Curriculum Development Form — New Course

Course Designator, Number, Title and Number of Credits (i.e. ACCT 1800, Business Law, 3 cr)
CMAE 1514 - Safety Awareness

Date of Proposal: 3/6/2015
Author: Ryan Langemeier

Course Contact: Ryan Langemeier
Grading Method: ☑ Grade  ☐ Pass/Fail

Scheduling: ☑ Fall ☑ Spring ☑ Summer  ☐ Alternate Years  ☐ Variable  ☐ On Demand

Is this proposed course a Liberal Arts and Sciences course?  ☐ Yes  ☑ No

If yes, which MnTC area(s) will it fulfill (http://mncoursed.com)?

☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5  ☐ 6  ☐ 7  ☐ 8  ☐ 9  ☐ 10

Is this course a requirement/elective for a specific program or programs?  ☑ Yes  ☐ No

If yes, which program(s)? — DARS search
MPT Certificate; CIM Degree, Diploma, Certificate; Welding Diploma; Mechatronics Degree and Diploma

What impact will this new course have on other program(s)?

New course opportunities that require some changes to existing programs

Describe the rationale for offering this new course:
Courses of the MSSC core curriculum for intengration as part of the manufacturing alignment work of TAACCCT Grant

Attach additional paperwork if necessary

As Faculty Developer, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

Prior to Preparing Documentation
☑ Initiation — idea was submitted to Department Chair(s) and Academic Dean/Director for discussion and support
☑ Explored existing course offerings to identify potential duplication
☑ Completed Intention Form

Continue the Curriculum Development Process
☑ Used online WIDS to create Common Course Outline (CCO)
☑ Identified:
  • concise 2-3 sentence course description
  • course prefix and number
  • course name
  • lecture/lab credits and hour breakdown
  • prerequisites
  • MnTC goal area — LAS courses
☑ Completed MnTC Goal Area Cross-walk Template (for LAS MnTC courses only)
☑ Created measurable course competencies and learning objectives
☑ Considered potential opportunities and impacts of the change on other programs/departments — DARS Search
☑ Proofread documentation for correct content on CCOs based on SCC example
☑ Proofread documentation for grammatical and typographical errors

Faculty Developer Signature
3.2.15
Date

As Primary Department Chair, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

☑ Documentation through email and department meetings made available for other faculty and programs to provide feedback, includes MnTC Goal Area Cross-walk Template(s)
☑ Proofread documentation for correct content and proper structure on CCOs based on SCC example
☑ Proofread documentation for grammatical and typographical errors
☑ I support this course  ☐ I do not support this course — please provide reason(s):

Primary Department Chair Signature
3.2.15
Date
For LAS (MnTC courses) — As a LAS Department Chair, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

☐ LAS course (specifically MnTC courses), documentation through email and department meetings made available for other faculty and programs to provide feedback, includes MnTC Goal Area Cross-walk Template(s)

☐ I support this course  ☐ I do not support this course — please provide reason(s):

LAS Department Chair Signature  Date

☐ I support this course  ☐ I do not support this course — please provide reason(s):

LAS Department Chair Signature  Date

☐ I support this course  ☐ I do not support this course — please provide reason(s):

LAS Department Chair Signature  Date

If all 4 LAS Department Chairs do not support the new course proposal, faculty developer can elevate the proposal to AASC for resolution.

As Academic Dean/Director, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

☑ Identified potential opportunities and impacts of the change on other programs/departments — DARS search
☑ Reviewed MnTC Goal Area Cross-walk Template (for LAS MnTC courses only)
☑ MnTC Goal Area is appropriate based on MnSCU guidelines — Transfer Specialist consulted
☑ Verified credentials for faculty teaching the course
☑ Addressed the need for Class Maximum Change Request form
☐ No change in class maximum OR
☐ Change in class maximum — Class Maximum Change Request form completed with all necessary signatures

☐ I support this course  ☐ I do not support this course — please provide reason(s):

Barb Emboch  2/23/15

Academic Dean/Director Signature  Date

If Academic Dean/Director does not support the new course proposal, faculty developer can elevate proposal to AASC for resolution.

