



WEBER STATE UNIVERSITY

CONTINUING EDUCATION CONCURRENT ENROLLMENT

MET 1000 Syllabus

WSU Department Name

Mechanical Engineering Technology

WSU Course Number & Listing

MET 1000: Introduction to Mechanical Engineering Technology and Design (4 Credit Hrs. 3 Credit Lecture + 1 Credit Lab) (POE-PLTW)

High School: Nuames

WSU Concurrent Adjunct Instructor: Mr. Reid

High School Course Name: Principles of Engineering

(Attention: Contact the College or University you wish to attend to make sure that these Concurrent Enrollment courses will meet your goals for fulfilling General Education requirements or will count toward your chosen major).

Concurrent Adjunct Instructor's Office Hours

M-F 7:30-8 am, 2:40-3:10 pm

Concurrent Adjunct Instructor's email

RobertReid1@weber.edu

Prerequisite Courses

DET 1010 (IED)

WSU Course Description

This introductory course explores the wide variety of careers in engineering and technology and covers various technology systems and manufacturing processes. Using activities, projects, and problems, students learn first hand how engineers and technicians use math, science, and technology in an engineering problem-solving process to benefit people. The course also addresses concerns about social and political consequences of technological change. The department accepts Project Lead The Way curriculum (PLTW).

Note: The PLTW Introduction to Engineering Design curriculum, text, material and objectives will also be covered in this course.

WSU Course Objectives

The PLTW curriculum will be used to meet both department and PLTW objectives. Students will learn key concepts of visual communication to design and create tables, charts, and graphs to illustrate data.

Project Lead The Way National Standards (PLTW): students will:

- ✓ Have an understanding of engineering and be able to identify engineering achievements through history.
- ✓ Be able to identify problems for engineers to solve in the future.
- ✓ Be able to define attributes associated with being a successful engineer.
- ✓ Understand that an engineering team must work together to solve problems, with each team member having individual and collective responsibilities.
- ✓ Understand how social, environmental and financial constraints influence the engineering process.
- ✓ Have an understanding of the different types of engineering fields.
- ✓ Understand the professional and legal responsibilities associated with being an engineer.
- ✓ Research and discover the educational requirements to become an engineer.
- ✓ Investigate and engage in meaningful activities; become independent learners; make their own connections between posed questions and prior learning; use real life technologies; obtain ownership of their learning; and exhibit growth in areas often ignored: social and life skills, self-management skills and the ability to learn on one's own.

WSU Required Textbook & Materials

PLTW Text and material

Course Equipment

Weber State computer login \$30 (New students)
Email with cloud storage (Provided)
Pen (blue, fine tip) (Recommended)
Pencils (mechanical 0.5mm) (Recommended)
You Tube video access
Engineering Notebook (Provided)
Vex Robotics (Provided)

Course Administration

Lectures will concern the body of knowledge surrounding engineering and technical design. Demonstrations will cover specific operations and techniques. Students are expected to be at all class sessions (see Excused Absences policy below). If a student has to miss a lecture or a demonstration, permission for an excused absence must be granted by Nuames administration. **It is the responsibility of the students to secure all materials and information presented in class, even with an excused absence. Excused absences must be approved by Nuames Administration.** Lectures will not be repeated. Lectures may be taped recorded with the professor's permission.

Attendance Policy

- Absences CAN effect student grades if they do not understand the material or are not aware of changes to the class that can include (but are not limited to) the scheduling of quizzes, exams, assignments, projects, and extra credit. The instructor has the right to alter the course at his own discretion, so students missing class may not be aware of important information.
- Students are responsible for the body of information in the lectures, labs, and assigned reading materials. Students who would like a lecture to be repeated can make arrangements with the instructor to meet in the morning. Similarly, makeup tests and quizzes will only be given if an absence is excused. If a student misses a class, it is up to them to make sure they acquire the relevant material from another source. Please send the instructor an e-mail asking to explain the contents of a missed lecture or lab.
- Students are expected to attend class for mandatory events such as tests and quizzes, and it is up to the individual student to know when those events are. Ignorance of these events is not an excuse, and any student who wants current information is expected to attend class.

Outside Work

Outside work will be absolutely necessary. Students will NOT be able to do well in this course if they work only in regularly scheduled class sessions.

WSU Grading:

93% - 100% = A	80% - 83% = B-	67% - 69% = D+
90% - 92% = A-	77% - 79% = C+	63% - 66% = D
87% - 89% = B+	73% - 76% = C	60% - 62% = D-
84% - 86% = B	70% - 72% = C-	0% - 59% = E

Grading:

Final Exam	20%
Tests / Projects	60%
Presentations	10%
Class participation and behavior.	10%
Engineering Notebook	Extra Credit
Homework	Extra Credit

Exams:

Tests will cover material from the lecture, demonstrations, and laboratory portions of the course and be administered during the regularly scheduled lecture period. The module assessments will be a comprehensive assessment of both theoretical (book) and applications (Vex Robotics) at the end of each module. The final comprehensive assessment will be a collection of questions taken from each of the module assessments and be given at the appropriately scheduled time.

