## Curriculum Proposal

### TADT 15-16 #24

<table>
<thead>
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<th>1.1 Summary</th>
<th>1.45 TADT 4867 Lean Principles and Practices (4 credits) to (3 credits)</th>
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<td>1.49 TADT 4875 Facilities Management (4 credits) to (3 credits); description change</td>
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<td>1.21 TADT 3460 3D Parametric Modeling and Printing (4 credits) to TADT 2461 Parametric 3D Modeling (3 credits); prerequisite change</td>
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<td>1.23 TADT 3610 Industrial Prototypes (4 credits) to (3 credits)</td>
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<td>1.25 TADT 3700 Production Planning and Control (4 credits) to Operations Planning and Control (3 credits)</td>
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<td>1.27 TADT 3877 Problem Solving (4 credits) to TADT 2877 Problem Solving (3 credits); description change</td>
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<tr>
<td>1.29 TADT 3878 Industrial/Engineering Production Studies (4 credits) to (3 credits)</td>
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</tr>
<tr>
<td>1.31 TADT 3885 Technical Sales, Service and Training (4 credits) to (3 credits)</td>
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<td>1.33 TADT 3887 Safety and Risk Management (4 credits) to (3 credits)</td>
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<tr>
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<td>1.137 Engineering Technology, B.S. major</td>
</tr>
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<td>1.41 TADT 4537 Industrial Design/Innovation (4 credits) to TADT 3537 (3 credits); prerequisite change</td>
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<td>1.157 Engineering Technology minor</td>
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<td>1.170 Signatures</td>
<td></td>
</tr>
</tbody>
</table>
Our Advisory Board members from the manufacturing and construction industries wanted to see more specific course titles and content topics to provide greater opportunities for TADT graduates. Twenty-seven courses in the TADT majors were reduced from 4 credits to 3 with the intent of allowing the existing faculty to create additional courses to address the need for more content and greater distinction between degrees.

As a result of reducing the course credits, minor adjustments were made in descriptions and outcomes. Twelve new courses were created, all of which can be covered by the existing faculty based on a rotation of courses.

Advising sheets for a four-year plan of study for all TADT degrees and emphases were created to allow students to plan their future at Bemidji State University. The advising sheets took into account course even/odd year rotations.

Four program modifications were required for TADT degrees (B. S. in Engineering Technology, B. S. in Project Management, B. A. S. in Applied Engineering, and the B. A. S. in Technology Management). The modifications alleviated close similarities between degrees, which had been an issue with the University and also with the Association of Technology Management and Applied Engineering, the accrediting association for the degrees.

One new program (form 6) was completed to create a minor in Engineering Technology with the hopes of attracting students from other majors who express an interest in hand-on lab, lab-based courses, and to create broader opportunities for student success.
______Graduate Curriculum
______Teacher Licensure Program(s)
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
  Undergraduate: 1110
  Graduate: 
Proposed Course Number(s), if different:
  Undergraduate: 1111
  Graduate: 

Current Course Title: Introduction to Project Management
Proposed Course Title, if different:

Current Course Description: Introduction to the principles and practices associated with project management in a professional environment, to include the utilization of project management methodology in support of planning the academic career as a student at Bemidji State University. In further support of the academic career, the course will also emphasize professional communications in various written and electronic formats.

Proposed Course Description, if different:

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s): none
  Undergraduate: 
  Graduate: 
Proposed Prerequisite(s), if different:
  Undergraduate: 
  Graduate: 

1) Reason(s) for change(s):
Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___ X___ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes Yes _____ No ___ X___
   Major Content Areas Yes _____ No ___ X___
   Projected Maximum Class Size (Cap) Yes _____ No ___ X___
4) Current Course fee(s) per student: $
for:
Proposed Course fee(s) per student, if different: $
for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs:

   Liberal Education:

The above “service area” programs/departments were notified of this modification on _______ (date) by ________________ (mail, email, or phone).

Please check one of the items below:

______ No comments were received from other programs or departments within one week of the notification.

______ Comments were received within one week of the notification, and are attached.
Course Modification Form

Current Course Number(s):
   Undergraduate: 1210
   Graduate:
Proposed Course Number(s), if different:
   Undergraduate:
   Graduate:

Current Course Title: Materials and Processes - Forming
Proposed Course Title, if different: Introduction to Manufacturing Processes I

Current Course Description: An overview of forming processes used in manufacturing such as welding, casting, spraying, compacting, bending, laminating, extruding, rolling, shaping, fastening, and drawing. Also included are the primary materials which are formed in the manufacturing environment and the application of the forming processes to contemporary industry.

Proposed Course Description: An introduction to manufacturing processes including; welding, metal forming, centrifugal casting, injection/blow molding, silicone molding/resin casting, and vacuum forming. This course will utilize various types of metals, plastic, and resin materials to construct projects.

Current Credits: 4

Proposed Credits, if different: 3

Current Prerequisite(s):
   Undergraduate:
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate:
   Graduate:

1) Reason(s) for change(s):
   With the reduction of credits from 4 to 3, it will afford the opportunity for the current faculty to create new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X___ No _____ If not, please drop the current course and submit a new course form for the modification.
3) Do these modifications change any of the following? **For all Yes answers, please provide updated information on the next page.**

<table>
<thead>
<tr>
<th>Category</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Learning Outcomes</td>
<td>___</td>
<td>X</td>
</tr>
<tr>
<td>Major Content Areas</td>
<td>___</td>
<td>X</td>
</tr>
<tr>
<td>Projected Maximum Class Size (Cap)</td>
<td>___</td>
<td>X</td>
</tr>
</tbody>
</table>

4) Current Course fee(s) per student: $

for:

Proposed Course fee(s) per student, if different: $

for:

5) Service Areas:

This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:

a) go to [http://www.bemidjistate.edu/academics/catalog/](http://www.bemidjistate.edu/academics/catalog/) and choose the most recent catalog(s),
b) click on “Areas of Study, and Course Descriptions,”
c) click on “PDF of Entire Catalog” in upper right,
d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

Non-licensure programs:

Teacher Licensure programs:

Liberal Education:

The above “service area” programs/departments were notified of this modification on _______ (date) by ____________________ (mail, email, or phone).

Please check one of the items below:

_____ No comments were received from other programs or departments within one week of the notification.

_____ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
   Undergraduate: 1220
   Graduate:
Proposed Course Number(s), if different:
   Undergraduate:
   Graduate:

Current Course Title: Materials and Processes - Separating
Proposed Course Title, if different: Introduction to Manufacturing Processes II

Current Course Description: A comprehensive study of the separating processes which occur in manufacturing production. Traditional and non-traditional processes are introduced, along with the primary materials which are utilized in the separation processes.

Current Credits: 3
Proposed Credits, if different:

Current Prerequisite(s):
   Undergraduate:
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate: No prerequisites required
   Graduate:

1) Reason(s) for change(s):
   Title change to reflect current content topics.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___ X ___ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes Yes ___ X ___
   Major Content Areas Yes ___ X ___
   Projected Maximum Class Size (Cap) Yes ___ X ___

4) Current Course fee(s) per student: $
   for:
Proposed Course fee(s) per student, if different: $

for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

Non-licensure programs:

Teacher Licensure programs:

Liberal Education:

The above “service area” programs/departments were notified of this modification on _______ (date) by __________________ (mail, email, or phone).

Please check one of the items below:

______ No comments were received from other programs or departments within one week of the notification.

______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Course Modification Form

Current Course Number(s):
  Undergraduate: 2250
  Graduate:
Proposed Course Number(s), if different:
  Undergraduate:
  Graduate:

Current Course Title: Construction Technology
Proposed Course Title, if different: Built Environment

Current Course Description: A broad study of the building and heavy construction industries. Emphasis is given to residential and light commercial applications of materials, methods, tools, equipment, structural systems and personnel. Prerequisite: TADT 1220.

Proposed Course Description, if different: A broad study of the built environment and the technology that was used to create it. Emphasis is given to residential and light commercial applications of print-reading, materials, and methods, while exploring past and present construction technologies. Prerequisite: TADT 1220.

Current Credits: 3
Proposed Credits, if different:

Current Prerequisite(s):
  Undergraduate: TADT 1220
  Graduate:
Proposed Prerequisite(s), if different:
  Undergraduate:
  Graduate:

1) Reason(s) for change(s): Title change and course description change to reflect current content topics.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ____X____ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? **For all Yes answers, please provide updated information on the next page.**

   Student Learning Outcomes ______ Yes _____ No ____X____
Major Content Areas  Yes _____  No __X__
Projected Maximum Class Size (Cap) Yes _____  No __X__

4) Current Course fee(s) per student: $
for:
Proposed Course fee(s) per student, if different: $
for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs:

   Liberal Education:

The above “service area” programs/departments were notified of this modification on _______ (date) by ___________________ (mail, email, or phone).

