Information Guide

Power Plant Technology

Associate in Applied Science Degree

School of Energy Technologies

http://go.osuit.edu/academics/energy_technologies/power_plant/

OKLAHOMA STATE UNIVERSITY

INSTITUTE OF TECHNOLOGY

6/27/2016

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Power Plant Technician Program

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Power Plant Technology

PROGRAM OBJECTIVE

Students in the Power Plant Technology program develop a broad understanding of power plant mechanical and electrical equipment and are prepared for an entry-level career as a power plant operator in oil, natural gas, and clean coal fired power plants.

PROGRAM PURPOSE

Through lectures, labs and paid internships, students acquire the foundational knowledge base in areas of professional work ethic, power plant operations and technology, and industry regulatory compliance. The technical training in the Power Plant Technology program includes the science, design, technology and operation of power plant equipment and systems. The foundation knowledge and experience has been designed around the areas of safety; electrical power, generative and distributive; instrumentation and control; prime movers; mechanical systems; water chemistry and steam generation; environmental air, water and waste requirements; reliability regulations; and prudent business practices. Upon graduation students have made significant progress toward qualification as an entry level operator in a combined cycle or coal fired power plant. Skilled operators are always in demand and are candidates for advancement in the industry. A disciplined work ethic and experience are key to success and this program. Industry partnerships with paid internships provide a unique opportunity for students to demonstrate their work ethic and experience to a potential employer.

PROGRAM STRUCTURE

The two-year, six semester program incorporates two semesters of on campus classes and labs followed by a full semester paid internship. The students then return to campus for three semesters of classes and labs.
All tuition, fees, textbooks, travel expenses and housing costs are the responsibility of the student.

PROGRAM CURRICULUM

The curriculum for this program was developed with the support of OSUIT's Power Plant advisory committee. The committee represents the power generation and distribution industry with members from companies and operating power plants in the region. The committee has determined and periodically reviews the skillsets necessary for a plant operator, as well as provides real world duties, information and equipment to support the curriculum. Faculty and staff of the OSUIT then develop and implement the courses and labs needed by the student to develop the established skillsets. Faculty of the program are themselves former participants in the industry with extensive experience in power plant operations.

PURPOSE OF THE INTERNSHIP

The internship allows students to apply, in a real world setting, what they have learned during the previous classroom/lab sessions. In addition, students become familiar with the power plant environment, its organizational structure, and the competencies that are expected of a professional operator.

STUDENT QUALIFICATIONS

Prospective students must be:

1. 18 years of age (or older) by the time of the first internship.
2. High School Graduate or equivalent.
3. Able to meet OSU Institute of Technology, Power Plant Technology Program admission and academic requirements.
4. Able to meet Power Plant hiring requirements.
5. Possess a valid driver's license and maintain an employable driving record.
6. Willing to take a drug test if requested by power plant sponsor.
   (NOTE: for Power Plants this is a requirement for employment)

Tobacco use in University Buildings and Grounds

It is the intent of Oklahoma State University to promote the health, well-being and safety of all students, faculty, staff and visitors. As such, effective July 1, 2010, Oklahoma State University Institute of Technology is designated as a tobacco-free environment. Smoking and the use of all tobacco products are prohibited. Tobacco use is even prohibited in vehicles on grounds owned or under the control of Oklahoma State University.

Residential Life will designate a limited number of facilities that will be exempt from this policy. Residential Life officials charged with oversight of the exempt areas of campus where tobacco use is permitted must adopt and post internal policies.

ADMISSIONS CHECKLIST

☐ Complete and submit an OSU Institute of Technology Application for Admission on line at: https://admissions.osuit.edu/apply/ or print, complete and mail the form provided at: http://www.osuit.edu/academics/forms/admissions_packet.pdf

☐ Obtain a Personal Identification Number (PIN) to sign online at www.pin.ed.gov. (If you are a dependent student, a parent will need a PIN as well) Complete the Free Application for Federal Student Aid (FAFSA) available at www.fafsa.ed.gov. **The OSUIT school code is 003172.** Once our office receives your information, we will notify you if additional information is needed and/or send your award letter.

☐ Submit official high school transcript/GED

☐ Submit ACT or SAT scores.