Upload this signed form as a PDF to WIDS Shared Document folder — Curriculum Committee.

Following Curriculum Committee support, this form is completed with final signatures.

Jill K. Bregier  3/4/2015

Curriculum Committee Chair Signature  Date

3-20-15

Vice President of Student and Academic Affairs Signature  Date
South Central College

CMAE 1514*  Safety Awareness

Course Outcome Summary

Course Information

Description  This course is designed to align with the National Skill Standard assessment and certification system for Safety Awareness. The course curriculum is based on federally-endorsed national standards for production workers. This course will introduce OSHA standards relating to personal protective equipment, Hazard Communication, tool safety, confined spaces, electrical safety, emergency responses, lockout/tagout, and others. (Prerequisites: None)

Total Credits  2.00
Total Hours  32.00

Types of Instruction

Instruction Type  Credits/Hours
Lecture  2/32

Pre/Corequisites

None

Institutional Core Competencies

Foundations and skills for lifelong learning: Students will display an understanding of learning as a lifelong process through demonstration of a desire to learn, the willingness to apply learning to other areas of their lives, the ability to think and act independently, be willing to take the initiative to get projects done, and demonstrate the ability to reflect upon what has occurred and how it impacts the student and others.

Teamwork and problem-solving: Students will demonstrate the ability to work together cohesively with diverse groups of persons, including working as a group to resolve any issues that arise.

Course Competencies

1. Explain characteristics of working in a safe and productive manufacturing workplace.
   Learning Objectives
   Identify ways in which manufacturing affects the national and global economies.
   Recognize systems of safety used by high-performance manufacturers to produce quality products at lowest possible costs.
   Identify the role of production workers in helping to ensure competitive levels of cost, quality, and delivery in a safe work environment.
   Identify external and internal customers.

2. Describe process for performing safety and environmental assessments.
Learning Objectives
Identify potential hazards in the work environment.
Describe processes related to reporting and monitoring potential hazards.
Review health, safety, and environmental documentation and policies.
Identify all relevant health, safety, and environmental laws and regulations in regards to inspections.
Describe aspects of schedules, procedures, documentation, and record storage related to inspections.

3. Identify procedures related to performing emergency drills and participating on emergency teams.

Learning Objectives
Discuss training and certification on relevant emergency and first aid procedures.
Define procedures for responding to fire and electrical emergencies.
Relate emergency response compliance to company and regulatory policies and procedures.
Explain documentation process in regards to drills and incidents in relation to company and regulatory procedures.

4. Identify potential unsafe conditions and corrective actions.

Learning Objectives
Identify conditions that could present a threat to health, safety, and the environment.
Explain the process of documenting threats properly.
Identify corrective actions related to threats.
Discuss consultation of appropriate parties regarding corrective action.
Relate steps to ensure corrective actions are taken promptly according to company procedures.
Explain the process of tracking and reporting ongoing safety concerns until corrective action is taken.

5. Discuss safety training for manufacturing employees.

Learning Objectives
Identify characteristics of orientation that covers all topics and procedures needed to facilitate employee safety.
Discuss needs and process in place to ensure employees can raise safety concerns, ask questions, and receive additional training.
Explain the proper use of personal protective equipment.
Identify documentation processes in regards to orientation and company requirements.
Discuss alignment of orientation with all relevant laws, policies, and regulations.

6. Explain proper safe use of equipment.

Learning Objectives
Identify guidelines for ergonomic safety and the importance of new operators receiving a complete orientation to the equipment.
Explain clear and effective communication in regards to equipment safety, including material handling.
Describe the use of evaluations and feedback to improve training materials and methods.
Identify effective, quality techniques for safe use of equipment.

7. Describe processes and procedures that support safety in a work environment.

Learning Objectives
Identify the importance of consultation with health and safety representatives.
Describe how to create a safer, more effective work environment.
Discuss safety, quality, and productivity issues and associated documentation.

8. Summarize safety and health requirements for maintenance, installation, and repair.

Learning Objectives
Explain the importance of communication regarding safety.
Identify job safety analyses that need to be reviewed regularly according to company policy.
Define hazardous materials procedures and policies.
Identify associated documentation and information, such as Material Safety Data Sheets (MSDS) and right-to-know policies.
Explain use of safety guards and how to avoid by-passes.
Describe safety procedures, including those related to lock-out/tag-out, confined space, and ergonomics.
Explain good housekeeping procedures.
9. **Identify aspects of safe equipment and operator performance.**

   Learning Objectives
   - Explain the process of regular monitoring.
   - Describe the reporting of unsafe conditions or circumstances that are out of compliance.
   - Identify necessary equipment and tool checks to ensure compliance with safety specifications.
   - Explain the importance of ensuring accident and injury data being forwarded to appropriate personnel for inclusion in OSHA recordables.

10. **Recognize effective, safety-enhancing workplace practices.**

    Learning Objectives
    - Describe the role of clear communication in workplace safety practices.
    - Identify effective teamwork as a necessary component of workplace safety.
    - Explain how proper production job assignments and efficient training programs are important to safety-enhancing workplace practices.

**SCC Accessibility Statement**

If you have a disability and need accommodations to participate in the course activities, please contact your instructor as soon as possible. This information will be made available in an alternative format, such as Braille, large print, or cassette tape, upon request. If you wish to contact the college ADA Coordinator, call that office at 507-389-7222.

Disabilities page [http://southcentral.edu/academic-policies/disability-rights.html](http://southcentral.edu/academic-policies/disability-rights.html)
Curriculum Development Form — New Course

Course Designator, Number, Title and Number of Credits (i.e. ACCT 1800, Business Law, 3 cr)
CMAE 1518 - Manufacturing Process and Production

Date of Proposal: 3/6/2015  
Author: Ryan Langemeier

Course Contact: Ryan Langemeier  
Grading Method: Grade

Scheduling:  
- Fall  
- Spring  
- Summer  
- Alternate Years  
- Variable  
- On Demand

Is this proposed course a Liberal Arts and Sciences course? Yes No

If yes, which MnTC area(s) will it fulfill (http://mntransfer.org)?

- 1  
- 2  
- 3  
- 4  
- 5  
- 6  
- 7  
- 8  
- 9  
- 10

Is this course a requirement/elective for a specific program or programs? Yes No

If yes, which program(s)? — DARS search

- MPT Certificate  
- CIM Degree  
- Diploma  
- Certificate  
- Welding Diploma  
- Mechatronics Degree and Diploma

What impact will this new course have on other program(s)?

New course opportunities that require some changes to existing programs

Describe the rationale for offering this new course:
Courses of the MSSC core curriculum for intengration as part of the manufacturing alignment work of TAACCCT grant

Attach additional paperwork if necessary

As Faculty Developer, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

Prior to Preparing Documentation

- Initiation — idea was submitted to Department Chair(s) and Academic Dean/Director for discussion and support
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Continue the Curriculum Development Process

- Used online WIDS to create Common Course Outline (CCO)
- Identified:
  - concise 2-3 sentence course description
  - course name
  - lecture/lab credits and hour breakdown
  - course prefix and number
  - prerequisites
  - MnTC goal area — LAS courses
- Completed MnTC Goal Area Cross-walk Template (for LAS MnTC courses only)
- Created measurable course competencies and learning objectives
- Considered potential opportunities and impacts of the change on other programs/departments — DARS Search
- Proofread documentation for correct content on CCOs based on SCC example
- Proofread documentation for grammatical and typographical errors

Faculty Developer Signature 3-2-16

As Primary Department Chair, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

- Documentation through email and department meetings made available for other faculty and programs to provide feedback, includes MnTC Goal Area Cross-walk Template(s)
- Proofread documentation for correct content and proper structure on CCOs based on SCC example
- Proofread documentation for grammatical and typographical errors
- I support this course