Please check one of the items below:

_____ No comments were received from other programs or departments within one week of the notification.

_____ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
   Undergraduate: 3100
   Graduate:
Proposed Course Number(s), if different:
   Undergraduate:
   Graduate:

Current Course Title: Principles and Practices of Professional Development
Proposed Course Title, if different: Principles of Professional Development

Current Course Description: An overview for professionals in the field of Industrial Technology. Students research and report on such topics as historical and future technological developments, personality inventories, trade and professional organizations, professional publications, and personal professional development plans. Educational degree requirements and policies to meet development plans are also reviewed. Prerequisite(s): Junior status or consent of instructor.

Proposed Course Description, if different: An overview for professionals in the fields of Technology & Management. The student will research and report on such topics as historical and future technological developments, personality inventories, trade and professional organizations, professional publications, and personal professional development plans. Educational degree requirements and policies to meet development plans are also reviewed. Prerequisite(s): Junior status or consent of instructor.

Current Credits: 2
Proposed Credits, if different: 3

Current Prerequisite(s): Junior status or consent of instructor.
   Undergraduate:
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate:
   Graduate:
1) Reason(s) for change(s):
Increasing the credits from 2 to 3 will help strengthen the TADT curriculum. Title change and course description change to reflect current content topics.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X___ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes Yes _____ No ___X___
   Major Content Areas Yes _____ No ___X___
   Projected Maximum Class Size (Cap) Yes _____ No ___X___

4) Current Course fee(s) per student: $
   for:
   Proposed Course fee(s) per student, if different: $
   for:

5) Service Areas:
   This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent catalog(s),
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   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs:

   Liberal Education:

   The above “service area” programs/departments were notified of this modification on ______ (date) by __________________ (mail, email, or phone).

   Please check one of the items below:
   ______ No comments were received from other programs or departments within one week of the notification.
   ______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
Undergraduate: 3217
Graduate:
Proposed Course Number(s), if different:
Undergraduate:
Graduate:

Current Course Title: Materials Science and Metallurgy
Proposed Course Title, if different:

Current Course Description: A study of the five primary classifications of materials used in manufacturing. Basic physical and chemical aspects are reviewed, including fundamental laboratory testing processes, structure analysis and engineering requirements. Prerequisite: Junior status or consent of instructor.

Proposed Course Description, if different: This course focuses on the properties of materials and is intended as an introduction to materials science. Materials are used in everything and many major engineering problems are materials problems. This course will provide students with the skills and knowledge necessary to solve many of these problems. This is primarily a lab based course that focuses on mechanical testing and structural analysis of polymers, metals, and ceramics. Prerequisites: TADT 2217, TADT 2877, MATH 1470, and junior status.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
Undergraduate: Junior status or consent of instructor
Graduate:
Proposed Prerequisite(s), if different:
Undergraduate: TADT 2217, TADT 2877, MATH 1470, and junior status
Graduate:

1) Reason(s) for change(s): Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry.
Prerequisites changed due to a program change.
2) May this modified course replace the current course for students remaining in the old curriculum? Yes __X____ No ______ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? **For all Yes answers, please provide updated information on the next page.**

   - Student Learning Outcomes: Yes _____ No __X___
   - Major Content Areas: Yes _____ No __X___
   - Projected Maximum Class Size (Cap): Yes _____ No __X___

4) Current Course fee(s) per student: $

   Proposed Course fee(s) per student, if different: $

5) Service Areas:

   This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to [http://www.bemidjistate.edu/academics/catalog/](http://www.bemidjistate.edu/academics/catalog/) and choose the most recent catalog(s),
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   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs:

   Liberal Education:

   The above “service area” programs/departments were notified of this modification on ________ (date) by __________________ (mail, email, or phone).

   Please check one of the items below:

   _____ No comments were received from other programs or departments within one week of the notification.

   _____ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
  Undergraduate: 3250
  Graduate:
Proposed Course Number(s), if different:
  Undergraduate:
  Graduate:

Current Course Title: Print Reading and Project Documentation
Proposed Course Title, if different:

Current Course Description: An introductory course in production specifications and contract
documentation usage. The course includes the study of materials, methods and labor functions
as they relate to use of specifications, documentation and drawings in construction related
industries. Prerequisite: Junior status or consent of instructor.

Proposed Course Description, if different: An introductory course in production specifications
and contract documentation usage. The course includes the study of materials, methods and
labor functions as they relate to use of specifications, documentation and drawings in
construction related industries. Prerequisite: TADT 2252 or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
  Undergraduate: Junior status or consent of instructor
  Graduate:
Proposed Prerequisite(s), if different:
  Undergraduate: TADT 2252 or consent of instructor
  Graduate:

1) Reason(s) for change(s):
Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the
creation of additional courses to give students greater variety of skills needed by industry.

2) May this modified course replace the current course for students remaining in the old
curriculum? Yes __X__ No _____ If not, please drop the current course and submit a new
course form for the modification.
3) Do these modifications change any of the following? **For all Yes answers, please provide updated information on the next page.**

- Student Learning Outcomes: Yes _____ No ____X____
- Major Content Areas: Yes _____ No ____X____
- Projected Maximum Class Size (Cap): Yes _____ No ____X____

4) Current Course fee(s) per student: $

for:

Proposed Course fee(s) per student, if different: $

for:

5) Service Areas:

This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:

a) go to [http://www.bemidjistate.edu/academics/catalog/](http://www.bemidjistate.edu/academics/catalog/) and choose the most recent catalog(s),

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c) click on “PDF of Entire Catalog” in upper right,

d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

Non-licensure programs:

Teacher Licensure programs:

Liberal Education:

The above “service area” programs/departments were notified of this modification on ________ (date) by __________________________ (mail, email, or phone).

Please check one of the items below:

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_____ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
  Undergraduate: 3260
  Graduate:
Proposed Course Number(s), if different:
  Undergraduate:
  Graduate:

Current Course Title: Project Bidding and Estimating
Proposed Course Title, if different:

Current Course Description: A foundational course in the analysis and determination of construction and manufacturing project costs. Bidding strategies and proposals; material, equipment and labor estimates, as well as overhead and profit are examined. Prerequisite: Junior status or consent of instructor.

Proposed Course Description, if different: A foundational course in the analysis and determination of construction and manufacturing project costs. Bidding strategies and proposals; material, equipment and labor estimates, as well as overhead and profit are examined. Prerequisite: TADT 3250, or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
  Undergraduate: Junior status or consent of instructor
  Graduate:
Proposed Prerequisite(s), if different:
  Undergraduate: TADT 3250, or consent of instructor.
  Graduate:

1) Reason(s) for change(s): Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X___ No _____ If not, please drop the current course and submit a new course form for the modification.
3) Do these modifications change any of the following? **For all Yes answers, please provide updated information on the next page.**

- Student Learning Outcomes: Yes _____ No __X___
- Major Content Areas: Yes _____ No __X___
- Projected Maximum Class Size (Cap): Yes _____ No __X___

4) Current Course fee(s) per student: $ 
for:

Proposed Course fee(s) per student, if different: $ 
for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:

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Teacher Licensure programs:

Liberal Education:

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______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
  Undergraduate: 3267
  Graduate:
Proposed Course Number(s), if different:
  Undergraduate:
  Graduate:

Current Course Title: Engineering Economic and Cost Analysis
Proposed Course Title, if different: Economic and Cost Analysis

Current Course Description: Introduction to the methods for determining costs related to developing and producing a product, for analyzing the present and future value of liquid and physical assets, and for analyzing the present and future value of a time series of payments. Other topics include basic accounting practices, cost estimating, and forecasting. Prerequisite: Junior status or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
  Undergraduate: Junior status or consent of instructor
  Graduate:
Proposed Prerequisite(s), if different:
  Undergraduate:
  Graduate:

1) Reason(s) for change(s):
Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes __X__ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes     Yes ____  No __X__
   Major Content Areas           Yes ____  No __X__
   Projected Maximum Class Size (Cap) Yes ____  No __X__
4) Current Course fee(s) per student: $
for:
Proposed Course fee(s) per student, if different: $
for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

Non-licensure programs: NO

Teacher Licensure programs: NO

Liberal Education: NO

The above “service area” programs/departments were notified of this modification on _______ (date) by __________________ (mail, email, or phone).