☐ COMPASS testing may be required for placement purposes (all students will be required to take compass assessment unless they can prove proficient in a subject area with ACT sub scores in math, reading, writing or science scores of 19 or above or have transfer credits. Compass testing is a computer generated assessment administered through the Assessment Center at OSUIT. (918-293-5254) http://www.osuit.edu/academics/assessment_center.php
Compass sample questions at: http://www.act.org/compass/sample/
Additional Compass Skills Reviews at: http://www.osuit.edu/academics/assessment_center.php

☐ Provide a copy of Immunization records or complete the Immunization Record Form or the Certificate of Exemption. http://www.osuit.edu/campus_community/campus_health/

☐ Residential Life: Complete room and board contract – Single and Nontraditional Students Room and Board Contract for single students, Family Housing University apartments Contract if you plan to have your family with you at OSUIT. (918-293-4939)
http://www.osuit.edu/campus_community/residential_life/prospective_residents.php
Students making application for campus housing are encouraged to apply early. To reserve space in campus housing students must make a deposit of $150 ($500 for family apartments) through the Bursar's office. (918-293-5226)

☐ Veterans need to visit with the OSUIT Veteran Service Office. (918) 293-4972.or email http://go.osuit.edu/military/contact

☐ Complete enrollment through the School of Energy Technology

☐ Have your student ID card made. Take your class schedule to the front desk of the Grady W. Clack Center.

☐ Visit MyOSUIT and activate your O-Key account. This allows you to access your OSUIT email account, check your grades, view your schedule, modify your enrollment, pay your bill, access the online classroom and receive OSUIT notifications/alerts this gives you 24/7 access to your information. www.osuit.edu/my_osuit

ADMISSION OF TRANSFER STUDENTS

View admission criteria at: http://www.osuit.edu/admissions/admissions_requirements.html

Important Dates

January, 2016

- 2016-2017 Financial Aid Applications Are Available
- Oklahoma State University Institute of Technology Scholarship Applications Available
- Oklahoma State University Institute of Technology Admission Applications Available

January 31, 2016

- Families Receive W-2 Forms And Begin To Prepare Tax Returns So Financial Aid Applications Can Be Completed.

February 1, 2016

- Students Begin Submitting Oklahoma State University Institute of Technology Admission Applications
- Begin Completing Free Application For Federal Student Aid (FAFSA)
- Students Should Be Making Plans To Take The ACT or SAT Test

May 27, 2016

- Enrollment Begins For Fall Term and continues through September 6

September 6, 2016

- Move-in Day for Freshman Power Plant Technology Students

September 7, 2016

- First Day of Classes for Freshman Power Plant Technology Students

December 16, 2016

- Last Day of on Campus Classes for Freshman Power Plant Technology Students

For More Information please call:

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Terry Hanzel.....(918) 293-5148
Bob Pope.....(918) 293-5005
Paula Harrold.....(918) 293-3812
Student Financial Services.....(918) 293-4684
Admissions Office.....(918) 293-4680

RESPONSIBILITIES OF PARTICIPANTS

OSU INSTITUTE OF TECHNOLOGY

1. Provide faculty dedicated to the Power Plant Technology Program
2. Provide necessary time to initially train and update the faculty
3. Provide facility dedicated to the Power Plant Technology Program; classrooms, labs, etc.
4. Provide advisement for Power Plant Technology students.
5. Maintain up-to-date tools and equipment.
6. Grant the Associate of Applied Science degree in Power Plant Technology to graduates.
7. Inform sponsoring companies of student progress.
8. Assist companies with student selection and recruitment.
9. Work with the companies to assure involvement in internships.
10. Conduct student visitations during internships.
11. Establish a Power Plant Technology Program Advisory Committee.
12. Schedule Advisory Committee meetings.
13. In general, oversee student recruitment and selection process.

POWER PLANT TECHNOLOGY COMPANIES

1. Agree to act as a sponsoring company.
2. Appoint an in-company Coordinator.
3. Recruit, interview and select prospective student(s)
4. Provide company coordinated internship experience in accordance with the program schedule for the duration of the curriculum.
5. Provide related work/learning experiences that supplement the students' most recent instruction.
6. Agree to pay the student during periods of internship.
7. Provide any other benefits in a manner consistent with other company employees.
8. Assist in obtaining equipment and training aids.
9. Participate in the Advisory Committee meetings.

STUDENT

1. Obtain and maintain a Power Plant Technology Sponsor for internships.
2. Provide the sponsoring Power Plant Technology Company with responsible and productive work effort.
3. Participate in all learning activities at scheduled times.
4. Maintain academic standards and adhere to academic policies (minimum 2.0 GPA) according to OSU Institute of Technology policy.
5. Maintain company attendance standards.
6. Be responsible for program cost: tuition, fees, books, tools, housing, etc.
7. Wear approved clothing, safety glasses and recommended personal safety equipment during campus class/labs and company internship experiences.

STUDENT SELECTION PROCEDURES

1. Students who wish to become a member of the Power Plant Technology program should make application to OSU Institute of Technology early in the spring semester (January – March) if possible. This will allow time for processing financial aid packages, identification of preparatory class needs, sponsorship acquisition, etc. The application process includes the following:

   A) Complete OSU Institute of Technology Application for Admission.
   B) Comply with OSU Institute of Technology Admission Policies.
   C) Complete the student assessment process.
   D) Remove preparatory class needs prior to the start of the program classes.

FINANCIAL ASSISTANCE

Students deciding to be part of the Power Plant Technology program may have a need for financial assistance. Students involved in the program have the opportunity to earn while they learn during the internship portion of the program.

Additional financial aid, through loans or grants, for tuition, books, tools, on-campus room and board, etc., may be available through various financial assistance programs. Students needing financial assistance are encouraged to complete the applications for financial aid in the first quarter of each year. Following application submittal, allow an 8-10 week period for processing. Early application assures availability of funds, if qualified, and allows the Financial Aid Office to prepare a realistic financial aid package.

Financial Aid information may be obtained by calling the Student Financial Services Office at (918) 293-4684.

Note: Some tools may be required for the Power Plant Technology program are considered an educational expense and should be included in education costs when applying for student financial aid.

**If zero level courses are taken, a Remedial Supplemental Fee of $18.50 per credit hour will be charged.

ESTIMATED Cost per Semester

http://www.osuit.edu/academics/new_tuition.html

2016-2018 - Estimated Cost Per Semester

Fall 2015 - Semester I		
	$1,926.00	Two Bedroom/One Bathroom Suite
	$150.00	$150.00 single unit, $500.00 family unit (refundable)
	$1,299.00	20 Meal Plan
	$2,720.00	Tuition & fees $1170.00/ch (16 credit hours)
		This is in-state tuition rate
	$550.00	Books (approximate per semester)
	$6,645.00	Estimated total semester educational expenses
Spring 2016 - Semester 2		
	$1,926.00	Two Bedroom/One Bathroom Suite
	$1,299.00	20 Meal Plan
	$2,550.00	Tuition & fees $170.00/ch (15 credit hours)
		This is in-state tuition rate
	$550.00	Books (approximate per semester)
	$6,325.00	**Estimated total semester educational expenses**
Summer 2016 - Semester 3		
	$2,040.00	Tuition & fees $170.00/ch (12 credit hours) Internship
		This is in-state tuition rate
	0	Books (approximate per semester)
	$2,040.00	**Estimated total semester educational expenses**
Fall 2016 - Semester 4		
	$1,926.00	Two Bedroom/One Bathroom Suite
	$1,299.00	20 Meal Plan
	$2,720.00	Tuition & fees $170.00/ch (16 credit hours)
		This is in-state tuition rate
	$550.00	Books (approximate per semester)
	$6,495.00	**Estimated total semester educational expenses**
Spring 2017 - Semester 5		
	$1,926.00	Two Bedroom/One Bathroom Suite
	$1,299.00	20 Meal Plan
	$2,720.00	Tuition & fees $170.00/ch (16 credit hours)
		This is in-state tuition rate
	$550.00	Books (approximate per semester)
	$6,495.00	**Estimated total semester educational expenses**
Summer 2017 - Semester 6		
	$1,926.00	Two Bedroom/One Bathroom Suite
	$1,299.00	20 Meal Plan
	$2,550.00	Tuition & fees $170.00/ch (15 credit hours)
		This is in-state tuition rate
	$550.00	Books (approximate per semester)
	$6,325.00	**Estimated total semester educational expenses**
	$34,325.00	**Estimated total educational expenses**

Cost of tuition and fees, room and board may change after Oklahoma State Regents meet in July.

NON RESIDENT ACADEMIC SCHOLARSHIP

Choosing OSU Institute of Technology for your education sets you on the right path toward a promising career. As the University of Jobs, OSUIT is committed to making the transition from classroom to career seamless while at the same time offering an affordable education that will pay you dividends upon graduation.