Course Projects

Students will be expected to successfully complete multiple projects throughout the course of the semester. Projects will be graded on professionalism, execution, creativity, technical merit, and communicative value.

Presentations

Presentations will include a portfolio of assignments, accompanied with an oral presentation.

Participation

Students are encouraged to participate in learning activities. Failure to participate could affect a student's grade equal to, but not more than 10% of total grade.

Engineering Notebook

Each student will keep a record of his/her work in an engineering notebook. This notebook will be submitted at the completion of a unit to be graded for extra credit towards the next project or test.

Homework

Each homework assignment will be graded for extra credit. The extra credit will be applied to the next project or test.

Late Work

Late work will be accepted if accompanied by an excused absence from Nuames Administration. If not excused, late work will not be accepted.

Subject Mastery

If a student receives a score less than a 75% he/she can meet with me to improve his/her grade. Points are earned when a student teaches all concepts from the test to the teacher. If the student shows mastery of the topics from the test, the student's grade will be changed to a 75%. If a student desires to increase his/her grade more than the 75%, extra credit assignments will be assigned. Retaking a test is not allowed.

Computers

All students are required to sign an Acceptable Use Policy before using any computer in the classroom. If you are found to be in violation of that policy, you will be taken off the computer and will have to do bookwork, the incident will be noted and your parents will be contacted. If there is a second violation, you will be referred to the

principle for further action and your computer privileges will be revoked until the matter is resolved.

Calendar of Course Content:

Unit 1 – Definitions and types of Engineering

Engineers as Problem Solvers
The Engineering Team
Careers in Engineering
(**Research Report**) Specific to Fields of Engineering

Unit 2 – Communication and Documentations

Sketching
Technical Writing
PowerPoint Presentations
Public speaking
Journaling

Unit 3 – The Design Process

Problem Solving Process
Design Briefs
Major Team Design Exercises/Activities
Patent Process System

Unit 4 – Engineering Systems

Mechanisms
Thermodynamics
Fluid Systems
Electrical Systems
Control systems

Unit 5 - Statics and Strength of Materials

Statics
Strength of Materials

Unit 6- Materials and Materials Testing in Engineering

Materials and materials Testing
Categories of Materials
Properties of Materials
Manufacturing process
Quality Control
Material Testing

Unit 7 – Engineering for Reliability

Reliability
Case Study

Unit 8 – Kinematics

Linear Motion
Trajectory Motion

WSU Course Evaluation:

As a concurrent student, you are given the privilege of evaluating this course. This is an anonymous evaluation which allows you an opportunity to express your opinions of the course and the instructor.

WSU Student Code of Conduct:

WSU Code of Conduct <http://www.weber.edu/deanofstudents/judicial.html>

Concurrent Enrollment www.weber.edu/concurrent/students/CodeOfConduct.asp

Students with Disabilities <http://www.weber.edu/ssd>

Nuames Student Handbook Policies 2016-2017

Student's Name: _____

This syllabus needs to be read and signed by the student and a legal guardian.

Syllabus Agreement Form

We, student and guardian, have read, and acknowledge, the syllabus for this course, MET 1000. We acknowledge that the student is responsible for the assignments, deadlines, and policies contained in the syllabus, as well as any other activities assigned to the class. We understand what is expected of the student as a member of the learning community. Due to the complexity of this subject and unpredictable dynamics of the class, we understand that some of the topics and projects may change, and take more or less time. It is important that the student makes every effort to be in class every day.

PARENTS: I have read this syllabus and understand what is expected of my student. I know that questions, comments, and suggestions are welcomed and encouraged.

Student Signature / Date

Parent/Guardian's Signature / Date

PARENTS:

I acknowledge that my student is beginning his/her permanent college transcript when enrolled in a concurrent enrollment course and that he/she will receive a high school grade as well as a college grade. I also understand that it is my responsibility to ensure my student is registered for his/her concurrent enrollment course by the following deadlines.

Admission Deadline: 9/9/2016

Registration Deadline: 9/16/2016

Parent/Guardian's Signature / Date

Emergency Contact Information

Student's Email: _____

Parent/Guardian's Name: _____

Parent/Guardian's Home Phone: _____

Parent/Guardian's Work Phone: _____

Parent/Guardian's Cell Phone: _____

Parent/Guardian's Email: _____

Circle preferred contact method: Phone Email

If you circled phone, please indicate the best time and place to call:
