



North Central State College  
MASTER SYLLABUS  
2017-2018

- A. Academic Division: Business, Industry, and Technology
- B. Discipline: Engineering Technology
- C. Course Number and Title: ENGR1010 Introduction to Engineering
- D. Course Coordinator: Randy Storms  
Assistant Dean: Daniel Wagner

Instructor Information:

- Name: [Click here to enter text.](#)
- Office Location: [Click here to enter text.](#)
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- E. Credit Hours: 2  
Lecture: 1 hour  
Laboratory: 2 hours
- F. Prerequisites: None
- G. Syllabus Effective Date: Fall, 2017
- H. Textbook(s) Title: None
- I. Workbook(s) and/or Lab Manual: None
- J. Course Description: This is an introductory course for engineering technology students. Students will develop a deeper understanding and appreciation of engineering, the problems engineers encounter and the contributions made by engineers from various disciplines. The ethics and responsibilities of the engineer will be discussed. Lab experience includes the following PC applications: operating systems and hardware, word processors, spreadsheets, and engineering graphing. An introduction to basic language programming is included at the end. Emphasis will be placed on using a PC to solve engineering problems and produce results. TAG: OES001 - INTRODUCTION TO ENGINEERING
- K. College-Wide Learning Outcomes

College-Wide Learning Outcome	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	Intercultural Knowledge & Competence VALUE Rubric
Critical Thinking	
Information Literacy	
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Use the computer as a tool to help solve engineering related problems.	4 Labs, 3 Projects, quizzes, Midterm and Final
2. Function on a team in an academic environment.	Project with written report and presentation
3. Analyze and discuss ethics in engineering practices using several scenarios involving an engineer faced with ethical choices.	In class participation and discussion. Written conclusion.
4. Write a simple BASIC language program with inputs, calculations, decisions, and outputs.	4 Labs, Quizzes and Final Exam.
5. Demonstrate hands-on skills related to applications of engineering.	Projects, and Lab throughout the semester.
6. Understand and solve open-ended problems related to engineering.	Final Projects, and Labs throughout the semester.

M. Topical Timeline (Subject to Change):

Week	Topic	Assessment
<b>(Note all lab documents and homework assignment materials are posted on Blackboard)</b>		
1	Identify hardware of a typical PC. <ol style="list-style-type: none"> <li>1. Block Diagram</li> <li>2. Hardware identification               <ol style="list-style-type: none"> <li>a. Motherboard</li> <li>b. Power supply</li> <li>c. Drives</li> <li>d. Memory</li> <li>e. Ports (USB/Serial/Parallel)</li> <li>f. Video</li> <li>g. Sound</li> </ol> </li> <li>3. Microprocessor fetch/execute cycle</li> <li>4. Disks and using software</li> </ol>	Lab: Tear down a PC, identify parts, and rebuild to working condition.  Homework: <ol style="list-style-type: none"> <li>1. View videos on computer basics, <u>Using Your Mouse</u>, and <u>Windows Desktop</u> and answer questions about video topics.</li> <li>2. View the <u>Computer Tour</u> video and answer questions about video topics.</li> <li>3. Read “How USB Ports work” and answer homework questions.</li> <li>4. 4) Read assignment 4 and answer questions on BIOS, Boot, RAM, ROM and HDDs.</li> </ol>