Primary Department Chair Signature 3-2-15
For LAS (MnTC courses) — As a LAS Department Chair, by signing this *New Course* form, the Curriculum Committee is assured of the following (check marks required):

☐ LAS course (specifically MnTC courses), documentation through email and department meetings made available for other faculty and programs to provide feedback, includes MnTC Goal Area Cross-walk Template(s)

☐ I support this course       ☐ I do not support this course — please provide reason(s):


LAS Department Chair Signature  Date

☐ I support this course       ☐ I do not support this course — please provide reason(s):

LAS Department Chair Signature  Date

☐ I support this course       ☐ I do not support this course — please provide reason(s):

LAS Department Chair Signature  Date

If all 4 LAS Department Chairs do not support the new course proposal, faculty developer can elevate the proposal to AASC for resolution.

As Academic Dean/Director, by signing this *New Course* form, the Curriculum Committee is assured of the following (check marks required):

☐ Identified potential opportunities and impacts of the change on other programs/departments — DARS search
☐ Reviewed MnTC Goal Area Cross-walk Template (for LAS MnTC courses only)
☐ MnTC Goal Area is appropriate based on MnSCU guidelines — Transfer Specialist consulted
☐ Verified credentials for faculty teaching the course
☐ Addressed the need for Class Maximum Change Request form
   ☑ No change in class maximum OR
   ☐ Change in class maximum — Class Maximum Change Request form completed with all necessary signatures

☐ I support this course       ☐ I do not support this course — please provide reason(s):


Academic Dean/Director Signature  2/23/15

If Academic Dean/Director does not support the new course proposal, faculty developer can elevate proposal to AASC for resolution.

Upload this signed form as a PDF to WIDS Shared Document folder — Curriculum Committee.

Following Curriculum Committee support, this form is completed with final signatures:

Curriculum Committee Chair Signature  3/16/2015  Date

Vice President of Student and Academic Affairs Signature  3-20-15  Date
South Central College

CMAE 1518* Manufacturing Process and Production

Course Outcome Summary

Course Information
Description This course is designed to align with the National Skill Standard assessment and certification system for Manufacturing Processes. The course curriculum is based on federally-endorsed national standards for production workers. The course emphasizes Just-In-Time manufacturing principles, basic supply chain management, communication skills, and customer service. (Prerequisites: None)

Total Credits 2.00
Total Hours 32.00

Types of Instruction
Instruction Type Lecture
Credits/Hours 2/32

Pre/Corequisites
None

Institutional Core Competencies
Foundations and skills for lifelong learning: Students will display an understanding of learning as a lifelong process through demonstration of a desire to learn, the willingness to apply learning to other areas of their lives, the ability to think and act independently, be willing to take the initiative to get projects done, and demonstrate the ability to reflect upon what has occurred and how it impacts the student and others.

Written and oral communication: Students will communicate effectively in a range of social, academic, and professional contexts using a variety of means, including written, oral, numeric/quantitative, graphic, and visual modes of communication.

Course Competencies

1. **Explain aspects of identifying customer needs.**
   Learning Objectives
   - Recognize the different and common needs of internal customers.
   - Explain the importance of customer contact about product aspects and printed specifications.
   - Discuss how to ensure regular review of customer needs in order to keep customer specifications up-to-date.
   - Describe how to communicate customer needs effectively to others including shift-to-shift, co-workers, and managers.
   - Identify issues that could prevent customer needs and discuss how to address them proactively.

2. **Discuss how to determine resources available for the production process.**
Learning Objectives
Identify how raw materials are checked against work orders.
Discuss the process to check tools and equipment against work orders.
Explain communication of discrepancies.
Describe placement of necessary resources at the workstation.
Recognize the importance of scheduling workers with appropriate skills according to production needs.

3. Identify set-up and verification of equipment for the production process.
Learning Objectives
Explain aspects of proper repair and adjustment to production equipment prior to putting into service.
Describe set-up meeting process requirements, product, and equipment specifications.
Identify first piece or production run meeting specifications.
Select appropriate documentation of set-up procedures to enhance repeatability.
Discuss ergonomic and other relevant health, safety, and environmental standards.

