QUALITY IMPROVEMENT
MGT 2160

Class Hours: 3.0  Credit Hours: 3.0
Laboratory Hours: 0.0  Revised: Fall 09

Note: This course is not designed for transfer credit.

Catalog Course Description:

This course is an introduction to quality management as a system through the application of statistical process control, W. Edwards Deming’s management philosophy, and various quality management techniques.

Entry Level Standards:

The beginning student must be computer literate, competent in college level math, and must read at the college level.

Prerequisites:

None

Textbook(s) and Other Course Materials:


Calculator: A calculator with a statistical section is required for the course.

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>Course Introduction: Total Quality, Team Management, Deming’s 14 Points of Management, History of Quality, Present Quality &amp; SPC Applications, Costs of Quality, Malcolm Baldrige National Quality Award, Deming Prize, Benchmarking, etc.</td>
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<tr>
<td>4-8</td>
<td>Documenting and Diagnosing a Process: Flowcharts, Operational Definitions, Cause and Effect Diagrams, Check Sheets, Pareto Analysis Basic Statistics: Frequency Distributions, Histograms, Run Charts, Measures of Central Tendency, Measures of Variability, Measure of Shape, Project Quality Improvement</td>
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<tr>
<td>8-14</td>
<td>Project management analysis; The Plan, Do, Study, Act Cycle; Auditing as it relates to organizational effectiveness; Creating a customer focus; Human Resources Development and Management; Measures of Performance</td>
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II. Course Objectives*:

A. Demonstrate an adequate knowledge of W. Edwards Deming’s quality concept. I, II, III, VIII
B. Demonstrate an adequate knowledge of quality control history and current events. I, II
C. Demonstrate an adequate quality control vocabulary. I, II, III
D. Demonstrate an adequate knowledge of quality control evaluative methods. I, II, III

*Roman numerals after course objectives reference goals of the Management program.

III. Instructional Processes*:

Students will:

1. Practice elements of the work ethic such as professionalism, preparedness, punctuality, honesty, cooperation, dependability, contribution, effectiveness, good manners, etc. (Transitional Strategy, Active Learning Strategies)
2. Calculate homework problems, etc. using computer software. (Technological Literacy outcome, Mathematics Outcome, Active Learning Strategies)
3. Research and write a report on an organization’s Quality Improvement program. (Communication Outcome, Technological Literacy Outcome, Transitional Strategies, Active Learning Strategies)

*Strategies and outcomes listed after instructional processes reference TBR’s goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

IV. Expectations for Student Performance*:

Upon successful completion of this course, the student should be able to:

1. Explain how statistical process control fits in to the quality management system. A, B
2. Interpret the relationship between quality/productivity and world market competitiveness. B
3. Evaluate the cost of quality. A, B, C
4. Describe and analyze W. Edwards Deming’s 14 points of management and his quality management philosophy. A, C
5. Summarize the history of quality control. A, B, C
6. Summarize the history of team management. A, B, C
7. Evaluate team management. A, B, C
8. Describe current events in the quality management field. A, B, C
9. Compute and/or construct, analyze, and apply the following evaluative methods: C, D
   a. Flowcharts
   b. Operational Definitions
   c. Cause and Effect Diagrams
   d. Check Sheets
   e. Pareto Diagrams
   f. Histograms
   g. Run Charts
   h. Process mean, range, and standard deviation
   i. P, nP, C, and V attribute control charts
   j. X-BAR and R and X-BAR and S variables control charts
   k. Individuals control charts

10. Explain the difference between common and special causes of variation. C, D

11. Describe the Plan, Do, Study, Act continuous improvement cycle. A, C, D

12. Evaluate rational subgrouping schemes. C, D

13. Identify and evaluate process state of control. C, D

14. Evaluate process capability. C, D

*Letters after performance expectations reference the course objectives listed above.

V. Evaluation:

A. Testing Procedures:

   Students are evaluated primarily on the basis of tests. A minimum of 3 major tests is recommended.

B. Laboratory Expectations:

   N/A

C. Field Work:

   N/A

D. Other Evaluation Methods:

   Class participation, group work and home-work will also comprise the final grade for the course. Each instructor must provide full details during the first week of class via a syllabus supplement.

E. Grading Scale:

   92 - 100 A
   89 - 91 B+
   82 - 88 B
   79 - 81 C+
   72 - 78 C
   65 - 71 D
   Below 65 F

VI. Policies:
A. Attendance Policy:

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Learning, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Learning. *(Pellissippi State Online Catalog)*

B. Academic Dishonesty:

Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students guilty of academic misconduct, either directly or indirectly through participation or assistance, are immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions which may be imposed through the regular Pellissippi State procedures as a result of academic misconduct, the instructor has the authority to assign an F or a zero for the exercise or examination or to assign an F in the course. *(Pellissippi State Online Catalog)*

C. Accommodations for disabilities:

Students who need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 134 or 126 or by phone: 694-6751 (Voice/TTY) or 539-7153. More information is available at [www.pstcc.edu/departments/swd/](http://www.pstcc.edu/departments/swd/).

D. Other Policies:

**Computer Usage Guidelines:**
College-owned or –operated computing resources are provided for use by students of Pellissippi State. All students are responsible for the usage of Pellissippi State’s computing resources in an effective, efficient, ethical and lawful manner. *(Pellissippi State Online Catalog)*