Please check one of the items below:

______ No comments were received from other programs or departments within one week of the notification.

______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
Undergraduate: 3460
Graduate:
Proposed Course Number(s), if different:
Undergraduate: 2461
Graduate:

Current Course Title: 3D Parametric Modeling and Printing
Proposed Course Title, if different: Parametric 3D Modeling

Current Course Description: Examines current topics, research, exploration, testing, and evaluation of computer-aided drafting and design programs for Windows computers. Prerequisite: Junior status or consent of the instructor. Prerequisites: TADT 1460 or consent of instructor

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
Undergraduate: Junior status or consent of instructor
Graduate:
Proposed Prerequisite(s), if different:
Undergraduate: TADT 1460 or consent of instructor
Graduate:

1) Reason(s) for change(s): Content should be mastered before the 3000 level courses are taken.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes __X__ No ______ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes Yes _____ No __X__
   Major Content Areas Yes _____ No __X__
   Projected Maximum Class Size (Cap) Yes _____ No __X__

4) Current Course fee(s) per student: $

for:
Proposed Course fee(s) per student, if different: $
for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs:

   Liberal Education:

The above “service area” programs/departments were notified of this modification on _______ (date) by __________________ (mail, email, or phone).

Please check one of the items below:

______ No comments were received from other programs or departments within one week of the notification.

______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
Undergraduate: 3610
Graduate:
Proposed Course Number(s), if different:
Undergraduate:
Graduate:

Current Course Title: Industrial Prototypes
Proposed Course Title, if different:

Current Course Description: Development of industrial quality prototypes from engineering or designer prints. Includes the selection of materials and processes for production feasibility and market testing prototypes. Prerequisite: Junior status or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
Undergraduate: Junior status or consent of instructor
Graduate:
Proposed Prerequisite(s), if different:
Undergraduate:
Graduate:

1) Reason(s) for change(s): With the reduction of credits from 4 to 3, it will afford the opportunity for the current faculty to create new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes __X___ No ______ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
Student Learning Outcomes Yes _____ No _X___
Major Content Areas Yes _____ No _X___
Projected Maximum Class Size (Cap) Yes _____ No _X___

4) Current Course fee(s) per student: $
for:
Proposed Course fee(s) per student, if different: $

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

Non-licensure programs:

Teacher Licensure programs:

Liberal Education:

The above “service area” programs/departments were notified of this modification on _______ (date) by ___________________ (mail, email, or phone).

Please check one of the items below:

______ No comments were received from other programs or departments within one week of the notification.

______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
   Undergraduate: 3700
   Graduate:
Proposed Course Number(s), if different:
   Undergraduate:
   Graduate:

Current Course Title: Production Planning and Control
Proposed Course Title, if different: Operations Planning and Control

Current Course Description: The concepts, tools, techniques, and quantitative methods used to plan for and control operations in the production of goods and services. Topics include, but are not limited to, traditional inventory management, just-in-time inventory, materials- and enterprise-resource planning, facilities location and layout, process strategies, aggregate planning, scheduling, maintenance and reliability, project management, and supply chain management. Prerequisite: Junior status or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
   Undergraduate: Junior status or consent of instructor
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate:
   Graduate:

1) Reason(s) for change(s):
Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X___ No _____ If not, please drop the current course and submit a new course form for the modification.
3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.

- Student Learning Outcomes: Yes _____ No __X__
- Major Content Areas: Yes _____ No __X__
- Projected Maximum Class Size (Cap): Yes _____ No __X__

4) Current Course fee(s) per student: $
   
   Proposed Course fee(s) per student, if different: $

5) Service Areas:
   This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs: NO
   Teacher Licensure programs: NO
   Liberal Education: NO

   The above “service area” programs/departments were notified of this modification on _______ (date) by __________________ (mail, email, or phone).

Please check one of the items below:

_____ No comments were received from other programs or departments within one week of the notification.

_____ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
   Undergraduate: 3877
   Graduate:
Proposed Course Number(s), if different:
   Undergraduate: 2877
   Graduate:

Current Course Title: Engineering Problem Solving
Proposed Course Title, if different:

Current Course Description: Investigates the terminology, concepts, and analytical techniques essential to solving complex problems which occur in manufacturing. Prerequisite: Junior status or consent of the instructor.

Proposed Course Description: Investigates the terminology, concepts, and analytical techniques essential to solving complex problems which occur in manufacturing.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
   Undergraduate: Junior status or consent of instructor
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate: None
   Graduate:

1) Reason(s) for change(s): Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry. Prerequisites changed due to a program change.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X___ No ______ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
Student Learning Outcomes   Yes _____  No __X___
Major Content Areas          Yes _____  No __X___
Projected Maximum Class Size (Cap) Yes _____  No __X___

4) Current Course fee(s) per student: $ 
   for: 
   Proposed Course fee(s) per student, if different: $ 
   for: 

5) Service Areas: 
   This course is a requirement or an elective in the programs/areas listed below. To locate where 
   this course appears please search the online catalog, as follows: 
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent 
      catalog(s), 
   b) click on “Areas of Study, and Course Descriptions,” 
   c) click on “PDF of Entire Catalog” in upper right, 
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form. 

      Non-licensure programs: 

      Teacher Licensure programs: 

      Liberal Education: 

      The above “service area” programs/departments were notified of this modification on ________ (date) by __________________ (mail, email, or phone).

      Please check one of the items below: 

      ______  No comments were received from other programs or departments within one week of 
               the notification.

      ______  Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
   Undergraduate: 3878
   Graduate:
Proposed Course Number(s), if different:
   Undergraduate:
   Graduate:

Current Course Title: Industrial/Engineering Production Studies
Proposed Course Title, if different:

Current Course Description: Study and visitations/assessments of the various aspects of industry, particularly in the engineering and technology management fields. The strategy of benchmarking will be used as a primary tool to complete course research. Prerequisite: Junior status or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
   Undergraduate: Junior status or consent of instructor
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate:
   Graduate:

1) Reason(s) for change(s): With the reduction of credits from 4 to 3, it will afford the opportunity for the current faculty to create new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X__ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes  Yes _____ No ___X___
   Major Content Areas  Yes _____ No ___X___
   Projected Maximum Class Size (Cap)  Yes _____ No ___X___
4) Current Course fee(s) per student: $
for:
Proposed Course fee(s) per student, if different: $
for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where
this course appears please search the online catalog, as follows:
a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent
catalog(s),
b) click on “Areas of Study, and Course Descriptions,”
c) click on “PDF of Entire Catalog” in upper right,
d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

Non-licensure programs:

Teacher Licensure programs:

Liberal Education:

The above “service area” programs/departments were notified of this modification on __________
(date) by ____________________ (mail, email, or phone).

Please check one of the items below:

______ No comments were received from other programs or departments within one week of
the notification.

______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
  Undergraduate: 3885
  Graduate:
Proposed Course Number(s), if different:
  Undergraduate:
  Graduate:

Current Course Title: Technical Sales, Service and Training
Proposed Course Title, if different:

Current Course Description: The philosophy and practice of sales and service in a technical environment, including the methodology, planning and design of sales activity, and developing technical proposals and presentations. Course also examines aspects of assessing, designing and implementing human resource training programs. Prerequisite: Junior status or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
  Undergraduate: Junior status or consent of instructor
  Graduate:
Proposed Prerequisite(s), if different:
  Undergraduate:
  Graduate:

1) Reason(s) for change(s):
Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X___ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes Yes ____ No ___X___
   Major Content Areas Yes ____ No ___X___
   Projected Maximum Class Size (Cap) Yes ____ No ___X___
4) Current Course fee(s) per student: $
for:
Proposed Course fee(s) per student, if different: $
for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where
this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent
catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs:

   Liberal Education:

   The above “service area” programs/departments were notified of this modification on ________
(date) by ____________________ (mail, email, or phone).

Please check one of the items below:

______ No comments were received from other programs or departments within one week of
the notification.

______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
  Undergraduate: 3887
  Graduate:
Proposed Course Number(s), if different:
  Undergraduate:
  Graduate:

Current Course Title: Safety and Risk Management
Proposed Course Title, if different:

Current Course Description: Introduction to the general principles, regulations, responsibilities, policies and practices associated with Safety and Risk Management from the perspective of a manager in operations, facilities and/or construction. Prerequisite: Junior status or consent of the instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
  Undergraduate: Junior status or consent of instructor
  Graduate:
Proposed Prerequisite(s), if different:
  Undergraduate:
  Graduate:

1) Reason(s) for change(s):
Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes __X__ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes Yes ____ No __X__
   Major Content Areas Yes ____ No __X__
   Projected Maximum Class Size (Cap) Yes ____ No __X__
4) Current Course fee(s) per student: $
    for:
Proposed Course fee(s) per student, if different: $
    for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where
this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent
catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

    Non-licensure programs:

    Teacher Licensure programs:

    Liberal Education:

The above “service area” programs/departments were notified of this modification on ________
(date) by ____________________ (mail, email, or phone).