4. Describe the process of setting team production goals.
Learning Objectives
Define team goals as specific, measurable, and achievable.
Discuss how team goals are aligned with customer and business needs.
Explain how team goals focus the team in order to meet team objectives.
Identify documentation and communication of team goals.

5. Explain job assignments.
Learning Objectives
Identify how job assignments match skills with the production work to be done.
Discuss how job assignments maximize the use of available skills.
Explain the relationship of job assignments to ensuring business and customer needs are met.
Discuss the importance of effective notification of workers regarding job assignments.

6. Identify work flow with team members and other work groups.
Learning Objectives
Describe how to meet production schedules effectively.
Explain notification of team members regarding schedule requirements.
Discuss efficient production work flow and how relationships with others helps to facilitate it.
Identify how to minimize downtime.
Explain how workers actively participate in meetings and problem-solving groups.

7. Discuss communication of production and material requirements and product specifications.
Learning Objectives
Recognize communication that reflects knowledge of production requirements, levels, and product specifications.
Identify communication that reflects knowledge of material specifications and delivery issues and schedules.
Describe communication that demonstrates knowledge of customer and business production needs.
Explain communication that is initiated cross-functionally and made in a timely and accurate manner to the correct parties.
Describe clear communication that is relevant to production and products.
Discuss how to track and document communications, as appropriate.

8. Explain how to perform, monitor, and document the process to make the product.
Learning Objectives
Identify process control data that indicates the manufacturing process is meeting product specifications.
Describe manufacturing process cycle time to meet customer and business needs.
Explain how to ensure product meets customer specifications.
Relate appropriate labeling of products to meet compliance.
Discuss aspects of production operations that ensure compliance with all health, safety, and environmental policies and practices.

9. Identify documentation and compliance process in regards to customer requirements.
Learning Objectives
Identify characteristics of compliance documentation that show it is legible, written in the appropriate format, and correctly stored.
Explain how to forward documentation of compliance to the proper parties, and obtain "sign off."
Describe process in regards to labeling products appropriate for compliance and non-compliance.

10. **Explain the process of preparing the final product for shipping or distribution.**

**Learning Objectives**
- Identify procedure to make sure packaging materials meet packaging and shipping specifications, including labeling and safety requirements.
- Discuss how to complete documentation of customer packaging and shipping instructions.
- Describe the importance of ensuring product availability is communicated to the proper parties in a timely manner.
- Explain checking of quantity, destination, and packaging instructions of product against the work order.
- Identify correct storage or staging procedure for shipping.
- Explain laws and regulations in regard to labeling, packaging, and transporting of product.
- Identify material handling procedures to prevent product damage.

**SCC Accessibility Statement**
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Curriculum Development Form — New Course

Course Designator, Number, Title and Number of Credits (i.e. ACCT 1800, Business Law, 3 cr)

CMAE 1522 - Quality Practices

Date of Proposal: 3/6/2015

Author: Ryan Langemeier

Course Contact: Ryan Langemeier

Grading Method: ☑ Grade    ☐ Pass/Fail

Scheduling: ☑ Fall    ☑ Spring    ☑ Summer    ☐ Alternate Years    ☐ Variable    ☐ On Demand

Is this proposed course a Liberal Arts and Sciences course?  ☐ Yes    ☑ No

If yes, which MnTC area(s) will it fulfill (http://mntransfer.org)?

☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5  ☐ 6  ☐ 7  ☐ 8  ☐ 9  ☐ 10

Is this course a requirement/elective for a specific program or programs?  ☑ Yes    ☐ No

If yes, which program(s)? — DARS search

MPT Certificate; CIM Degree, Diploma, Certificate; Welding Diploma; Mechatronics Degree and Diploma

What impact will this new course have on other program(s)?

