

2009-42

FORM A
College of Technology

Revised 7/23/07

PROPOSAL SUMMARY AND ROUTING FORM

Proposal Title: Quality Technology Certificate Revision

Initiating Unit or Individual: Gary Ovans, Mark Rusco

Contact Person's Name: Gary Ovans e-mail: ovansg@ferris.edu phone: 231-591-2971

Date or Term of Proposal Implementation: Spring, 2009

- Group I - A – New degree/major or major, redirection of a current offering, or elimination of a degree, major or minor
- Group I - B – New minors or concentrations
- Group II - A – Minor curriculum clean-up and course changes
- Group II - B – New Course
- Group III - Certificates
- Group IV – Off-Campus Programs

Group/Individual	Signature	Date	Vote/Action *
Program Faculty	<i>Gary Ovans</i>	8/25/08	✓ Support 4 yes - 1 ABSENT ___ Support with Concerns ___ Not Support
Department Faculty	<i>Gary Ovans</i>	8/25/08	✓ Support 10 support 1 ABSENT ___ Support with Concerns ___ Not Support
Department Head / Chair	<i>Gary Ovans</i>	8/25/08	___ Support ___ Support with Concerns ___ Not Support
College Curriculum Committee	<i>Ron McKean</i>	9/23/08	11 Support ϕ no ___ Support with Concerns ___ Not Support
Dean	<i>James E. [Signature]</i>	9/25/08	___ Support ___ Support with Concerns ___ Not Support
University Curriculum Committee	<i>[Signature]</i>	11/20/08	✓ Support 8-0 ___ Support with Concerns ___ Not Support
Senate	<i>Richard Duffin</i>	11/20/08	✓ Support ___ Support with Concerns ___ Not Support
Academic Affairs	<i>Donald [Signature]</i>	11/24/08	✓ Support ___ Support with Concerns ___ Not Support

* Support with Concerns or Not Support must include a list of specific concerns. Votes must be shown for faculty groups. Administrators check appropriate action taken.

To be completed by Academic Affairs

President (Date Approved)

Board of Trustees (Date Approved)

President's Council (Date Approved)

REC'D NOV 20 2008

1. Proposal Summary

(Summary is generally less than one page. Briefly: state what is proposed with a summary of rationale and highlights. Additional rationale may be attached.)

Years of experience offering the Quality Technology Certificate has prompted Manufacturing faculty to rethink the appropriateness of existing courses comprising the certificate. As the majority of students earning the certificate are not in the core manufacturing program, a decision to reconfigure the certificate to better serve those students was made. The revised offering will be as follows:

- **MFGE 321 Metrology is to be added as it was observed that many students demonstrated a weakness in areas encompassing the measuring of technical parts, and interpreting products defined by geometric dimensioning and tolerancing**
- **MFGE 443 Continuous Improvement will be dropped from the certificate, as it was determined that this course was of lesser value than Metrology in terms of achieving the goals of the certificate**
- **MFGE 321 will be required as a prerequisite to MFGE 442 Design of Experiments I**

2. Summary of All Course Action Required*

a. Newly Created Courses to FSU:

Prefix	Number	Title
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b. Courses to be Deleted From FSU Catalog:

Prefix	Number	Title
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c. Existing Course(s) to be Modified:

Prefix	Number	Title
MFGE	442	Design of Experiments I (prerequisite)

d. Addition of existing FSU courses to program

Prefix	Number	Title
MFGE	321	Metrology

e. Removal of existing FSU courses from program

Prefix	Number	Title
MFGE	443	Continuous Improvement

Contact Senate Secretary or UCC Chair if spaces for additional courses are needed.

QUALITY TECHNOLOGY CERTIFICATE

What is it?

The Quality Technology Certificate is comprised of a series of four courses encompassing basic statistical theory through practical application of those statistical tools utilized throughout industry for the purpose of process analysis and improvement.

What advantages are there to the student completing this certificate?

As manufacturers evolve more efficient ways of producing high quality products, there's a growing need for engineers, managers, marketing, sales and human resource specialists with a thorough understanding of the quality assurance function. Decisions in industry and business are made based upon objective evidence, not how "I feel" or "I think". The tools that you become competent in utilizing, by taking these courses, will prepare you in implementing requirements for "**Lean Manufacturing**", **Six Sigma**, **QS-9000**, **ISO-9000** and **Continuous Improvement**. Completing this certificate increases a student's value to a potential employer. As an individual, it broadens your career opportunities. The breadth and depth of material in these courses exceeds that which is offered in workshops that one might attend at great expense after graduation. It would be beneficial for anyone considering the seeking of the title of Certified Quality Engineer to complete this certificate. Your program of study may require MFGE 353, Statistical Quality Control – taking MFGE 342 would be an excellent substitute, providing greater depth.