Please check one of the items below:

   ______ No comments were received from other programs or departments within one week of
   the notification.

   ______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2  
Updated 9.19.15

Course Modification Form

Current Course Number(s):
   Undergraduate: 4259
   Graduate:
Proposed Course Number(s), if different:
   Undergraduate:
   Graduate:

Current Course Title: Construction Management
Proposed Course Title, if different:

Current Course Description: An advanced study of construction project planning, contracting, and supervision. The management functions of a construction business environment are emphasized. Attention is given to the differences between construction management and construction contracting as well as a focus on the concept of green building. Prerequisite: Junior status or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
   Undergraduate: Junior status or consent of instructor
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate:
   Graduate:

1) Reason(s) for change(s):
Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___ X ___ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes Yes _____ No ___ X ___
   Major Content Areas Yes _____ No ___ X ___
   Projected Maximum Class Size (Cap) Yes _____ No ___ X ___
4) Current Course fee(s) per student: $
for:
Proposed Course fee(s) per student, if different: $
for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs:

   Liberal Education:

The above “service area” programs/departments were notified of this modification on _______ (date) by ____________________ (mail, email, or phone).

Please check one of the items below:

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______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
  Undergraduate: 4260
  Graduate:
Proposed Course Number(s), if different:
  Undergraduate:
  Graduate:

Current Course Title: Computerized Construction Estimating
Proposed Course Title, if different:

Current Course Description: An exploration and study of computerized construction estimating methods, software, and approaches for estimating, planning, and documenting construction projects. Prerequisite: Junior status.

Proposed Course Description, if different:

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
  Undergraduate: Junior status
  Graduate:
Proposed Prerequisite(s), if different:
  Undergraduate: TADT 3260 or consent of instructor
  Graduate:

1) Reason(s) for change(s):
Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X___ No ______ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes       Yes _____ No ___X___
   Major Content Areas             Yes _____ No ___X___
Projected Maximum Class Size (Cap) Yes _____ No __X___

4) Current Course fee(s) per student: $

for:
Proposed Course fee(s) per student, if different: $

for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs:

   Liberal Education:

The above “service area” programs/departments were notified of this modification on ________ (date) by ____________________ (mail, email, or phone).

Please check one of the items below:

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______  Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
  Undergraduate: 4385
  Graduate:
Proposed Course Number(s), if different:
  Undergraduate:
  Graduate:

Current Course Title: Sustainability and Emerging Technologies
Proposed Course Title, if different:

Current Course Description: A study of sustainability and the emerging technologies that support its major concepts in a laboratory-based course. Students will experience a variety of emerging technologies and understand how such content may be applied in design, engineering, manufacturing and/or the construction industries. Prerequisite: Junior status or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
  Undergraduate: Junior status or consent of instructor
  Graduate:
Proposed Prerequisite(s), if different:
  Undergraduate:
  Graduate:

1) Reason(s) for change(s): With the reduction of credits from 4 to 3, it will afford the opportunity for the current faculty to create new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X___ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   
   Student Learning Outcomes Yes _____ No ___X___
   Major Content Areas Yes _____ No ___X___
   Projected Maximum Class Size (Cap) Yes _____ No ___X___
4) Current Course fee(s) per student: $
   for:

   Proposed Course fee(s) per student, if different: $
   for:

5) Service Areas:
   This course is a requirement or an elective in the programs/areas listed below. To locate where
   this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent
   catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs:

   Liberal Education:

   The above “service area” programs/departments were notified of this modification on ________
   (date) by ____________________ (mail, email, or phone).

   Please check one of the items below:

   ______ No comments were received from other programs or departments within one week of
   the notification.

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BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
   Undergraduate: 4537
   Graduate:
Proposed Course Number(s), if different:
   Undergraduate: 3537
   Graduate:

Current Course Title: Industrial Design/Innovation
Proposed Course Title, if different:

Current Course Description: Exploration of the history, philosophy and application of industrial design. Includes defining specific customer needs and the research, identification, testing, assessment and implementation of effective solutions to technological problems. Also included is the development of a design proposal, written and graphic documentation, and the ethical, environmental, social and economic impacts of design solutions. Incorporates the role, purpose and relationship of innovation in business and industry with the design process. Prerequisite: Junior status or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
   Undergraduate: Junior status or consent of instructor
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate: TADT 2461, TADT 2465 or consent of instructor
   Graduate:

1) Reason(s) for change(s):
With the reduction of credits from 4 to 3, it will afford the opportunity for the current faculty to create new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X___ No ______ If not, please drop the current course and submit a new course form for the modification.
3) Do these modifications change any of the following? **For all Yes answers, please provide updated information on the next page.**

   - Student Learning Outcomes: Yes _____ No ___X___
   - Major Content Areas: Yes _____ No ___X___
   - Projected Maximum Class Size (Cap): Yes _____ No ___X___

4) Current Course fee(s) per student: $
   
   Proposed Course fee(s) per student, if different: $

5) Service Areas:

   This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to [http://www.bemidjistate.edu/academics/catalog/](http://www.bemidjistate.edu/academics/catalog/) and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs:

   Liberal Education:

   The above “service area” programs/departments were notified of this modification on ________ (date) by ____________________ (mail, email, or phone).

Please check one of the items below:

   _____ No comments were received from other programs or departments within one week of the notification.

   _____ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
   Undergraduate: 4778
   Graduate:
Proposed Course Number(s), if different:
   Undergraduate:
   Graduate:

Current Course Title: Advanced Topics in Technology
Proposed Course Title, if different:

Current Course Description: Current topics, or emerging research or exploration and assessment of topics in the applied engineering, industrial technology, and/or technology management fields, or any related field. Prerequisite: Junior status or consent of the instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
   Undergraduate: Junior status or consent of the instructor
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate:
   Graduate:

1) Reason(s) for change(s): With the reduction of credits from 4 to 3, it will afford the opportunity for the current faculty to create new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X___ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes  Yes _____ No ___X___
   Major Content Areas  Yes _____ No ___X___
   Projected Maximum Class Size (Cap)  Yes _____ No ___X___

4) Current Course fee(s) per student: $

for:
Proposed Course fee(s) per student, if different: $
for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

Non-licensure programs:

Teacher Licensure programs:

Liberal Education:

The above “service area” programs/departments were notified of this modification on __________ (date) by __________________ (mail, email, or phone).

Please check one of the items below:

______ No comments were received from other programs or departments within one week of the notification.

______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Course Modification Form

Current Course Number(s):
  Undergraduate: 4867
  Graduate:
Proposed Course Number(s), if different:
  Undergraduate:
  Graduate:

Current Course Title: Lean Principles and Practices
Proposed Course Title, if different:

Current Course Description: This course teaches the principles and practical application of Lean methods and tools as they would apply in various types of organizational value streams allowing for continuously improving operational performances that are fast, flexible, focused and organizationally inclusive for all stakeholders. Prerequisite: Junior status or consent of the instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
  Undergraduate: Junior status or consent of instructor
  Graduate:
Proposed Prerequisite(s), if different:
  Undergraduate:
  Graduate:

1) Reason(s) for change(s): With the reduction of credits from 4 to 3, it will afford the opportunity for the current faculty to create new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X___ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes Yes _____ No ___X___
   Major Content Areas Yes _____ No ___X___
   Projected Maximum Class Size (Cap) Yes _____ No ___X___
4) Current Course fee(s) per student: $
   for:
   Proposed Course fee(s) per student, if different: $
   for:

5) Service Areas:
   This course is a requirement or an elective in the programs/areas listed below. To locate where
   this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent
   catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs:

   Liberal Education:

   The above “service area” programs/departments were notified of this modification on _______ 
   (date) by ____________________ (mail, email, or phone).

   Please check one of the items below:

   ______ No comments were received from other programs or departments within one week of
   the notification.

   ______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
   Undergraduate: 4873
   Graduate:
Proposed Course Number(s), if different:
   Undergraduate:
   Graduate:

Current Course Title: Emphasis Related Capstone
Proposed Course Title, if different:

Current Course Description: A multifaceted project that utilizes the students culminating academic and intellectual experience to think critically, solve a challenging problem, and develop a solution using oral communication, public speaking, research skills, media literacy, teamwork, planning, self-sufficiency, or goal setting. Prerequisite: Senior status or consent of the instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
   Undergraduate: Senior status or consent of instructor
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate:
   Graduate:

1) Reason(s) for change(s):
Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___ X___ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes Yes _____ No __X__
   Major Content Areas Yes _____ No __X__
   Projected Maximum Class Size (Cap) Yes _____ No __X__
4) Current Course fee(s) per student: $
for:
Proposed Course fee(s) per student, if different: $
for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where
this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent
catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

Non-licensure programs: No

Teacher Licensure programs: No

Liberal Education: No

The above “service area” programs/departments were notified of this modification on ________
date) by ____________________ (mail, email, or phone).