As Oklahoma's only university of applied technology, OSUIT prepares you for a high return on your investment:

- Nearly 100% career placement rate in technical degree programs
- Low tuition costs, a wide variety of additional scholarship opportunities and financial aid available
- Paid internships that help pay for school as you go and often lead to full-time employment

In an effort to keep out-of-state costs low, OSUIT's Nonresident Academic Scholarship helps offset your educational expenses, making it the most affordable option in the region.

OSUIT Scholarship Award by Credit Hour

Nonresident Incoming GPA	Total Tuition & Mandatory Fees		Scholarship per credit hour		Student portion per credit hour
3.50 to 4.00	$357.00	-	$155.00	=	$202.00
3.00 to 3.49	$357.00	-	$145.00	=	$212.00
2.50 to 2.99	$357.00	-	$135.00	=	$222.00
2.00 to 2.49	$357.00	-	$125.00	=	$232.00

Calculations based on FY15 Undergraduate Tuition & Mandatory Fees. Number of scholarships awarded determined by availability of funding. Effective January 2014.

Scholarship is available to full-time OSUIT students and is renewable for a maximum of 6 consecutive terms. Credit hour award will be recalculated according to student's OSUIT GPA during the fourth term, potentially increasing scholarship funding.

Example: Incoming student Pistol Pete's GPA was 2.4, resulting in a scholarship of $125 per credit hour. At the end of the third term, Pete's GPA is 3.2, resulting in a scholarship increase to $145 per credit hour.

Contact OSUIT Prospective Student Services at *information@okstate.edu*, or call 1-800-722-4471 for full scholarship details.

The table below shows the additional non-resident costs and the estimated total program costs, assuming the student maintains the same GPA with the current Tuition and Fee rate

	Tuition & Fees only	Non-resident cost – Okla. resident cost	Estimated Total 6 Semester Program Cost
Oklahoma Resident tuition and fees	$15,130.00		$34,325.00
Non Resident with incoming GPA 3.50 to 4.00	$18,180.00	$3,050.00	$37,375.00
Non Resident with incoming GPA 3.00 to 3.49	$19,080.00	$3,950.00	$38,275.00
Non Resident with incoming GPA 2.50 to 2.99	$19,980.00	$4,850.00	$39,175.00
Non Resident with incoming GPA 2.00 to 2.49	$20,880.00	$5,750.00	$40,075.00

POWER PLANT COMPANY INFORMATION

How will the program benefit your company?

This program is your answer to the skilled operator shortage. It responds to the needs of Power Plant Technology companies for highly qualified, motivated and skilled operators. Operators who are...

1. Watching gauges, dials, or other indicators to make sure machinery is working properly.
2. Controlling operations of equipment or systems.
3. Repairing machines or systems using the needed tools.
4. Determining the kind of tools and equipment needed to do a job.
5. Determining causes of operating errors and deciding what to do about it.
6. Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
7. Using scientific rules and methods to solve problems.
8. Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
9. Performing mechanical repairs.

This program is a planned power plant personnel development program. It combines the resources of OSU Institute of Technology and regional power plants to build a true educational partnership! A partnership designed to focus on the success of your potential employee, the Power Plant Technology student. This program, along with additional experience and guidance helps you develop future Power Plant Operators.

It is cost-effective! The best news is that there is no required up-front cost for the power plant. Your investment is minimal. Here's why:

1. You select and supervise the student as a productive employee of your company. The internship occurs in your company, under your supervision and direction.
2. The student is responsible for the cost of tuition, fees, books and the required basic tool set.
3. You and the student agree on the wage rate during the internship experience. You are not required to pay them while they are attending classes at OSU Institute of Technology.
4. *Companies may elect to provide other scholarships, incentives or financial help to students, at your option.*

How are Power Plant Technology program students recruited?

OSU Institute of Technology will assist in recruiting students. It is the company's responsibility, however, to select the "right" student. You should actively recruit a student from your area. Some good sources are:

1. Current employees
2. Employees friends, families
3. Customers
4. High Schools
5. Vo-Tech Schools
6. FFA Chapters
7. VICA

Once you have identified a student you believe will be a good applicant, bring the student to visit the campus at OSU Institute of Technology to tour the facilities, interview with the faculty, complete assessment. Upon completion and with further discussion, a final decision should be made regarding sponsorship. It is also a good idea to offer the student some type of summer employment. This will allow both of you to verify that you have made the right decision, before the program begins.