Week	Topic	Assessment
2	<p>Windows, current version(s)</p> <ol style="list-style-type: none"> <li>1. Environment &amp; Icons</li> <li>2. Desktop</li> <li>3. Explorer</li> <li>4. Multiple Apps</li> <li>5. Properties</li> <li>6. Clipboard</li> <li>7. Folders</li> <li>8. Creating folders</li> <li>9. Renaming files</li> <li>10. Copy/Cut/Paste</li> </ol> <p>Academic use of the internet for research</p> <p>Word Processor</p> <ol style="list-style-type: none"> <li>1. Environment &amp; a document</li> <li>2. Page Setup</li> <li>3. Fonts and size, super and subscripts</li> <li>4. Inserting a drawing</li> <li>5. Printing options</li> <li>6. Importing files</li> </ol>	<p>Windows Lab: Demonstrate proficiency in using Windows Explore and file management.</p> <p>Internet Lab: Demonstrates proficiency in using and internet browser .</p> <p>WWW Search lab: Demonstrate internet research proficiency using search engines and megasearch engines.</p> <p>Word processing lab: Using supplied research paper demonstrate proficiency in format documents, using an equation editor, inserting images and inserting spreadsheet data into a document.</p> <p>Homework:</p> <ol style="list-style-type: none"> <li>1. View video on Using the Internet and answer questions.</li> <li>2. 2) Read the tutorials on word processors and equation editors.</li> </ol>
3	<p>Spreadsheet &amp; Charts (Graphs)</p> <ol style="list-style-type: none"> <li>1. Cells, rows, columns</li> <li>2. Text vs. data</li> <li>3. Formulas &amp; Functions</li> <li>4. Filters</li> <li>5. Chart Types &amp; Creation</li> <li>6. Chart Labels &amp; Titles</li> </ol>	<p>Lab: Measurement, data collection and data organization lab.</p> <p>Lab: Hybrid/Diesel Comparison.</p>
4	Continue spreadsheet development.	Lab: Residential Electrical Load Calculations
5	<p>Integration</p> <ol style="list-style-type: none"> <li>1. Inserting charts, data into word processor documents</li> <li>2. Linking</li> </ol>	<p>Lab: Solar Isolation lab</p> <p>Lab: Creating Charts using spreadsheet data.</p>
6		Lab: Deconstruct, investigate, analyze and create a bill of materials of a typical manufactured object.
7	Review and Midterm exam	
8	With at least 2 student peers, develop a practical Engineering Preventative Management Solution to a historical Engineering Disaster.	Project 1 with written report and presentation
9	Continue project 1	
10	Research, present and discuss a variety of disciplinary and career options and areas within engineering.	Project with written report and presentation. Research various engineering fields, determine what areas of scientific discipline are required for each field, what degrees and /or certifications may be required, 2-3 prominent engineers or scientists in each field, and salary ranges for each field and attained degree.

Week	Topic	Assessment
11	Research, present and discuss a variety of disciplinary and career options and areas within engineering.	
12	Analyze and discuss ethics in engineering practices using several scenarios involving an engineer faced with ethical choices.	Project with written report and presentation. Choose 2 of several engineering ethics case studies given to the student, analyze the case, discuss various viewpoints, state your course of action and defend it ethically. Homework: research engineering ethics on the ASME and IEEE websites. On the ASME site do "Ethics for Students" and submit the worksheet. Read the IEEE Code of Ethics and the CS/ACM code of Ethics.
13	Analyze and discuss ethics in engineering practices using several scenarios involving an engineer faced with ethical choices.	
14	Intro to Programming 1. QBASIC environment 2. Programming basics & flowcharts 3. Variables 4. Input/Output commands 5. Calculations 6. Decisions 7. Loops (IF THEN, FOR NEXT, DO)	Lab: Develop a flowchart for a given process.  Lab: Develop pseudocode for a given process.  Lab: A BASIC program. Commands, syntax, pseudocode, flowcharts and troubleshooting.  Lab: Program control and looping.  Lab: Celsius to Fahrenheit conversions.  Lab: Machine control with a Basic Stamp.  Homework: Read : <a href="#">What is Programming</a> <a href="#">What is a Programming Language</a> <a href="#">What is Psuedocode</a> <a href="#">Flowcharting</a>
15	Continue programming	

N. Course Assignments:

1. Videos
2. On-line reading assignments
3. Handouts
4. Laboratory exercises

O. Recommended Grading Scale:

<b>NUMERIC</b>	<b>GRADE</b>	<b>POINTS</b>	<b>DEFINITION</b>
93–100	A	4.00	Superior
90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
83–86	B	3.00	Above Average
80–82	B-	2.67	Above Average
77–79	C+	2.33	Average
73–76	C	2.00	Average
70–72	C-	1.67	Below Average
67–69	D+	1.33	Below Average
63–66	D	1.00	Below Average
60–62	D-	0.67	Poor
00–59	F	0.00	Failure

P. Grading and Testing Guidelines:

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Q. Examination Policy:

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R. Class Attendance and Homework Make-Up Policy:

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S. Classroom Expectations:

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T. College Procedures/Policies:

Attendance Requirements: All students are required to attend all scheduled classes and examinations. Each faculty member has the right to establish regulations regarding attendance that he/she considers necessary for successful study.

Students who do not attend classes may be administratively withdrawn from those classes. However, failure to attend classes does not constitute withdrawal, and students are expected to process a formal withdrawal through the Student Records Office in Kee Hall.