Please check one of the items below:

______ No comments were received from other programs or departments within one week of
the notification.

______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
   Undergraduate: 4875
   Graduate:
Proposed Course Number(s), if different:
   Undergraduate:
   Graduate:

Current Course Title: Facilities Management
Proposed Course Title, if different:

Current Course Description: This course is an exploration of the concepts and organization of an integrated approach to operating, maintaining, improving and adapting the buildings and infrastructure to an organization in order to create an environment that strongly supports the primary objectives of that organization. It includes a focus on preventive maintenance, planning and scheduling of maintenance, OSHA and the development of safety awareness. Prerequisite: Junior status or consent of instructor.

Proposed Course Description, if different: This course is an exploration of the concepts and organization of an integrated approach to operating, maintaining, improving and adapting the buildings and infrastructure of an organization/institution in order to create an environment that strongly supports the primary objectives of the organization. Prerequisite: Junior status or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
   Undergraduate: Junior status or consent of instructor
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate:
   Graduate:

1) Reason(s) for change(s):
Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry.
2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X____ No ______ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? **For all Yes answers, please provide updated information on the next page.**

- Student Learning Outcomes: **Yes _____ No __X____**
- Major Content Areas: **Yes _____ No __X____**
- Projected Maximum Class Size (Cap): **Yes _____ No __X____**

4) Current Course fee(s) per student: $
for:
Proposed Course fee(s) per student, if different: $
for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to [http://www.bemidjistate.edu/academics/catalog/](http://www.bemidjistate.edu/academics/catalog/) and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs:

   Liberal Education:

The above “service area” programs/departments were notified of this modification on __________ (date) by __________________ (mail, email, or phone).

Please check one of the items below:

_____ No comments were received from other programs or departments within one week of the notification.

_____ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
   Undergraduate: 4878
   Graduate:
Proposed Course Number(s), if different:
   Undergraduate:
   Graduate:

Current Course Title: Quality Assurance
Proposed Course Title, if different:

Current Course Description: This course teaches the theory and applications of statistical analysis, quality problem solving and implementation. Prerequisite: Junior status or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
   Undergraduate: Junior status or consent of instructor
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate:
   Graduate:

1) Reason(s) for change(s): With the reduction of credits from 4 to 3, it will afford the opportunity for the current faculty to create new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes __X___ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes       Yes _____ No __X___
   Major Content Areas            Yes _____ No __X___
   Projected Maximum Class Size (Cap) Yes _____ No __X___

4) Current Course fee(s) per student: $
   for:
Proposed Course fee(s) per student, if different: $
for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where
this course appears please search the online catalog, as follows:
a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent
catalog(s),
b) click on “Areas of Study, and Course Descriptions,”
c) click on “PDF of Entire Catalog” in upper right,
d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

Non-licensure programs:

Teacher Licensure programs:

Liberal Education:

The above “service area” programs/departments were notified of this modification on ________
date) by __________________ (mail, email, or phone).

Please check one of the items below:

______ No comments were received from other programs or departments within one week of
the notification.

______ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
Undergraduate: 4879
Graduate:
Proposed Course Number(s), if different:
Undergraduate:
Graduate:

Current Course Title: Service Process Design and Improvement
Proposed Course Title, if different: Service Process/improvement

Current Course Description: The design and improvement of work processes in the service industries and in the service functions of manufacturing organizations. Topics include, but are not limited to, the tools and techniques required for designing, setting up, and managing service systems; improving service quality; the impacts of technology on service management; managing nonprofit service organizations; services strategies; and the positioning and marketing of services. Prerequisite: Junior status or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
Undergraduate: Junior status or consent of instructor
Graduate:
Proposed Prerequisite(s), if different:
Undergraduate:
Graduate:

1) Reason(s) for change(s):
Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes ___X__ No _____ If not, please drop the current course and submit a new course form for the modification.

3) Do these modifications change any of the following? For all Yes answers, please provide updated information on the next page.
   Student Learning Outcomes Yes _____ No ___X___
   Major Content Areas Yes _____ No ___X___
Projected Maximum Class Size (Cap) Yes _____ No __X___

4) Current Course fee(s) per student: $
   for:
   Proposed Course fee(s) per student, if different: $
   for:

5) Service Areas:
   This course is a requirement or an elective in the programs/areas listed below. To locate where
   this course appears please search the online catalog, as follows:
   a) go to http://www.bemidjistate.edu/academics/catalog/ and choose the most recent
   catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   Non-licensure programs:

   Teacher Licensure programs:

   Liberal Education:

   The above “service area” programs/departments were notified of this modification on _______ (date) by __________________ (mail, email, or phone).

Please check one of the items below:

      _____ No comments were received from other programs or departments within one week of
      the notification.

      _____ Comments were received within one week of the notification, and are attached.
BSU Curriculum Forms

Form 2
Updated 9.19.15

Course Modification Form

Current Course Number(s):
   Undergraduate: 4897
   Graduate:
Proposed Course Number(s), if different:
   Undergraduate: 4893
   Graduate:

Current Course Title: Project Management
Proposed Course Title, if different: Applied Project Management

Current Course Description: The combination of people, systems and techniques required to coordinate the resources needed to complete a project according to established goals, standards and deadlines. Includes the study of organizational structure, supervision and the related work of the supervisor as leader, staff relations and the improvement of industrial operations. Prerequisite: Junior status or consent of instructor.

Proposed Course Description, if different: This course is intended to provide the learner with the understanding, tools and techniques necessary to effectively plan, coordinate and manage the combination of people, systems and other resources required to complete a project in alignment with established objectives, standards and deadlines. Prerequisite: TADT 3112 or consent of instructor.

Current Credits: 4
Proposed Credits, if different: 3

Current Prerequisite(s):
   Undergraduate: Junior status or consent of instructor
   Graduate:
Proposed Prerequisite(s), if different:
   Undergraduate: TADT 3112 Leadership in a Team Environment or consent of instructor
   Graduate:

1) Reason(s) for change(s):
Reducing the credits from 4 to 3 will help strengthen the TADT curriculum by allowing the creation of additional courses to give students greater variety of skills needed by industry.

2) May this modified course replace the current course for students remaining in the old curriculum? Yes __X__ No _____ If not, please drop the current course and submit a new course form for the modification.
3) Do these modifications change any of the following? **For all Yes answers, please provide updated information on the next page.**

- Student Learning Outcomes  Yes _____ No __X__
- Major Content Areas     Yes _____ No __X__
- Projected Maximum Class Size (Cap) Yes _____ No __X__

4) Current Course fee(s) per student: $
   for:
   Proposed Course fee(s) per student, if different: $
   for:

5) Service Areas:
This course is a requirement or an elective in the programs/areas listed below. To locate where this course appears please search the online catalog, as follows:
   a) go to [http://www.bemidjistate.edu/academics/catalog/](http://www.bemidjistate.edu/academics/catalog/) and choose the most recent catalog(s),
   b) click on “Areas of Study, and Course Descriptions,”
   c) click on “PDF of Entire Catalog” in upper right,
   d) press Ctrl F, and enter the prefix and number of the course(s) from this form.

   **Non-licensure programs:**
   Environmental Studies, B.S. major Environmental Management Emphasis
   Teacher Licensure programs:
   Liberal Education:

The above “service area” programs/departments were notified of this modification on __12.4.15_____ by __email_____

Please check one of the items below:

- _____ No comments were received from other programs or departments within one week of the notification.
- __X____ Comments were received within one week of the notification, and are attached. *See Appendix B

**See attached syllabus.**
Bemidji State University
Course Number: TADT 4893 Applied Project Management
Course Credits 3
[Course number and title must match the proposal form or current catalog]

Contact Information:
Instructor: ______________________________
Office: ______________________________
Office Hours: __________________________
Telephone: ____________________________
E-mail: ______________________________

Course Description:
This course is intended to provide the learner with the understanding, tools and techniques necessary to effectively plan, coordinate and manage the combination of people, systems and other resources required to complete a project in alignment with established objectives, standards and deadlines.