What are the responsibilities of a participating company?

1. Indicate interest in becoming a sponsoring power company.
2. Recruit, interview and select prospective student.
3. Assign an in-company coordinator who will monitor the student during the internship.
4. Provide company coordinated educational work/learning experiences (internships) in areas of technical education that were just concluded at OSU Institute of Technology.
5. Pay wages to the student during periods of internship at the company. This will instill in the student a sense that their employment is necessary to the company and promote company loyalty.
6. Provide uniforms for the student, consistent with company policy.
7. Complete student evaluation forms during each internship.
8. Advise school of concerns or changes in student status with the company.

What is the wage rate for Power Plant Technology Students?

The rate of pay is negotiable and is between you and the student. Power Plant Technology students base their value to the company on two important factors; the quality of training that is provided while on internship at the company and prevailing wages. Successful people are motivated by a variety of things, but most expect to be rewarded in the form of an increase in salary. This is especially true when they are performing jobs well and continue to improve their skills and abilities. Power Plant Technology students are no different. A pay plan that rewards them for maintaining acceptable grades, doing good work, and improving productivity and efficiency is essential.

Power Plant Technology students understand that they are trainees, and do not expect to be paid a journeyman wage during the training program. However, many of the best students have bills to pay, and families to support. Please consider the student's situation to arrive at an acceptable starting wage, and when developing a progressing pay plan or an incentive schedule.

What can the company expect?

In today's increasingly competitive market, customer satisfaction and customer loyalty are the keys to success and survival. Where do you find the right employees? One answer is to attract and develop new operators through the Power Plant Technology Program.

At the completion of the Power Plant Technology Program, you have a potential employee that is familiar with you, your plant, and the equipment at the plant. You have selected individuals you want to hire and you have taught them your way of doing business. The objective of the Power Plant Technology Program is simple; to select the best people to work on the best equipment, and provide the best customer service possible.

INSTITUTE OF TECHNOLOGY

School of Energy Technologies

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(918) 293-3800
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www.osuit.edu

POWER PLANT TECHNOLOGY PROGRAM

Degree Awarded
Associate in Applied Science

General Requirements
89 Credit hours
2.0 Minimum Overall Grade Point Average

Typical Schedule

for

POWER PLANT TECHNOLOGY PROGRAM

Proposed Plan of Study
SEPP-166

Fall 2015 1st Semester - 16 Credit Hours

SEPP	1103	Fundamentals of Energy Industry
SEPP	1113	Intro to Electrical/Electronics
SEPP	1123	Introduction to Power Plants
SEPP	1133	Piping and Instrument Diagrams
MATH	**1513**	**College Algebra**
ORIE	**1011**	**College Strategies**

2nd Semester - 15 Credit Hours

SEPP	2423	Mechanical Systems
SEPP	1233	Power Plant Computer Applications
SEPP	2523	Water Systems and Processes
SEPP	1243	Capstone 1
ENGL	**1033**	**Technical Writing I or**
ENGL	**1113**	**Freshman Comp I**

3rd Semester - 12 Credit Hours

SEPP	1312	Internship

4th Semester - 16 Credit Hours

SEPP	2413	Compliance Regulations
SEPP	1223	Electrical Motors and Controls
SEPP	2403	Plant Operations
SEPP	2443	Boilers and Prime Movers
CHEM	**1314**	**General Chemistry I**

5th Semester - 16 Credit Hours

SEPP	2503	Balance of Plant
SEPP	2543	Plant Chemicals & Water Quality
SEPP	2553	Safety Competency & Qualification
SEPP	2563	Plant Controls & Permissives
POLS	**1113**	**U.S. Government**

6th Semester - 15 Credit Hours

SEPP	2623	Advance Plant Operations
SEPP	2633	Capstone 2
ENGL	**2033**	**Technical Writing II or**
ENGL	**1213**	**Freshman Comp II**
HIST	**1493**	**U.S. History Since 1865**
SPCH	**1113**	**Introduction to Speech**

Technical Course Descriptions

Semester 1

SEPP 1103 FUNDAMENTALS OF THE ENERGY INDUSTRY

Students gain a basic understanding of the Energy Industry. Focus is placed on basic equipment identification and function. Safety, OSHA, EPA, hazardous materials, and waste regulations are included. Tools, fasteners, pipe, pipe fittings, valves, tubing, tubing fittings and precision measurements are studied. Theory/Lab

