CASPER COLLEGE COURSE SYLLABUS
PTEC 1550, Foundations of Quality

Semester/Year: Fall 2015

Lecture Hours: 2 Lab Hours: Credit Hours: 2

Class Time: 9:30-11:50 Days: T

Room: EI 114

Instructor’s Name: Michael Malone

Instructor's Contact Information:
Office Phone: 268-3124
Cell phone: 251-4536
Office: EI 118
Office Hours: 11-12, 1-3 T. 11-12, 1-3 TH.
or by appointment
Email: mmalone@caspercollege.edu

Course Description: Quality introduces students to many process industry-related quality concepts including operating consistency, continuous improvement, plant economics, team skills and statistical process control (SPC).

Statement of Prerequisites: None

Program goals:
The process technology certificate provides the necessary foundational skills for participants interested in entering petrochemical, electric power, and oil and gas refining career fields. This certificate program is designed to be completed in a 16-week (one-semester) Monday through Friday format. Participants will be issued an OSHA General Industry 10-hour card upon successful completion. Students also gain valuable knowledge in mechanical, electrical, and process technology areas.

Goal: The purpose of this course is to provide an overview of or introduction to the field of Quality within the process industry. Within this course students will be introduced to many process industry-related quality concepts including operating consistency, continuous improvement, plant economics, team skills and statistical process control (SPC). At the conclusion of the course, participants will be able to:

Outcomes:
1. Demonstrate effective oral and written communication
3. Solve problems using critical thinking and creativity
4. Demonstrate knowledge of diverse cultures and historical perspectives
6. Use appropriate technology and information to conduct research
7. Describe the value of personal, civic, and social responsibilities
8. Use quantitative analytical skills to evaluate and process numerical data
9. Discuss the history of the quality movement in the United States and the state of the movement in the process industry today.
10. Describe the impact of quality on the organization’s economic performance.
11. Meet or exceed customer expectations.
12. Employ personal effectiveness techniques.
13. Understand and use effective system communication techniques to ensure operating consistency and reduce variability in the process.
14. Function as an effective team member.
15. Discuss the principles associated with process orientation and system thinking and theory.
16. Contribute to the establishment and success of a learning organization.
17. Demonstrate how to follow procedures and policies in order to ensure operating consistency, reduce variability in the process, reduce waste, and prevent safety incidents.
18. Use continuous improvement methodology to optimize processes.
19. Take preventive or corrective action to ensure operating consistency, reduce variability in the process, reduce waste, and prevent process safety incidents.
20. Use problem solving and decision making techniques to identify areas for improvement and correct process deficiencies.
21. Use Quality Tools and team problem solving to resolve a real-world, process industry dilemma.
22. Use basic statistics in one's work, as necessary.
23. Collect valid and reliable data to use in the analysis of process problems or to plan for process improvement.
24. Represent, analyze, and interpret process data using various types of control charts.
25. Represent, analyze, and interpret process data using a variety of Quality Tools.
26. Use process capability data in one’s work as necessary.
27. Apply data collection, representation, analysis, and interpretation skills in a real-world, process industry scenario.

**Methodology:**

**Class attendance:**

Much of the learning occurs in the classroom setting and cannot be made up by reading the textbook. Therefore, class participation is essential to your learning and attendance will be taken.

In order to receive an “A” in class participation, you should miss no more than two classes and complete all assignments (those required before class, those completed during class, and those required after class). If you know that you must miss a class session, you will need to inform your instructor.

Sessions are a combination of lecture, experiential activities and team exercises, and are based on a design philosophy that emphasizes the utilization of:

- Detailed lesson plans
- Interactive classroom activities
- Real-world examples
- Team activities
- Repetition of concepts to ensure retention
- Regular homework assignments
- High student performance expectations
Class Participation:
Your participation grade is based on the quality (not frequency) of your contribution. Those receiving high grades in class participation will be those who:

- are prepared for class
- arrive to class on time
- have excellent attendance
- make comments and ask questions that significantly contribute to the learning environment of the class
- are willing to volunteer for role plays and other in-class demonstrations and exercises.