Where can I enroll to earn this certificate?

The courses are offered by the Manufacturing Engineering Technology program and are scheduled at the main campus in Big Rapids and in the evening at the Applied Technology Center in Grand Rapids. As a minimum for admission to the Certificate series, students should have completed MATH 116, Intermediate Algebra and Numerical Trigonometry. It is important that students who may be considering the earning of this certificate, properly stage themselves academically, to be able to complete all the necessary coursework.

When are the courses scheduled?

Fall Semester (On and off-campus)
MFGE 341
MFGE 442

Winter Semester (On and off-campus)
MFGE 342
MFGE 443

For information, please contact:

Manufacturing Department
Ferris State University
915 Campus Drive, Swan 108
Phone: 231 591 2511

Applied Technology Center
151 Fountain St. NE
Grand Rapids, MI 49503
Phone: 800 998 3425

Or visit the following websites:

<http://www.ferris.edu/htmls/academics/atc/>
<http://www.ferris.edu/grandrapids/qualtech.pdf>

MFGE 341 Quality Science Statistics

This course is a detailed study of the applications of fundamentals of data analysis covering distributions, linear relationships, cause-effect, collection of data, probability, counts, proportions, sample means and inferences. Applications to illustrate concepts meaningful in a technological environment. Prerequisite: college level algebra (MATH 116 or equivalent). 3 credits

MFGE 342 Statistical Process Engineering

This course is a detailed study of the application of data analysis to the statistical regulation of processes. It covers the techniques applicable to the analysis and regulation of industrial and business processes and products. Prerequisite: MFGE 341 or permission of the instructor. 3 credits

MFGE 442 Design of Experiments I

A detailed study of the design of experiments and the application of advanced quantitative data analysis techniques, as well as common experimental design methodologies used in manufacturing industries to collect data for the purpose of the improving or better understanding of a manufacturing process design. Prerequisites: MFGE 341 or by permission of department. 3 credits

MFGE 443 Continuous Improvement

A detailed study of the continuous improvement of quality; engineering and management approaches necessary to achieve a broad and persistent refinement of business and manufacturing process in an industrial organization. Prerequisites: MFGE 321 or by permission of department. 3 credits

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When are the courses scheduled?

Fall: MFGE 321 - Grand Rapids
 MFGE 341 - Big Rapids, Grand Rapids
 MFGE 442 – Big Rapids, Grand Rapids

Spring: MFGE 321 – Big Rapids
 MFGE 342 – Big Rapids, Grand Rapids

For information, please contact:
 Manufacturing Department
 Ferris State University
 915 Campus Drive, Swan 108
 Phone: 231 591 2511

Applied Technology Center
 151 Fountain St. NE
 Grand Rapids, MI 49503
 Phone: 800 998 3425

Or visit the following websites:
<http://www.ferris.edu/htmls/academics/atc/>
<http://www.ferris.edu/grandrapids/qualtech.pdf>



MFGE 321 Metrology Grade

This is a lecture-lab course of three semester hours exposing the student to the fundamentals of dimensional metrology, production gages and gaging techniques. Interpretation of geometric tolerances will also be covered with respect to their implications for inspection.

Prerequisite: Math 116 or Math 120, Math ACT 24 or SAT 500. 3 credits

MFGE 341 Quality Science Statistics Grade

This course is a detailed study of the applications of fundamentals of data analysis covering distributions, linear relationships, cause-effect, collection of data, probability, counts, proportions, sample means and inferences. Applications to illustrate concepts meaningful in a technological environment. Prerequisite: MATH 116 or 120 or 126 or MATH- ACT 24 or SAT 500. 3 credits

MFGE 342 Statistical Process Engineering Grade

This course is a detailed study of the application of data analysis to the statistical regulation of processes. It covers the techniques applicable to the analysis and regulation of industrial and business processes and products. Prerequisite: MFGE 341. 3 credits

MFGE 442 Design of Experiments I Grade

A detailed study of the design of experiments and the application of advanced quantitative data analysis techniques, as well as common experimental design methodologies used in manufacturing industries to collect data for the purpose of the improving or better understanding of a manufacturing process design. Prerequisites: MFGE 321, MFGE 341 3 credits

CURRICULUM CONSULTATION FORM

To be completed by each department affected by the proposed change, new degree, new program, new minor, or new course. Potential duplication of coursework is reason for consultation.

1. This form, with the first six blanks filled in, should be forwarded with the proposal to the chair/head of the affected department.
2. The affected department must respond within 20 calendar days of receipt of this form to insure inclusion in the final proposal. The completed form is returned to the initiator and inserted into the proposal. Failure to respond is interpreted as support for the proposal.
3. The Proposing Department must respond to any concerns by the affected department. This response will be in writing and be included in the proposal following the consultation form.