New course opportunities that require some changes to existing programs

Describe the rationale for offering this new course:

Courses of the MSSC core curriculum for intergration as part of the manufacturing alignment work of TAACCCT grant

Attach additional paperwork if necessary

As Faculty Developer, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

Prior to Preparing Documentation

☑ Initiation — idea was submitted to Department Chair(s) and Academic Dean/Director for discussion and support

☑ Explored existing course offerings to identify potential duplication

☑ Completed Intention Form

Continue the Curriculum Development Process

☑ Used online WIDS to create Common Course Outline (CCO)

☑ Identified:

• concise 2-3 sentence course description   • course name   • lecture/lab credits and hour breakdown  

• course prefix and number   • prerequisites   • MnTC goal area — LAS courses

☑ Completed MnTC Goal Area Cross-walk Template (for LAS MnTC courses only)

☑ Created measurable course competencies and learning objectives

☑ Considered potential opportunities and impacts of the change on other programs/departments — DARS Search

☑ Proofread documentation for correct content on CCOs based on SCC example

☑ Proofread documentation for grammatical and typographical errors

Faculty Developer Signature    3-2-15

As Primary Department Chair, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

☑ Documentation through email and department meetings made available for other faculty and programs to provide feedback, includes MnTC Goal Area Cross-walk Template(s)

☑ Proofread documentation for correct content and proper structure on CCOs based on SCC example

☑ Proofread documentation for grammatical and typographical errors

☑ I support this course    ☐ I do not support this course — please provide reason(s):

Primary Department Chair Signature    3-2-15
For LAS (MnTC courses) — As a LAS Department Chair, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

☐ LAS course (specifically MnTC courses), documentation through email and department meetings made available for other faculty and programs to provide feedback, includes MnTC Goal Area Cross-walk Template(s)

☐ I support this course       ☐ I do not support this course — please provide reason(s):

________________________________________

LAS Department Chair Signature  Date

☐ I support this course       ☐ I do not support this course — please provide reason(s):

________________________________________

LAS Department Chair Signature  Date

☐ I support this course       ☐ I do not support this course — please provide reason(s):

________________________________________

LAS Department Chair Signature  Date

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As Academic Dean/Director, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

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☒ Verified credentials for faculty teaching the course
☐ Addressed the need for Class Maximum Change Request form
☐ No change in class maximum OR
☐ Change in class maximum — Class Maximum Change Request form completed with all necessary signatures

☐ I support this course       ☐ I do not support this course — please provide reason(s):

______________________________  2/23/15

Academic Dean/Director Signature  Date

If Academic Dean/Director does not support the new course proposal, faculty developer can elevate proposal to AASC for resolution.

Upload this signed form as a PDF to WIDS Shared Document folder — Curriculum Committee.

Following Curriculum Committee support, this form is completed with final signatures.

______________________________  3/16/2015

Curriculum/Committee Chair Signature  Date

______________________________  3/20/15

Vice President of Student and Academic Affairs Signature  Date
CMAE 1522* Quality Practices

Course Outcome Summary

Course Information

Description: This course is designed to align with the National Skills Standard assessment and certification system for Quality Practices. The course curriculum is based upon federally-endorsed national standards for production workers. Emphasis is placed on Continuous Improvement concepts and how they relate to a quality management system. Students will be introduced to a quality management system and its components. These include corrective actions, preventative actions, control of documents, control of quality records, internal auditing of processes, and control of non-conforming product. (Prerequisites: None)

Total Credits 2.00
Total Hours 32.00

Types of Instruction

Instruction Type Credits/Hours
Lecture 2/32

Pre/Corequisites
None

Institutional Core Competencies

Foundations and skills for lifelong learning: Students will display an understanding of learning as a lifelong process through demonstration of a desire to learn, the willingness to apply learning to other areas of their lives, the ability to think and act independently, be willing to take the initiative to get projects done, and demonstrate the ability to reflect upon what has occurred and how it impacts the student and others.

Teamwork and problem-solving: Students will demonstrate the ability to work together cohesively with diverse groups of persons, including working as a group to resolve any issues that arise.