SEPP 1113 INTRODUCTION TO ELECTRICAL/ELECTRONICS

A general survey of basic electrical technology. Terminology, tools and equipment, safety procedures, and fundamental electrical concepts are covered. Through hands on projects students see fundamental concepts demonstrated. The class develops practical skills in selecting circuit components, circuit construction, and measuring instruments. A basic understanding of series and parallel circuits, electromagnetic induction and application, and the configuration of the power grid is achieved. Theory/Lab Co-requisite: MATH 1513

SEPP 1123 INTRODUCTION TO POWER PLANTS

A survey of electric power generation and power plant systems and processes. Emphasis is placed on generating station facilities, power utility philosophy, organizational structure, communication, health and safety, and career paths. Students must have taken or be enrolled in Intermediate Algebra. Theory. Co-requisite: MATH 1513.

SEPP 1133 PIPING AND INSTRUMENT DIAGRAMS

Students develop proficiency in the reading, understanding, and application of system Piping and Instrumentation Diagrams. Students gain proficiencies in reading P&ID's, tracing systems, use of P&ID's for troubleshooting systems, and Lock-out/Tag-out. Also covered is safety programs and a basic understanding of OSHA regulations. Theory/Lab.

Semester 2

SEPP 2423 MECHANICAL SYSTEMS

Students gain competency in the practical use, operation, and maintenance of mechanical equipment related to power generation facilities. Topics include basic mechanics, fans, blowers, pumps valves heat exchangers, conveying equipment, bearings, and lubricants. Theory/Lab Prerequisite: SEPP 1133

SEPP 1233 POWER PLANT COMPUTER OPERATIONS

This course is an applied exploration of software and computer skills used in the Energy Industry. Students are taught the use and application of the operating system and programs for writing, communications, and data collection, organization and analysis. Topics include Spreadsheet development and PowerPoint presentation, as well as common work order management, Work Permit, Hot Work, Confined Space, LOTO, and Job Hazard Analysis form development, storage, and retrieval. Students will be introduced to communication, scheduling, and organizational skills through the use of email planning and scheduling programs. Theory/Lab

SEPP 2523 WATER SYSTEMS AND PROCESSES

Students gain competency in practical use, operation, and maintenance of various water systems typically found in power plant facilities. Topics include steam/water cycle, condenser and circulating water, cooling towers, feed water components and cycle operation, water treatment, and demineralization. Theory/Lab Prerequisite: SEPP 1133

SEPP 1243 CAPSTONE 1

The culmination of the Systems, Equipment, and Process portion of the program and preparation for the first full summer semester internship. Students research employability skills and prepare and critique job applications, resumes, interview skills and portfolios. During preparation of resumes and portfolios students discuss how to best present the skills acquired in the previous classes, as well as how to describe the safety training received in preparation for the summer internship at Power Plant facilities. Theory/Lab

Semester 3

SEPP 1312 INTERNSHIP

A cooperative agreement between industry and education allows students to utilize and refine skills previously learned in their educational process. All work is performed in accordance with industry standards and guidelines, and supervised by industry and school representatives. Lab. Prerequisites: faculty approval and a minimum 2.5 GPA.

Semester 4

SEPP 2413 COMPLIANCE REGULATIONS

Students gain competencies in the understanding and application of compliance regulations associated with the Power Generation Industry. Major focus is on NERC and Environmental compliance regulations. Theory. Prerequisite: SEPP 1133, SEPP 2423

SEPP 1223 ELECTRICAL MOTORS AND CONTROLS

Introduces the fundamental concepts of electrical motors and associated electrical controls. Topics include ladder diagrams, schematic diagrams, contactors, motor starters, control relays, timing relays, pilot control devices, AC/DC motors and related control devices. Upon completion, students should be able to properly select, install and troubleshoot motors and associated control systems. Theory/Lab. SEPP 1113

SEPP 2403 PLANT OPERATIONS

This class is designed as transition from a descriptive to an operational characteristic of a Power Plant. The focus is the operations of the Combustion Turbine, Steam Turbine and Generator. This includes the operation of auxiliary equipment associated with that large equipment. Theory/Lab