Prerequisites/Co-Requisites:
TADT 3112 Leadership in a Team Environment or consent of instructor

Textbooks/Materials:
[Include textbooks and materials. (If there are no textbooks required for the class, indicate that here as well.)]

Grades:
Course related activities are scored using the category weights shown below with final grades based upon the following percent scale:
90 to 100 = A
80 to 89 = B
70 to 79 = C
60 to 69 = D
Below 59 = F

Graded Activity Apportionment:
Class Participation 25%
Quizzes/Tests 30%
Written Assignments 10%
Team Project 15%
Final Exam 20%

Learning Outcomes:
Students will:
- Apply project management methodology to select and complete a team-based real world project.
- Work collaboratively in a team environment.
- Analyze and control project schedule and budget components.
- Evaluate the success of the project in terms of deliverables and customer satisfaction.
BSU Curriculum Forms

Form 3
Updated: 9.19.15

New Course Form

Course Number: TADT 3111
  Undergraduate: Yes
  Graduate:

Course Title: Project Management Methodology

Course Description:
This course is intended to provide the learner with the understanding, tools and techniques necessary to effectively plan, coordinate and manage the combination of people, systems and other resources required to complete a project in alignment with established goals, standards and deadlines. In addition, elements of leadership principles and practices will be studied to support team development and project success.

Credits: 3

Prerequisite(s):
  Undergraduate:
  Graduate:

1. Reason(s) for creating this course:
With the reduction of credits from 4 to 3, it will afford the opportunity for the current faculty to create new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2. How often will this course be offered? Once per year.

3. What are the student learning outcomes for the course (please precede each outcome with "Students will...")?
   • Student will apply project management methodology to select and plan a team-based real world project.
   • Student will work collaboratively in a team environment.
   • Student will analyze and plan project schedule, resource requirements and budget components.
   • Student will develop evaluation methodology for measuring the success of the project in terms of deliverables and customer satisfaction.
   • Student will critique their own performance as well as their fellow team members.

4. What are the major content areas for the course?
   • Project Initiation Phase
   • Project Planning Phase
   • Project Quality and Control Phase

5. Is this course repeatable for credit, and if so, what is the maximum number of credits that can be earned? No
6. If this course is intended primarily for off-campus delivery (not offered on campus), what delivery mechanism will be used? Delivery via Brightspace D2L

7. What is the projected maximum class size (cap)? 25

8. What qualified faculty will be available to teach this course? David Towley, Dr. Tim Brockman, Dr. Mahmoud Al-Odeh

NOTE WELL: Department and dean, in approving this proposal, attest both to the adequacy of the qualifications of faculty here named, and to their availability to teach the course at the frequency specified above, without excessive overload or disruption to other curriculum.

9. What additional library and other resources need or should be provided for this course, that are not already available? Microsoft Project software

10. What special personal property or service fee(s) would be charged to students taking this course? These charges would be for 1) items that are retained by the student and have an educational or personal value beyond the classroom, or 2) services that are on the student’s behalf (see MnSCU Board Policy 5.11).
   Amount per student: $ 0
   For:

11. Attach a sample syllabus for the course. Note: if this course is double-numbered (u-grad/grad), the syllabus must include an additional component for graduate students.
Bemidji State University
Course Number: TADT 3111 Project Management Methodology
Course Credits 3

[Course number and title must match the proposal form or current catalog]

Contact Information:
Instructor: ____________________________________________
Office: ________________________________________________
Office Hours: __________________________________________
Telephone: ____________________________________________
E-mail: _______________________________________________

Course Description:
This course is intended to provide the learner with the understanding, tools and techniques necessary to effectively plan, coordinate and manage the combination of people, systems and other resources required to complete a project in alignment with established goals, standards and deadlines. In addition, elements of leadership principles and practices will be studied to support team development and project success.

Prerequisites/Co-Requisites:
Junior status or permission of instructor.

Textbooks/Materials:
TBD

[Include textbooks and materials. (If there are no textbooks required for the class, indicate that here as well.)]

Grades:
Course related activities are scored using the category weights shown below with final grades based upon the following percent scale;
90 to 100 = A
80 to 89 = B
70 to 79 = C
60 to 69 = D
Below 59 = F

Graded Activity Apportionment;
Class Participation  25%
Quizzes/Tests        30%
Written Assignments 10%
Team Project        15%
Final Exam          20%

Learning Outcomes:
Students will:
- Apply project management methodology to select and plan a team-based real world project.
- Work collaboratively in a team environment.
• Analyze and plan project schedule, resource requirements and budget components.
• Develop evaluation methodology for measuring the success of the project in terms of deliverables and customer satisfaction.
• Critique their own performance as well as their fellow team members.

Major Content Areas:
• Project Initiation Phase
• Project Planning Phase
• Project Quality and Control Phase

Outline/Assignments:
• Identify and plan a team-based project including schedule creation and resource requirement analysis.

Topics/Schedule:
[List the topics covered in the class by week below ~or~ use MWF template found at: http://www.bemidjistate.edu/faculty_staff/professional_development/syllabus_templates/Fall%2014%20M%20W%20F.DOCX ~or~ use T TH template found at http://www.bemidjistate.edu/faculty_staff/professional_development/syllabus_templates/Fall%2014%20T%20TH.DOCX ]

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<tr>
<th>Week</th>
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<td>Week 16</td>
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</tbody>
</table>

Course and/or Department Specific Policies:
All writing and discussion assignments, tests, the course project and the Final examination cannot be made up without the prior approval of the instructor and such approval shall not be given except in very extreme cases. Documentation may be required to support your request.

Academic Integrity:
BSU students are expected to practice the highest standards of ethics, honesty and integrity in all of their academic work. Any form of academic dishonesty (e.g., plagiarism, cheating and
misrepresentation) may result in disciplinary action. Possible disciplinary actions may include failure for part of all of a course as well as suspension from the University.

**Students with Special Needs:**
We would like to make sure that all the materials, discussions and activities that are part of the course are accessible to you. If you would like to request accommodations or other services, please forward your request as soon as possible. It is possible to contact Disability Services, Bangsberg Hall, 101. Phone: 218/755-3883 or E-mail address Disabilityservices@bemidjistate.edu. Also available through the Minnesota Relay Service at 1-800-627-3529.

**Mental Health & Counseling:**
You may experience mental health concerns or stressful events that may lead to diminished academic performance. The Student Center for Health & Counseling is available to assist you with concerns.
BSU Curriculum Forms

Form 3
Updated: 9.19.15

New Course Form

Course Number: TADT 3112
   Undergraduate: Yes
   Graduate:

Course Title: Leadership in a Team Environment

Course Description:
This course is intended to provide engineering and technology management students with the understanding, strategies and methods necessary to engage, influence, and empower followers in the successful accomplishment of organizational goals as influenced by the engineering methodologies of discoveries in a team based environment. Prerequisites: TADT 1111 or TADT 3111.

Credits: 3

Prerequisite(s):
   Undergraduate: TADT 1111 or TADT 3111
   Graduate:

1. Reason(s) for creating this course: To meet the recommendations of the Technical/Engineering advisory board members.

2. How often will this course be offered? Once per year.

3. What are the student learning outcomes for the course (please precede each outcome with "Students will...")?
   - Students will explore the history and evolution of leadership theory including an investigation of trait, behavior and contingency based leadership theory.
   - Students will explore the engineering methodologies for developing and innovating projects.
   - Students will analyze, compare and contrast Transactional, Transformational and Servant Leadership principles. Including effects of each on team member engagement.
   - Students will develop and deploy team based performance objectives.
   - Students will develop performance improvement coaching strategies.
   - Students will evaluate team member performance to objectives.
   - Students will critique their own performance in support of team objectives.

4. What are the major content areas for the course?
   - Historical Leadership Theory.
   - Engineering Methodologies
   - Evolutionary phases of leadership theory.
- Team dynamics and process coaching.
- Modern approaches to leadership.
- Performance appraisal and coaching process.

5. Is this course repeatable for credit, and if so, what is the maximum number of credits that can be earned? No

6. If this course is intended primarily for off-campus delivery (not offered on campus), what delivery mechanism will be used? On-campus course.

7. What is the projected maximum class size (cap)? 25

8. What qualified faculty will be available to teach this course? David Towley, Dr. Tim Brockman, Dr. Mahmoud Al-Odeh

NOTE WELL: Department and dean, in approving this proposal, attest both to the adequacy of the qualifications of faculty here named, and to their availability to teach the course at the frequency specified above, without excessive overload or disruption to other curriculum.