Course Competencies

1. Explain periodic or statistically based internal quality audit activities.
   Learning Objectives
   Identify characteristics of correct and relevant audit data.
   Discuss completion and forwarding of all relevant audit forms to the proper parties in a timely manner.
   Describe assessment and documentation of quality standards.
   Explain audit process and procedures, including scheduling.

2. Describe checking and documentation of calibration of gages and other data collection
equipment.

Learning Objectives
Explain how to follow calibration schedule according to specifications.
Discuss checking of instrument certification by reviewing documentation and through observation during use.
Identify steps to recalibration - or ensure recalibration by someone else - for instruments out of calibration.

3. **Explain continuous improvement.**

Learning Objectives
Explain the role of observation and data review and analysis in recognizing potential improvements.
Identify inclusion of measurable and data-driven benefits to the company, customers, and employees in suggestions.
Discuss proper procedures and documentation in regards to soliciting and receiving suggestions.

4. **Discuss inspection of materials and product/process at all stages to ensure they meet specifications.**

Learning Objectives
Identify scheduling and procedural considerations in regards to sampling and inspection.
Describe how to select and use inspection tools and procedures correctly.
Explain inspecting materials against specifications.
Discuss how to promptly identify products, processes, and materials that do not meet specifications.
Identify the role that spot-checks play in implementation of corrective actions.
Describe proper creation and reporting of inspection documentation.

5. **Describe documentation of results of quality tests.**

Learning Objectives
Discuss how to check data forms to ensure that they are complete and accurate.
Explain the process of evaluating and interpreting information correctly.
Discuss forwarding data to the correct parties.
Describe selection and use of correct analytical tools, including statistical process controls (SPC).
Identify proper storage process and time frames for reports.

6. **Explain communication regarding quality problems.**

Learning Objectives
Discuss review of quality problems with production operators.
Describe prompt communication of all quality problems with all appropriate parties.
Explain documentation and reporting in regards to quality problems and defect trends.

7. **Identify corrective actions to restore or maintain quality.**

Learning Objectives
Explain how to ensure corrective actions are identified and communicated promptly.
Identify recommendations for action that are clear, concise, and supported by data.
Discuss the need to make adjustments in a timely manner to eliminate deviations and bring the process back into control.
Discuss correct format for documentation regarding adjustments and follow-up product quality checks.
Describe implementation of corrective action/quality improvements in a standardized manner.

8. **Explain how to properly record process outcomes and trends.**

Learning Objectives
Explain appropriate standards in maintaining records on quality process.
Describe charting of outcomes of quality practices according to appropriate methods and standards.
Analyze data on quality process performance for accuracy.
Identify reporting procedures for quality performance data.
Explain role of examination of documentation in similar process issues when seeking possible solutions.

9. **Identify fundamentals of blueprint reading.**

Learning Objectives
Explain how to effectively create visualization of objects in a drawing.
Identify blueprint features correctly.
Read and comprehend dimensions of an object in a technical drawing.
Recognize the functions of sectional drawings.

10. **Use common measurement systems and precision measurement tools.**

    **Learning Objectives**
    Use and convert U.S. measurement and standard international metric systems.
    Measure correctly using a machinist's rule and tape measure.
    Identify part dimensions by measuring using a caliper and micrometer.
    Use a computer to measure data from a digital gage correctly.

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Curriculum Development Form — New Course

Course Designator, Number, Title and Number of Credits (i.e. ACCT 1800, Business Law, 3 cr)

CMAE 1526 - Maintenance Awareness

Date of Proposal: 3/6/2015
Author: Ryan Langemaier
Course Contact: Ryan Langemaier
Grading Method: ☑ Grade  ☐ Pass/Fail
Scheduling: ☑ Fall  ☑ Spring  ☑ Summer  ☐ Alternate Years  ☐ Variable  ☐ On Demand
Is this proposed course a Liberal Arts and Sciences course?  ☐ Yes  ☑ No
If yes, which MnTC area(s) will it fulfill (http://mntransfer.org)?
☑ 1 ☑ 2 ☑ 3 ☑ 4 ☑ 5 ☑ 6 ☑ 7 ☑ 8 ☑ 9 ☑ 10
Is this course a requirement/elective for a specific program or programs?  ☑ Yes  ☐ No
If yes, which program(s)? — DARS search
MPT Certificate; CIM Degree, Diploma, Certificate; Welding Diploma; Mechatronics Degree and Diploma

