

Revised

05-80



Minnesota State University, Mankato HOLD and CLEAR buttons only compatible with Acrobat V. 4 and 5  
**Curriculum Proposal**

Please type or select the requested information. Print completed forms, add appropriate paper attachments, and route through MSU's curricular process for recommendations and decisions.

(Check all that apply):

College: Science, Engineering and Technology  Undergraduate  
 Department: Electrical and Computer Engineering and T  Graduate  
 Program: EET CIP # \_\_\_\_\_  
 Type of Change: COURSE PROPOSALS  
 Proposed: New Course  
 Title Current: \_\_\_\_\_  
 Title Proposed: Statistical Quality Control  
 24-Char. Abbrev: \_\_\_\_\_

Proposal # 244  
 Effective Date of Change: \_\_\_\_\_  
 Academic Year 05-06  
 (For Office Use Only)

Course Designator and Number	Number of Credits
EET 427	2
(if applicable)	

Include a course or program description for the Bulletin (30-40 words maximum for courses, 100 for programs):  
Fundamental concepts of quality control in manufacturing processes are studied. It is based on statistical sampling methods, determining MTBFs, using time series, histograms, and control charts to improve quality, and relationships between quality control and product liability.

Rationale or Justification for change:  
The previously used course MET 427 no longer covers the material the EET program required from the class, and has increased in the credit hours bringing the EET students above 128 credits allowed for their program.

\*\*\*For General Education or Cultural Diversity Courses Only\*\*\*

**General Education Course:**

GE Category #	GE Category Name (Maximum of 3 Categories)
N/A	
N/A	
N/A	

**Cultural Diversity Course:**  
 (Please check one.)  
 Core (At least 75% devoted to topics of race, gender, sexual orientation, age, class, and disabilities as they occur in United States Society.)  
 Related (At least 25% devoted to the above topics or to a global perspective on topics related to African American, Asian, Hispanic, and Native American inhabitants of the United States.)

7 For Writing Intensive Courses, attach a description of the kind and quantity of writing.  
 7 For Upper Division Courses, include a description of the respects in which it is broad and general rather than narrow and specific, and so suitable as GE.

Attach paper copies of the following:  
 a. Syllabus or course outline.  
 b. Course's student learning outcomes associated with each GE competency or CD designation.  
 c. List of strategies to be used to assess students' achievement of each GE competency or CD designation.

\*\*\*For New Courses\*\*\*

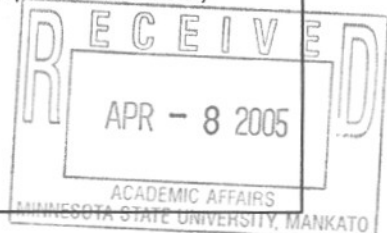
(Check all that apply):  
 Course is an elective.  
 Course is required for program  
 Pre- or Co-requisites:  
 Other courses are being changed or eliminated. (Explain.) MET 427 will be dropped

Instructional Type: Lecture  
 Grading Format:  Grade  P/N

Course will be offered:  
 Fall Semester  
 Spring Semester  
 Summer Session

Course content or title is similar to courses in other departments. (Attach copy of letter of agreement with other program(s) contacted. Indicate the nature of the discussions and/or resolution of differences or potential conflicts.)

Attach paper copies of the following:  
 a. Syllabus or course outline.  
 b. Course's student learning outcomes.  
 c. A list of resources required to offer and support this course.  
 d. A description of how teaching this course will affect department staffing.  
 e. If 400/500 level course, an explanation of added expectations of graduate students.





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\*\*\*For Program Proposals\*\*\*

Attach paper copies of the following:

- Student learning outcomes for the program.
- Minutes from department and college curriculum meetings in which action was taken on this proposal.
- Program Assessment Plan. Forms are available on the Academic Affairs Web site:  
[http://www.mnsu.edu/acadaf/words/PRA\\_SampSLOAssessPlan.doc](http://www.mnsu.edu/acadaf/words/PRA_SampSLOAssessPlan.doc)
- List of program requirements for **New** programs, or a list of **Current** and **Proposed** program requirements for **Redesigned** programs.
- A list of resources required to offer and support this program.
- A description of how offering this program will affect department staffing.
- A list of additional library holdings required for this program.

Please include rationale for any proposed changes in number of program credits:

\*\*\*For Programs Requiring MnSCU Approval\*\*\*

If any of the following changes are proposed, please fill out and attach MnSCU Program Approval Forms, which are available on the Academic Affairs Web site:

<http://www.mnsu.edu/acadaf/html/curformsprocesses.htm>

- Creation** of an entirely new program.
- Redesign** of existing programs, which takes any of the following forms:
  - Addition or deletion of a program option. Options are part of program design in which 30-50% of the courses are required as part of a common core for all students, and which offers curriculum alternatives greater than 30% of the total number of credits in the major. Options are appropriate to baccalaureate or masters programs.
  - Addition or deletion of a program emphasis. Emphases are part of program design in which more than 50% of the courses are required as part of a common core for all students, and which offers curriculum alternatives with a minimum of nine credits. Emphases are appropriate to associate and baccalaureate programs.
  - Change in program name.
  - Change in program CIP #.
  - Change in TOTAL program credits.
  - Change in degree award. For example, changing a B.A. to B.S.
  - Creation of a new degree award in a related academic area. Examples include creation of a certificate program from an existing degree program, or a new degree program from an existing degree program (e.g., Art History BA from Art BA.)
- Relocation** of an existing program. This is a proposal to move an existing program from one site to be exclusively offered at another site, and requires closing the program offered at the original site. For example, a program offered both on-campus and through extended campus is to be offered only at the extended campus site.
- Replication** of an existing program. This is a proposal to offer an existing program at a new site, which may be an existing MnSCU-approved site, or another campus of the same institution. Replicated programs are offered at both the original site and the new location.
- Suspension or reinstatement** of a program. This proposal suspends admission of students into an existing program, and is good for three years. Reinstatement proposals request the reopening of student admissions into a given program.
- Closure** of a program. This proposal requests closure of an existing program and its removal from an institution's official inventory of academic programs. Unless a department seeks to re-open a suspended program, it should be closed within three years of suspension.



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\*\*\*Signature Page\*\*\*

**Department**

Recommended (Category/ies \_\_\_\_\_)  
 Not Recommended (Category/ies \_\_\_\_\_)

William B. Hudak March 6 2005  
 Department Chair Date

Comments:

**College Curriculum Committee**

Recommended (Category/ies \_\_\_\_\_)  
 Not Recommended (Category/ies \_\_\_\_\_)

Karen C. Chou 4/8/05  
 Committee Chair Date

Comments:

**College Dean**

Recommended (Category/ies \_\_\_\_\_)  
 Not Recommended (Category/ies \_\_\_\_\_)

[Signature] 4/8/05  
 Dean Date

Comments:

**General Education Subcommittee**

Recommended (Category/ies \_\_\_\_\_)  
 Not Recommended (Category/ies \_\_\_\_\_)

\_\_\_\_\_  
 General Education Subcommittee Chair Date

Comments:

**Undergraduate Curriculum and Academic Policy Committee**

Recommended (Category/ies \_\_\_\_\_)  
 Not Recommended (Category/ies \_\_\_\_\_)

\_\_\_\_\_  
 UCAP Faculty Chair Date

Comments:

**Faculty Association Graduate Committee**

Recommended  
 Not Recommended

\_\_\_\_\_  
 Faculty Association Graduate Chair Date

Comments:

**Graduate Dean**

Recommended  
 Not Recommended

\_\_\_\_\_  
 Graduate Dean Date

Comments:

**Academic Affairs Council**

Recommended (Category/ies \_\_\_\_\_)  
 Not Recommended (Category/ies \_\_\_\_\_)

\_\_\_\_\_  
 Assistant Vice President Date

Comments:

**Senior Vice President and Vice President for Academic Affairs**

Approved (Category/ies \_\_\_\_\_)  
 Not Approved (Category/ies \_\_\_\_\_)

\_\_\_\_\_  
 Sr. Vice President / Vice Pres. Academic Affairs Date

Comments:

- A) Syllabus: attached
- B) Course Outcomes: attached
- C) Resources required: No new outside of department resources will be required to support this course.
- D) This course will need to be integrated into the already heavy departmental teaching load, if we are to maintain our student program of study at 128 hours.
- E) N/A

**Instructor:** Dr. Colin W. Wightman, PE  
**Office:** WH273  
**Telephone:** 507-389-6765  
**Email:** [Colin.Wightman@mnsu.edu](mailto:Colin.Wightman@mnsu.edu)

**Course objectives:** After completing this course, students should be able to:

1. Be able to identify and describe the fundamental concepts of quality control in manufacturing processes.
2. Be able to create and use control charts to identify both unit defects as well as process-related trends.
3. Be able to select and use appropriate statistical methods for acceptance sampling.
4. Be able to use component reliability data to calculate approximate MBF for manufactured systems.
5. Be able to use time series and histograms to improve quality.
6. Be able to identify and discuss some of the relationships between quality control and product liability.

**Topics:**

Introduction to Quality (2)

Total Quality Management-Principles and Practices. (2)

Total Quality Management-Tools and techniques. (2)

Fundamentals of Statistics (3)

Control Charts for Variables. (3)

Additional SPC Techniques for Variables.

Fundamentals of Probability. (3)

Control Charts for Attributes. ( 2 )

Lot-by-Lot Acceptance Sampling by Attributes. ( 2 )

Acceptance Sampling Systems. ( 3 )

Reliability. ( 5 )

Management and Planning Tools. ( 3 )

**Meets twice a week.**

**Text:**

Dale H. Besterfield, Quality Control (7/e), Prentice Hall, New Jersey, 2001.

**Grading:**

Homework	50%
Online Presentation	10%
Online Participation	20%
Final Exam	20%

**On-line resources:**

In this course, we will be using the MnSCU D2L server. Using this server, you will be able to check you current grades, post messages for other students in this course, participate in online discussions, and respond to occasional surveys.