9. What additional library and other resources need or should be provided for this course, that are not already available? None

10. What special personal property or service fee(s) would be charged to students taking this course? These charges would be for 1) items that are retained by the student and have an educational or personal value beyond the classroom, or 2) services that are on the student’s behalf (see MnSCU Board Policy 5.11).

   Amount per student: $ 0
   For:

11. Attach a sample syllabus for the course. Note: if this course is double-numbered (u-grad/grad), the syllabus must include an additional component for graduate students.
Bemidji State University
Course Number: TADT 3112 Leadership in a Team Environment
Course Credits 3
[Course number and title must match the proposal form or current catalog]

Contact Information:
Instructor: ____________________________
Office: ________________________________
Office Hours: ____________________________
Telephone: ______________________________
E-mail: ________________________________

Course Description:
This course is intended to provide engineering and technology management students with the understanding, strategies and methods necessary to engage, influence, and empower followers in the successful accomplishment of organizational goals as influenced by the engineering methodologies of discoveries in a team based environment. Prerequisites: TADT 1111 or TADT 3111.

Prerequisites/Co-Requisites:
TADT 1111 or TADT 3111

Textbooks/Materials:
TBD

Grades:
Course related activities are scored using the category weights shown below with final grades based upon the following percent scale;
90 to 100 = A
80 to 89 = B
70 to 79 = C
60 to 69 = D
Below 59 = F

Graded Activity Apportionment:
Class Participation 25%
Quizzes/Tests 30%
Written Assignments 10%
Team Project 15%
Final Exam 20%

Reservation of Rights:
The instructor reserves the right to alter the grade category weights and apportionment related to completed course activities as may be deemed necessary or desirable.

Learning Outcomes:
Students will:
• Explore the history and evolution of leadership theory including an investigation of trait, behavior and contingency based leadership theory.
• Explore the engineering methodologies for developing and innovating projects.
• Analyze, compare and contrast Transactional, Transformational and Servant Leadership principles. Including effects of each on team member engagement.
• Develop and deploy team based performance objectives.
• Develop performance improvement coaching strategies.
• Evaluate team member performance to objectives.
• Critique their own performance in support of team objectives.

Major Content Areas:
• Historical Leadership Theory.
• Engineering Methodologies
• Evolutionary phases of leadership theory.
• Team dynamics and process coaching.
• Modern approaches to leadership.
• Performance appraisal and coaching process.

Outline/Assignments:
• Project based team assignments.
• Team based leadership critiques.
• Team member performance reviews.

Topics/Schedule:
[List the topics covered in the class by week below ~or~ use MWF template found at: http://www.bemidjistate.edu/faculty_staff/professional_development/syllabus_templates/Fall%2014%20M%20W%20F.DOCX ~or~ use T TH template found at http://www.bemidjistate.edu/faculty_staff/professional_development/syllabus_templates/Fall%2014%20T%20TH.DOCX ]
**Course and/or Department Specific Policies:** All writing and discussion assignments, tests, the course project and the Final examination cannot be made up without the prior approval of the instructor and such approval shall not be given except in very extreme cases. Documentation may be required to support your request.

**Academic Integrity:**
BSU students are expected to practice the highest standards of ethics, honesty and integrity in all of their academic work. Any form of academic dishonesty (e.g., plagiarism, cheating and misrepresentation) may result in disciplinary action. Possible disciplinary actions may include failure for part of all of a course as well as suspension from the University.

**Students with Special Needs:**
We would like to make sure that all the materials, discussions and activities that are part of the course are accessible to you. If you would like to request accommodations or other services, please forward your request as soon as possible. It is possible to contact Disability Services, Bangsberg Hall, 101. Phone: 218/755-3883 or E-mail address Disabilityservices@bemidjistate.edu. Also available through the Minnesota Relay Service at 1-800-627-3529.

**Mental Health & Counseling:**
You may experience mental health concerns or stressful events that may lead to diminished academic performance. The Student Center for Health & Counseling is available to assist you with concerns.
BSU Curriculum Forms

Form 3  
Updated: 9.19.15

New Course Form

Course Number: TADT 1450  
   Undergraduate: X  
   Graduate: 

Course Title: Introduction to Product Development

Course Description:  
This course is an introduction to three-dimensional communication techniques for the model making profession. Utilizing hand tools, project construction will include an awareness of attention to detail, design and technical problem solving. Prerequisite: TADT 1210, TADT 1220.

Credits: 3

Prerequisite(s): TADT1210, TADT1220  
   Undergraduate: 
   Graduate: 

1. Reason(s) for creating this course: Industry demand

2. How often will this course be offered? Once a year

3. What are the student learning outcomes for the course (please precede each outcome with "Students will...")?
   1. Students will memorize common terminology used in model making.
   2. Students will apply basic methods and materials used in model making.
   3. Students will develop the ability to “search and find” materials and processes to construct a model.
   4. Students will develop a level of patience while working with scale, precision and detail.
   5. Students will exhibit safe use of hand tools in the completion of models.
   6. Students will develop creative problem solving practices.
   7. Students will apply problem-solving techniques to the design and construction for models.
   8. Students will select appropriate materials for an assigned project.
   9. Students will understand and demonstrate proper safety related to a lab environment.

4. What are the major content areas for the course?  
Model construction, introduction to materials/tools and industry.
5. Is this course repeatable for credit, and if so, what is the maximum number of credits that can be earned? No

6. If this course is intended primarily for off-campus delivery (not offered on campus), what delivery mechanism will be used? On Campus

7. What is the projected maximum class size (cap)? 25

8. What qualified faculty will be available to teach this course? Lyle Meulebroeck, Steven Sundahl

NOTE WELL: Department and dean, in approving this proposal, attest both to the adequacy of the qualifications of faculty here named, and to their availability to teach the course at the frequency specified above, without excessive overload or disruption to other curriculum.

9. What additional library and other resources need or should be provided for this course, that are not already available?

10. What special personal property or service fee(s) would be charged to students taking this course? These charges would be for 1) items that are retained by the student and have an educational or personal value beyond the classroom, or 2) services that are on the student’s behalf (see MnSCU Board Policy 5.11).

   Amount per student: $25 differential tuition

   For:

11. Attach a sample syllabus for the course. Note: if this course is double-numbered (u-grad/grad), the syllabus must include an additional component for graduate students.
Intro to Product Development

TADT1450
Course
Syllabus
3 credits

Contact Information:
Professor: xxxx
Bridgeman Hall: Office #xxx
Phone: xxx-xxx-xxxx
Email: xxx

1. Course Description:
This course is an introduction to three-dimensional communication techniques for the model making profession. Utilizing hand tools, project construction will include an awareness of attention to detail, design and technical problem solving. Prerequisite: TADT 1210, TADT 1220.

2. Methods of Instruction:
Lecture, Reading, Research, Questions, Team Exercises/Activities/Presentations and Lab Assignments.

3. Student Learning Outcomes:
Upon successful completion of this course, the student will:
1. Students will define common terminology used in model making.
2. Students will apply basic methods and materials used in model making.
3. Students will develop the ability to “search and find” materials and processes to construct a model.
4. Students will develop a level of patience while working with scale, precision and detail.
5. Students will exhibit safe use of hand tools in the completion of models.
6. Students will develop creative problem solving practices.
7. Students will apply problem-solving techniques to the design and construction for models.
8. Students will select appropriate materials for an assigned project.
9. Students will understand and demonstrate proper safety related to a lab environment.

4. Course Textbook and Materials:
- Textbook TBD
- Class materials supplied by instructor.
Note: Safety Glasses required

5. Assignments:
- Research industry related processes and materials.
- Individual will research and present on industry related topics.
- Identify and locate correct materials for class exercises.
- Construct ten hands-on related projects utilizing industry specific materials.
- Students will work as a group researching, constructing and presenting a project to their peers.
- Exams and quizzes on processes, materials, safety, etc.

6. Evaluation:
As a student in TADD 1450, you are responsible for all assigned reading, outside work and for understanding the contents of this syllabus. In addition, you are responsible for participating in lecture and group activities, while meeting all deadlines for projects and exams. Attendance is critical to your success!

Course activities will be scored on a Total Points basis distributed as shown below.

<table>
<thead>
<tr>
<th>Activity Weights</th>
<th>Grade Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams &amp; Quizzes</td>
<td>A 90-100%</td>
</tr>
<tr>
<td>Lab Exercises</td>
<td>B 80-89%</td>
</tr>
<tr>
<td>Assignments/Group Activities</td>
<td>C 70-79%</td>
</tr>
<tr>
<td>Class Presentations</td>
<td>D 60-69%</td>
</tr>
<tr>
<td></td>
<td>F 0-59%</td>
</tr>
</tbody>
</table>

- Exams and quizzes will not be given after the assigned schedule quiz date unless prior approval and arrangements have been made with the instructor.
- Participation grades will take attendance, class participation, and student conduct into consideration at the Professor’s discretion.
- Weekly Class Schedule: TBD

7. Course Policies:
Disclaimer:
Your Professor reserves the right to alter the structure, grading scale, topics to be covered, and other requirements related to the class as deemed necessary or desirable.