RE: Proposal Title Quality Technology Certificate Revision

Initiator(s): Gary Ovans, Mark Rusco

Proposal Contact: Gary Ovans **Date Sent:** 8/26/08

Department: MFGE **Campus Address:** Swan 108 X2971
(Please print)

Responding Department : Automotive

Chair/Head/Coordinator: Key **Date Returned:** 9/4/08

Based upon department faculty review on 9/3/08 (date), we

- Support the above proposal.
 Support the above proposal with the modifications and concerns listed below.
 Do not support the proposal for the reasons listed below.

Comment regarding the impact this proposal has on scheduling, room assignments, faculty load, and prerequisites for your department. Use additional pages, if necessary.

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RE: Proposal Title Quality Technology Certificate Revision

Initiator(s): Gary Ovans, Mark Rusco

Proposal Contact: Gary Ovans **Date Sent:** _____

Department: MFGE **Campus Address:** Swan 108 X2971
(Please print)

Responding Department : MECH Design

Chair/Head/Coordinator: Hollen **Date Returned:** _____

Based upon department faculty review on _____ (date), we

- Support the above proposal.
- Support the above proposal with the modifications and concerns listed below.
- Do not support the proposal for the reasons listed below.

Comment regarding the impact this proposal has on scheduling, room assignments, faculty load, and prerequisites for your department. Use additional pages, if necessary.

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RE: Proposal Title Quality Technology Certificate Revision

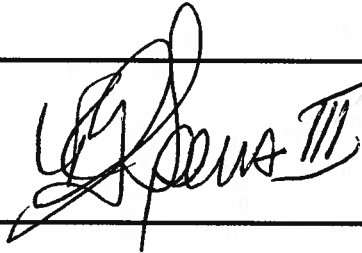
Initiator(s): Gary Ovans, Mark Rusco

Proposal Contact: Gary Ovans **Date Sent:** _____

Department: MFGE **Campus Address:** Swan 108 X2971
(Please print)

Responding Department : NEC

Chair/Head/Coordinator: Speirs **Date Returned:** _____



Based upon department faculty review on _____ (date), we

- Support the above proposal.
- Support the above proposal with the modifications and concerns listed below.
- Do not support the proposal for the reasons listed below.

Comment regarding the impact this proposal has on scheduling, room assignments, faculty load, and prerequisites for your department. Use additional pages, if necessary.

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3. The Proposing Department must respond to any concerns by the affected department. This response will be in writing and be included in the proposal following the consultation form.

RE: Proposal Title Quality Technology Certificate Revision

Initiator(s): Gary Ovans, Mark Rusco

Proposal Contact: Gary Ovans **Date Sent:** _____

Department: MFGE **Campus Address:** Swan 108 X2971
(Please print)

Responding Department : Electronics

Chair/Head/Coordinator: Cook **Date Returned:** 9/15/08

Based upon department faculty review on 9/11/08 (date), we

- Support the above proposal.
 Support the above proposal with the modifications and concerns listed below.
 Do not support the proposal for the reasons listed below.

Comment regarding the impact this proposal has on scheduling, room assignments, faculty load, and prerequisites for your department. Use additional pages, if necessary.

LIBRARY & INSTRUCTIONAL SERVICES CONSULTATION FORM

To be completed by the liaison librarian and approved by the Dean of LIS. All returned forms should be included in the proposal. **Library & Instructional Services must respond within 20 calendar days of receipt of this form to insure that the form is included in the final proposal.**

FAILURE TO RESPOND IS CONSIDERED AS SUPPORT OF THE CHANGE.

RE: Proposal Title: Quality Technology Certificate Revision

Projected number of students per year affected by proposed change: 30

Initiator(s): Gary Ovans, Mark Rusco

Proposal Contact: Gary Ovans Date Sent: _____

Department: MFGE **Campus Address:** Swan 108 X2971
(Please print)

Liaison Librarian signature: Frances Rosen **Date:** 8/26/08

Dean of LIS Signature: [Signature] **Date Returned:** 8/27/08

Based upon our review on 8/26/08 (date), Library & Instructional Services concludes that:

- Library resources to support the proposed curriculum change are currently available.
- Additional Library resources are needed but can be obtained from current funds.
- Support, but significant additional Library funds/resources are required in the amount of \$ _____.
- Does not support the proposal for reasons listed below.

Comment regarding the impact this proposal will have on library resources, collection development, programs, etc. Use additional pages if necessary:



Maureen Milzarski/FSU
11/21/2008 08:27 AM

To Betty L Nelson/FSU, Paula L Hadley-Kennedy/FSU, Thomas
E Oldfield/FSU, Gary L Ovans/FSU,
cc Donna J Schmidt/FSU,

bcc

Subject Curriculum Proposal

Attached is the approved curriculum proposal: Quality Technology Certificate
Revision



Scan001.PDF