

**Oklahoma State University Institute of Technology**  
**Face-to-Face Common Syllabus**  
*Fall 2017*

**SEPP 2443 Boilers and Prime Movers 60191 - SEPP 2443 - 0**

Students expand their knowledge of how plant systems and equipment interact and gain competency in the theory of boilers used in the generation of electricity. Topics include the classification, design, and construction of Boilers, Combustion Turbines, and Steam Turbines. Theory

**Course Purpose:**

Is to expand students' knowledge of Boilers and Prime movers.

**Type of Course:** Theory

**Credit Hours:** 3; Total clock hours of theory per semester: 48;

**Class Length:** 2<sup>nd</sup> half Fall 2017

**Class Days and Times:** MWF 9:30-11:25

**Prerequisites:** None listed.

**Instructor Name:** Terry Hanzel

**Instructor Phone:** (918) 293-5148

**Office:** Bldg 400 Rm 101M

**Instructor Email:** [thanzel@okstate.edu](mailto:thanzel@okstate.edu)

**Contact:** My preferred method of contact is email, text, or call. Please allow 24-48 hours to return your correspondence during the normal work week. Cell # is 918-470-4423

**Instructor's Office Hours:** Posted outside my office. Cell# 918-470-4423

**School Name:** School of Energy

**School Main Phone:** 918-293-3812

**REQUIRED TEXT, REFERENCES, AND MATERIALS**

**Texts:**

GPI online training provided by OG&E no purchase necessary.

High Pressure Boilers 5<sup>th</sup> Edition *Steingress, Frost, Walker*

ISBN 978-0-8269-4315-6

There will be some PDFs that you will have access to and may want to print them off and place in a notebook.

**References:**

NA

**Materials:**

Access to a computer to open and run the CD provided with the text.

Thumb drive, clipboard, notebook (1"-1.5" D-ring), index cards,

Department T-shirt or gray OSU T-shirt, Hard Hat, Safety Glasses, safety toe boots, (for site visits, access to digital camera (Phone). Whatever you need to download photos from your camera to a computer.

**Uniform/Tools:**

See Materials list for class for uniform. Suggested but not required tools include 8" Crescent wrench, 12" Channel locks, Straight and Phillips head screwdriver (3-4" shank), tool bag.

**Estimated Cost for Materials:** \$ 40

**Estimated Cost for Uniform/Tools:** \$ 110.

**Upon completion of the course, students should:**

<b>Course Objectives</b>	<b>Assessment of Objectives</b>
The student should be able to:	
Demonstrate a basic competency of the need and usage of Turning Gears on a turbine.*	Assignments, Exams
Demonstrate the skills of discussing, analyzing, and interpreting a GT Water Wash.*	Assignments, Exams
Identify the primary function of equipment used in a power plant.*	Quizzes, Assignments, Exams
Demonstrate an understanding of shutting down a Turbine.*	Quizzes, Assignments, Exams

Aspects of the course objective assessments may be used in the university's assessment of student learning. If applicable, an asterisk (\*) above indicates this assignment is used in the university assessment program.

**COURSE ACTIVITIES**

In this course students will:

*(Please list the specific activities in the course)*

- Participate in class discussions and activities.
- Participate in class and submit reports for evaluation.
- Complete outside project assignments and submit technical reports for evaluation.
- Integrate internet-searches into research assignments, homework, and reports.
- Participate in individual and group presentations.
- Compile a portfolio of work produced.
- Take examinations and quizzes.

**EVALUATION - GRADES WILL BE BASED ON THE QUALITY AND COMPLETION OF THESE TASKS:** (NOTE-Please indicate the course specific evaluations. List assignment(s) used in the university's assessment of student learning as separate line items and marked with an asterisk.)

Presentations/Projects	15%
Quizzes	25%
Exams	25%
OGE Learn Quizzes	10%
Final Exam	25%
<b>Total</b>	<b>100%</b>

<b>OSUIT Grading Scale</b>
A = 90%-100%
B = 80%-89%
C = 70%-79%
D = 60%-69%
F = 59% & below

\*The student's grade for this assignment will be used in the university's assessment of student learning. A 70% competency or higher receives a Pass rating. This Pass/Fail rating is independent of the student's course grade.

Daily and/or weekly quizzes, small weekly assignments and similar type projects: Normal return time to student by next class meeting or no later than one (1) week.

Extensive assignments, large lab projects, extensive quizzes, exams and similar type projects: Normal return time to students in one (1) to two (2) weeks.

**RECOMMENDED STUDENT COMPETENCIES/SKILLS**

It will be helpful if the student has basic computer skills (i.e. saving files, downloading files, uploading files, organizing data). A basic understanding of MS Word, PowerPoint, and Excel. Be able to take a clear photo.

**AUTHORIZED TOOLS**

*This is not talking about hand or power tools, but learning tools such as notes, textbooks, or internet access during activities.* Will be determined by the instructor for each activity

**LATE WORK**

- **Planned Quizzes, Research/Homework, Labs/Project, Unit Exams and Final Exam:** Submitting your work early is always acceptable. If you know in advance that you will miss an exam, special arrangements may be possible for hardship circumstances. Make-up exams will be a different exam than the one given on exam day. *No late work will be accepted for full credit.*
- **In-class Quizzes** cannot be made-up.
- **Research/homework** submitted on the due day is considered to be on time. No late submissions are accepted for full credit.

## **TESTING**

You are expected to take exams on the scheduled date. It is up to the instructor if a make-up exam will be given. Make-up exams will be a different exam than the one given on exam day.

## **OTHER LAB AND CLASSROOM POLICIES**

### **No Show, No Call Policy**

If you have a medical or personal problem that necessitates missing class, please contact me. It is the student's responsibility to show up to class prepared for the lesson or activity.

A “No Show, No Call” in the work place will cost you your job and damage your reputation in the industry. Therefore a soft skill that we enforce is that you have to notify the instructor if you are going to miss class. Notification must be made before the class or activity is scheduled to begin. Any “No Show, No Call” will result in a 3 point reduction in your final grade. Repeated “No Show, No Call” is grounds for administrative removal from this class.

The OSUIT Attendance Policy is the expectation of the class and will be followed.

## **SYLLABUS ATTACHMENT**

View the Syllabus Attachment, which contains other important information, by visiting [http://osuit.edu/center/student\\_syllabus\\_information](http://osuit.edu/center/student_syllabus_information)

<b>Course Schedule of Topics</b>
<b>Topic</b>
Steam Boilers and Systems
Steam System Fittings and Accessories
Feedwater Systems
Combustion Equipment
Fuels and Combustion
Combustion and Boiler controls
GE 7FA CT
Steam Turbine

Topics taught will overlap and the schedule is subject to change at instructor discretion and access to industry resources.