Evaluation Criteria:

- Attendance/Participation 10%
- Homework/Workshops/Projects 40%
- Tests 50%

100%

Grading Scale:
A= 90-100%
B= 80-90%
C= 70-80%
D= 60-70%
F< 60%

Required Text, Readings, and Materials: Process Quality / CAPT

Class Policies: Last Date to Change to Audit Status or to Withdraw with a W Grade:
April 14th 2016

Attendance at each class is required and there will be a strong correlation between class attendance and the final course grade. Each student is responsible for the materials provided during lecture. It is each student’s responsibility alone to acquire lecture notes, handouts and exercise for missed classes. Excused absences must be cleared with the course instructor so arrangements can be made. Makeup exams may be given depending on the reason, the status of the student's class participation, and attendance.

Casper College may collect samples of student work demonstrating achievement of the above outcomes. Any personally identifying information will be removed from student work.

Student Rights and Responsibilities: Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

Chain of Command: If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director, the Dean, and lastly the Vice President for Academic Affairs.

Academic Dishonesty: (Cheating & Plagiarism) Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the
offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct for more information on this topic.

**Official Means of Communication:** Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are responsible to check their account regularly. This is also, where you will find course evaluation links during course evaluation periods.

**ADA Accommodations Policy:** If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college’s Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu. The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

**Calendar or schedule indicating course content:**

<table>
<thead>
<tr>
<th>Session #</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wk1</td>
<td>Introduction to Process Technology: Reading: Chapter 1</td>
</tr>
<tr>
<td></td>
<td>History of the quality movement</td>
</tr>
<tr>
<td>Wk2</td>
<td>Variability Concepts: Reading: Chapter 2:</td>
</tr>
<tr>
<td></td>
<td>Workshop/ Team Building</td>
</tr>
<tr>
<td>Wk3</td>
<td>Process capability: Reading: Chapter 3</td>
</tr>
<tr>
<td></td>
<td>Variable Control Charts: Reading: Chapter 4:</td>
</tr>
<tr>
<td>Wk4</td>
<td>Workshop/ Variable Charts</td>
</tr>
<tr>
<td></td>
<td>Attributes Control Charts: Reading: Chapter 5:</td>
</tr>
<tr>
<td>Wk5</td>
<td>Workshop/ Attribute Charts</td>
</tr>
<tr>
<td></td>
<td>Other Basic Quality Tools: Reading: Chapter 6</td>
</tr>
<tr>
<td>Wk6</td>
<td>Designed Experiments: Reading: Chapter 7:</td>
</tr>
<tr>
<td></td>
<td>Workshop/ Experiments</td>
</tr>
<tr>
<td>Wk7</td>
<td>Root Cause Analysis: Reading: Chapter 8</td>
</tr>
<tr>
<td></td>
<td>Customer Quality: Reading: Chapter 9</td>
</tr>
<tr>
<td>Wk8</td>
<td>Six Sigma: Reading: Chapter 10</td>
</tr>
<tr>
<td></td>
<td>Teams: Reading: Chapter 11</td>
</tr>
<tr>
<td>Wk9</td>
<td>Temple Grandin and Thinking outside the box</td>
</tr>
<tr>
<td></td>
<td>Management Systems: Reading: Chapter 12</td>
</tr>
<tr>
<td>Wk10</td>
<td>Quality Reliability Planning: Reading: Chapter 13</td>
</tr>
<tr>
<td></td>
<td>Lean: Reading: Chapter 14</td>
</tr>
<tr>
<td>Wk11</td>
<td>Workshop/Lean</td>
</tr>
<tr>
<td></td>
<td>Quality Costs: Reading: Chapter 15</td>
</tr>
<tr>
<td>Wk12</td>
<td>Putting the Puzzle Together: Reading: Chapter 16</td>
</tr>
<tr>
<td></td>
<td>Teams</td>
</tr>
<tr>
<td>Wk13</td>
<td>Effective Communication and Team Skills</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Wk14</td>
<td>Job Skills/ Interview process</td>
</tr>
<tr>
<td>Wk15</td>
<td>Test Review</td>
</tr>
<tr>
<td>WK 16</td>
<td>Final</td>
</tr>
</tbody>
</table>