Student engagement requirements:

Student engagement is based on the “active pursuit” of learning which can be measured by class attendance, class participation (in class or online), taking required quizzes/examinations, and submission of work assignments or papers. Student engagement consists of a student attending at least 60% of the class sessions (there should be attendance throughout the term) and/or completing 75% of the assignments listed on the syllabus at the midpoint in the term. Exceptions can be made when there is on-going communication between the student and faculty member. The communication must be documented and the faculty member and student must be in agreement regarding the exception. Students not meeting the expectation will be administratively withdrawn from class. If a student believes he/she was administratively withdrawn in error, he/she may file an appeal. Being administratively withdrawn may have program and financial aid implications.

Academic Misconduct is any activity that tends to compromise the academic integrity of the college, or subvert the educational process. Examples of academic misconduct include, but are not limited to:

1. Violation of course or program rules as contained in the course syllabus or other information provided to the student; violation of program requirements as established by departments and made available to students.
2. Plagiarism including, but not limited to, submitting, without appropriate acknowledgment, any written, visual or oral material that has been copied in whole or in part from the work of others (whether such source is published or not) even if the material is completely paraphrased in one's own words. This includes another individual's academic composition, compilation, or other product, or a commercially prepared paper. Plagiarism also includes submitting work in which portions were substantially produced by someone acting as a tutor or editor.

Such practices constitute plagiarism regardless of motive. Those who deny deceitful intent, claim not to have known that the act constituted plagiarism, or maintain that what they did was inadvertent are nevertheless subject to penalties when plagiarism has been confirmed.

3. Cheating and dishonest practices in connection with examinations, papers and projects, including but not limited to using unauthorized notes, study aids or information on an examination; obtaining help from another student during an examination; taking an exam or doing work for another student; providing one's own work for another student to copy and submit as his/her own; or allowing another student to do one's work and then submitting the work as one's own. Also included would be altering a graded work after it has been returned, then submitting the work for re-grading; or submitting identical or similar papers for credit in more than one course without prior permission from the course instructors.
4. Fabrication including but not limited to falsifying or inventing any information, data or citation; presenting data that were not gathered in accordance with defined appropriate guidelines, and failing to include an accurate account of the method by which data were collected.
5. Obtaining an Unfair Advantage including, but not limited to stealing, reproducing, circulating, or otherwise gaining access to examination materials prior to the time authorized by the instructor; unauthorized collaborating on an academic assignment; taking, hiding or altering resource material; or undertaking any activity with the purpose of creating or obtaining an unfair advantage over another student's academic work.
6. Aiding and Abetting Academic Dishonesty including, but not limited to providing material, information or other assistance to another person with the knowledge that such aid could be used in any of the violations stated above, or providing false information in connection with any inquiry regarding academic integrity.
7. Alteration of Grades or Marks including but not limited to, action by the student in an effort to change the earned credit or grade.

In addition, cases of academic dishonesty may involve photocopied materials. Materials used may fall under the Copyright Act. Violations of said Act may subject the user and/or the College to sanctions.

Statement on Disabilities: Any student who requires reasonable accommodations related to a disability should inform the course instructor and the Coordinator of Specialized Services (Room 138 in Kee Hall; phone 419-755-4727).

Students who encounter difficulty in any of their courses are encouraged to visit the Tutoring Resource Center (Room 119 in Fallerius Technical Education Center) for tutoring assistance, and the Student Success Center (Room 136 in Kee Hall) for academic assistance, advising services, referrals for personal counseling and Learning Disability (LD) Testing.

Statement on Withdrawals: As a student, you are expected to attend class. If you are unable or choose not to attend class, or if for whatever reason you are unable to keep up with the requirements of a course, you need to officially drop the class at the Student Records Office. Refund dates and withdrawal dates will vary slightly from term to term. Contact the Student Records Office for applicable dates. Additionally these dates are posted on the academic calendar available on the college's website, [www.ncstatecollege.edu](http://www.ncstatecollege.edu), under the Academics heading on the home page and are available at the Student Records Office in Kee Hall,. Students should go to the Student Records Office (Room 142 in Kee Hall) to process their withdrawal from any class.

If you choose to walk away from your class without officially withdrawing from it, the faculty member teaching the class must grade your classroom performance on the material available to him or her. This normally results in an "F" grade. An "F" grade can lower your grade point average considerably depending on the total credits accumulated.