SEPP 1213 BOILERS AND PRIME MOVERS

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/Lab

Semester 5

SEPP 2503 BALANCE OF PLANT

This course teaches students to prepare the plant to synchronize to the power grid. Students learn the concepts of Steam Generation (boiler, condenser), Cooling (cooling tower, circulating water, and cooling water), Electrical Production (synchronization, transmission), and Environmental operations. Theory/Lab

SEPP 2543 PLANT CHEMICALS AND WATER QUALITY

This course covers the proper handling, storage, dosage, and analyzing of chemicals common to the Power Industry. Topics covered include plant permitting, and water chemistry related to, corrosion, corrosion control, boiler water, circulating water, makeup water, and wastewater. Students are taught in a lab setting to calibrate, operate, and maintain lab equipment. Emphasis is placed on following policies, procedures, and documentation. Theory/Lab Prerequisite: CHEM 1314

SEPP 2553 SAFETY COMPETENCY AND QUALIFICATION

This course is designed to provide students training that leads to qualifications and certifications for OSHA 10 or 30 (Industrial), First Aid and Safety, CPR, HAZWOPER, and Forklift & Man lift Operation. Theory/Lab

SEPP 2563 PLANT CONTROLS AND PERMISSIVES

A focused study on the instruments and systems used to operate Power Plant equipment and systems. Technology for pressure, temperature, flow, and level sensing and control is studied along with calibration and troubleshooting. Control loop integration with systems and related interpretation of documentation and human-machine interfaces is also explored. Theory/Lab

Semester 6

SEPP 2623 Advanced Plant Operations

Students gain the knowledge necessary to comprehend overall plant operations and respond to situations that call for corrective action as well as opportunities to enhance plant production. Students will learn skills and techniques for continuous improvement while learning and critiquing responses to operating scenarios out of the norm. Students will use existing knowledge of equipment, systems and instrumentation to understand the operation of an entire unit in a facility. Students study concepts related to commissioning, normal startup, normal operations, normal shutdown, turnarounds, and abnormal situations, as well as the process technician's individual and team role in performing tasks associated with these concepts within an operating unit. Theory/Lab

SEPP 2633 CAPSTONE 2

The culmination of the Power Plant Program and preparation for full time employment. Students complete understanding and achievement of program objectives, research employment opportunities, and prepare for job placement. During preparation of personal resumes and portfolios, students discuss how to best present the skills acquired in the previous classes, as well as how to describe the knowledge and experience received, in preparation for starting their career at a Power Plant facility. Theory/Lab

The companies listed below participate in Power Plant Technology program advisory meetings, career fairs, and/or have been internship sponsors.

AEP/PSO	https://www.psoklahoma.com/
AES	http://aes.com/
EthosEnergy	http://www.ethosenergygroup.com/
Green Country Energy	http://www.jpowerusa.com/projectsGreenCountry.html
Grand River Dam Authority	http://www.grda.com/
OG&E	https://oge.com
Oklahoma Municipal Power Authority	http://ompa.com/
Siemens	http://www.energy.siemens.com/hq/en/fossil-power-generation/
Tenaska	http://www.tenaska.com/power-generation/
Western Farmers Electric COOP	http://www.wfec.com/

FINANCIAL AID WEB SITES

Scholarship Resources on the Web

www.fastweb.com
www.collegefunds.net
www.wiredscholar.com/
www.freschinfo.com
www.mach25.com
www.scholarships.com/

Mapping Your Future – www.mapping-your-future.org
College Board Scholarship Search – http://apps.collegeboard.com/cbsearch_ss/welcome.jsp
Oklahoma Student Loan Authority (OSLA) – www.oslat.org

GRANTS AND SCHOLARSHIPS:

FAFSA Express – www.FAFSA.ed.gov
Missouri Higher Education Loan Association (MOHELA) – www.mohela.com
Oklahoma Guaranteed Student Loan Program (OGSLP) – www.ogslp.org
Oklahoma State Regents for Higher Education – www.okhighered.org
Oklahoma Tuition Aid Grant (OYAG) – www.otag.org

GENERAL INFORMATION:

Coalition for Student Loan Reform – www.cslr.org
National Association of Student Financial Aid Administrators – www.nasfaa.org
National Council of Higher Education Loan Programs – www.nchelp.org
Oklahoma State Department of Vo-Tech – http://www.okcareertech.org/
Project EASI – www.easi.ed.gov
The Financial Aid Information Page – www.finaid.org
US Department of Education – www.ed.gov