What impact will this new course have on other program(s)?
New course opportunities that require some changes to existing programs

Describe the rationale for offering this new course:
Courses of the MSSC core curriculum for intengration as part of the manufacturing alignment work of TAACCCT grant

Attach additional paperwork if necessary

As Faculty Developer, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

Prior to Preparing Documentation
☑ Initiation — idea was submitted to Department Chair(s) and Academic Dean/Director for discussion and support
☑ Explored existing course offerings to identify potential duplication
☑ Completed Intention Form

Continue the Curriculum Development Process
☑ Used online WIDS to create Common Course Outline (CCO)
☑ Identified:
  - concise 2-3 sentence course description
  - course name
  - lecture/lab credits and hour breakdown
  - course prefix and number
  - prerequisites
  - MnTC goal area — LAS courses
☑ Completed MnTC Goal Area Cross-walk Template (for LAS MnTC courses only)
☑ Created measurable course competencies and learning objectives
☑ Considered potential opportunities and impacts of the change on other programs/departments — DARS Search
☑ Proofread documentation for correct content on CCOs based on SCC example
☑ Proofread documentation for grammatical and typographical errors

Faculty Developer Signature  3 - 2 - 15
Date

As Primary Department Chair, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

☑ Documentation through email and department meetings made available for other faculty and programs to provide feedback, includes MnTC Goal Area Cross-walk Template(s)
☑ Proofread documentation for correct content and proper structure on CCOs based on SCC example
☑ Proofread documentation for grammatical and typographical errors
☑ I support this course  ☐ I do not support this course — please provide reason(s):

Primary Department Chair Signature  3 - 2 - 15
Date

New Course Form — 12/9/14 — Page 1
For LAS (MnTC courses) — As a LAS Department Chair, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

☐ LAS course (specifically MnTC courses), documentation through email and department meetings made available for other faculty and programs to provide feedback, includes MnTC Goal Area Cross-walk Template(s)

☐ I support this course    ☐ I do not support this course — please provide reason(s):

__________________________  ____________________________
LAS Department Chair Signature   Date

☐ I support this course    ☐ I do not support this course — please provide reason(s):

__________________________  ____________________________
LAS Department Chair Signature   Date

☐ I support this course    ☐ I do not support this course — please provide reason(s):

__________________________  ____________________________
LAS Department Chair Signature   Date

If all 4 LAS Department Chairs do not support the new course proposal, faculty developer can elevate the proposal to AASC for resolution.

As Academic Dean/Director, by signing this New Course form, the Curriculum Committee is assured of the following (check marks required):

☐ Identified potential opportunities and impacts of the change on other programs/departments — DARS search
☐ Reviewed MnTC Goal Area Cross-walk Template (for LAS MnTC courses only)
☐ MnTC Goal Area is appropriate based on MnSCU guidelines — Transfer Specialist consulted
☐ Verified credentials for faculty teaching the course
☐ Addressed the need for Class Maximum Change Request form
  ☐ No change in class maximum OR
  ☐ Change in class maximum — Class Maximum Change Request form completed with all necessary signatures

☐ I support this course    ☐ I do not support this course — please provide reason(s):

__________________________  2/23/15
Academic Dean/Director Signature   Date

If Academic Dean/Director does not support the new course proposal, faculty developer can elevate proposal to AASC for resolution.

Upload this signed form as a PDF to WIDS Shared Document folder — Curriculum Committee.

Following Curriculum Committee support, this form is completed with final signatures.

__________________________  3/6/2015
Curriculum Committee Chair Signature   Date

__________________________  3-20-15
Vice President of Student and Academic Affairs Signature   Date

New Course Form — 12/9/14 — Page 2