and recite concepts, principles, or theories for a class even if the student does not believe those concepts. You play a role in creating a positive community at LBCC.

Please review your rights and responsibilities (<http://linnbenton.edu/go/studentrights>).

If you believe a student is violating your rights, ask to be treated with respect. If that does not cure the situation, report to Associate Dean Dr. Lynne Cox, Takena Hall Rm. 107. If you believe a faculty member or LBCC employee is violating your rights, please report to Human Resources, Scott Rolen, Calapooia Center Rm. 108.

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 Jan 4	<ul style="list-style-type: none"> • Syllabus • L01_Dimensions and Units • L02_Temperature • L03_Mass Force and Weight 	<ul style="list-style-type: none"> • Week 1 Quiz (Take by Sunday Jan 10)
2 Jan 11	<ul style="list-style-type: none"> • L04_Excel Workbooks • L05_Density • L06_Pressure 	<ul style="list-style-type: none"> • ICA #1 (Due on Friday Jan 15) • Homework #1 (Due on Friday Jan 15) • Week 2 Quiz (Take by Sunday Jan 17)
3 Jan 18	<ul style="list-style-type: none"> • L07_Graphical Solutions 	<ul style="list-style-type: none"> • ICA #2 (Due on Friday Jan 22) • Homework #2 (Due on Friday Jan 22) • Week 3 Quiz (Take by Sunday Jan 24)
4 Jan 25	<ul style="list-style-type: none"> • L08_Energy • L09_Power and Efficiency 	<ul style="list-style-type: none"> • ICA #3 (Due on Friday Jan 29) • Homework #3 (Due on Friday Jan 29) • Week 4 Quiz (Take by Sunday Jan 31)
5 Feb 1	<ul style="list-style-type: none"> • L10_Introduction to SCILAB • L11_Saving SCILAB Work • ENGR112 Practice Midterm 	<ul style="list-style-type: none"> • ICA #4 (Due on Friday Feb 5) • Homework #4 (Due on Friday Feb 5) • Week 5 Quiz (Take by Sunday Feb 7)
6 Feb 8	<ul style="list-style-type: none"> • L12_Working with Vectors in SCILAB • L13_Working with Arrays in SCILAB 	<ul style="list-style-type: none"> • Midterm (Tuesday Feb 9) • ICA #5 (Due on Friday Feb 12) • Homework #5 (Due on Friday Feb 12) • Week 6 Quiz (Take by Sunday Feb 14)
7 Feb15	<ul style="list-style-type: none"> • L14_Graphing in SCILAB 	<ul style="list-style-type: none"> • ICA #6 (Due on Friday Feb 19) • Homework #6 (Due on Friday Feb 19) • Week 7 Quiz (Take by Sunday Feb 21)
8 Feb 22	<ul style="list-style-type: none"> • L15_Solving Systems of Linear Equations with SCILAB • L16_Creating Functions in SCILAB • L17_Programming in SCILAB 	<ul style="list-style-type: none"> • ICA #7 (Due on Friday Feb 26) • Homework #7 (Due on Friday Feb 26) • Week 8 Quiz (Take by Sunday Feb 28)
9 Feb 29	<ul style="list-style-type: none"> • L17_Programming in SCILAB cont. 	<ul style="list-style-type: none"> • ICA #8 (Due on Friday Mar 5) • Homework #8 (Due on Friday Mar 5) • Week 9 Quiz (Take by Sunday Mar 7)
10 Mar 8	<ul style="list-style-type: none"> • ENGR112 Practice Final 	<ul style="list-style-type: none"> • ICA #9 (Due on Friday Mar 12) • Homework #9 (Due on Friday Mar 12)
Finals Mar 15		<ul style="list-style-type: none"> • Final Exam (Tuesday Mar 16)