General Notes:
Communication devices such as cell phones, etc., should be turned off during class. If you are expecting an emergency call make arrangements with the Professor prior to class start. Leave the room before taking the call!

Safety, Health, and Hygiene:
All students are required to wear safety glasses when working in any labs. All equipment is potentially dangerous, especially if misused. Keep all body parts away from moving parts when they are running or powered up. CLEAN IN – CLEAN OUT!

8. Academic Integrity Policy Statement:
Bemidji State University fosters the highest standards of academic integrity and the highest regard for truth and honesty. The attempt by students to present as their own, any work not actually performed by them; collusion, fabrication, and cheating on examinations, papers, and other course-related work; stealing, duplicating, or selling examinations; substituting for others in class discussions or examinations; producing other students’ papers or
projects; knowingly furnishing false or misleading academic information to University officials or on official University records; and altering such information on official University records are considered violations of academic integrity and destructive to the central mission of the University.

Students who violate academic integrity shall, after due process, be subject to University sanctions that may include failure on assignments and examinations and in courses, and suspension or expulsion.

Established academic integrity policies, procedures, and sanctions are communicated in classes and publications such as the student/faculty guides, and during orientation programs. For more information, see the student guide.

9. Alternative formats for Class Materials:
We would like to make sure that all the materials, discussions and activities that are part of the course are accessible to you. If you would like to request accommodations or other services, please forward your request as soon as possible. It is possible to contact Disability Services, Bangsberg Hall, 101. Phone: 218/755-3883 or E-mail address Disabilityservices@bemidjistate.edu. Also available through the Minnesota Relay Service at 1-800-627-3529.
BSU Curriculum Forms

Form 3
Updated: 9.19.15

New Course Form

Course Number: TADT 1464
   Undergraduate: TADT 1464
   Graduate: N/A

Course Title: Engineering Technology Project I

Course Description: This is a project based course that introduces fundamental concepts of engineering design, effective teams, lab safety, and engineering ethics. Basic mechanical systems and simple machines will also be covered. Students are required to demonstrate competency in scheduling, applying fabrication techniques, and documentation. Projects are presented at the end of the semester. Prerequisite: TADT 1210, PHYS 1101.

Credits: 3

Prerequisite(s):
   Undergraduate: TADT 1210 and PHYS 1101
   Graduate:

1. Reason(s) for creating this course:
   Creation of new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2. How often will this course be offered? Once a year

3. What are the student learning outcomes for the course (please precede each outcome with "Students will...")?
   Students will be able to calculate mechanical advantage for simple and compound machines.
   Students will be able to maintain a laboratory notebook for lab and project work.
   Students will be able to apply their knowledge of mechanics, fluids, and/or energy to project designs.
   Students will be able to incorporate various separating processes in their project designs.
   Students will be able to effectively use technology to deliver presentations of their work.

4. What are the major content areas for the course?
   Group Roles and Effective Teams
   Laboratory Notebook Practices
   Laboratory Safety
   Engineering Ethics
   Technical Presentation Skills
5. Is this course repeatable for credit, and if so, what is the maximum number of credits that can be earned? No

6. If this course is intended primarily for off-campus delivery (not offered on campus), what delivery mechanism will be used?

7. What is the projected maximum class size (cap)? 25

8. What qualified faculty will be available to teach this course?
   Michael Lund
   Lyle Meulebroeck

   NOTE WELL: Department and dean, in approving this proposal, attest both to the adequacy of the qualifications of faculty here named, and to their availability to teach the course at the frequency specified above, without excessive overload or disruption to other curriculum.

9. What additional library and other resources need or should be provided for this course, that are not already available?

10. What special personal property or service fee(s) would be charged to students taking this course? These charges would be for 1) items that are retained by the student and have an educational or personal value beyond the classroom, or 2) services that are on the student’s behalf (see MnSCU Board Policy 5.11).
   Amount per student:
   For:

11. Attach a sample syllabus for the course. Note: if this course is double-numbered (u-grad/grad), the syllabus must include an additional component for graduate students.
Bemidji State University
Engineering Technology Project 1
TADT 1464 01
M 1:00pm–1:50pm – BN 132
W, F 1:00pm–2:50pm – BN 132
Fall 2016 - 3 Credits
Course Web Page – None (D2L)

Instructor Information:
Prof. Michael Lund
Office hours – M: 2pm–5pm
W: 9am–12pm
T, Th: 10am–12pm
or by appointment
Office location – BN 228
Phone – (218) 755-2951
Email – mlund@bemidjistate.edu

Please ask questions at any time during the class and labs

Note: All material, including the Course Calendar and Syllabus, is subject to change; however, the instructor will post any changes made to D2L. If any major changes are made, the instructor may send an email to the class informing everybody of the change.

Course Prerequisites

- PHYS 1101
- TADT 1210

Textbook and Recommended Materials and Technology Tools

- TBD

Course Description

This is a project based course that introduces fundamental concepts of engineering design, effective teams, lab safety, and engineering ethics. Basic mechanical systems and simple machines will also be covered. Students are required to demonstrate competency in scheduling, applying fabrication techniques, and documentation. Projects are presented at the end of the semester.
Student Learning Objectives

1. Students will be able to calculate mechanical advantage for simple and compound machines.
2. Students will be able to maintain a laboratory notebook for lab and project work.
3. Students will be able to apply their knowledge of mechanics, fluids, and/or energy to project designs.
4. Students will be able to incorporate various separating processes in their project designs.
5. Students will be able to effectively use technology to deliver presentations of their work.

Assignments and Grading

See the Course Calendar for details.
See Course Policies for information on late assignments and missed tests.

Assignments:
There will be **weekly homework assigned in this course**. Homework will be due at the beginning of class the week after it is assigned. I will also assign weekly reading assignments, which I will expect you to have read before the start of class. Please check D2L if you are uncertain about what is due.

Participation and Discussions:
I expect all students to participate in the class. Discussions and questions are welcome and encouraged. Some days I may split students into groups to discuss the reading material.

<table>
<thead>
<tr>
<th>Grading:</th>
<th>Grades:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework – 15%</td>
<td>90% - A</td>
</tr>
<tr>
<td>Participation* – 20%</td>
<td>80% - B</td>
</tr>
<tr>
<td>Projects – 50%</td>
<td>70% - C</td>
</tr>
<tr>
<td>Final Presentation – 15%</td>
<td>60% - D</td>
</tr>
<tr>
<td></td>
<td>59% - F</td>
</tr>
</tbody>
</table>

* Participation includes attendance to the weekly lecture and labs and purchasing the textbook for the course. You will be required to bring your textbook every time the class meets.
Expectations

Instructor:
1. Post homework solutions no later than the Sunday after they are due.
2. Assign work that will meet the learning objectives of this course.
3. Reply to your emails within 24 hours.
4. Provide fair and consistent grading with helpful feedback.

Student:
1. Keep up with the text reading and homework as outlined in the course calendar.
2. If you have any questions please ASK. I am here to facilitate learning, so please feel free to ask questions. Nobody is born with all the answers, we need to ask questions to learn and progress to the next level.

Course Policies

Late Assignments and Missed Exams:

In general late homework will not be accepted and missed exams cannot be taken at a later date. If a late homework or missed test is due to unavoidable/legitimate circumstances, please let me know and we will discuss possible makeup work.

Student Conduct Code:

This class is a safe and inclusive environment. We each have different backgrounds, academically and culturally, and bring something unique to the table that we can all learn from. I expect everyone to be respectful, courteous, and sensitive to each other at all times.
To review the University Student Conduct Code, please see:

http://www.bemidjistate.edu/students/handbook/conduct/

Academic Integrity:

BSU students are expected to practice the highest standards of ethics, honesty, and integrity in all of their academic work. Any form of academic dishonesty (e.g., plagiarism, cheating, and misrepresentation) may result in disciplinary action. Possible disciplinary actions may include failure for part of or all of a course as well as suspension from the University. Please review the academic integrity policy (below) if you need any clarification of scholastic dishonesty.

https://www.bemidjistate.edu/students/handbook/policies/academic_integrity/
Discrimination and Harassment:

I do not tolerate or condone any sort of discrimination or harassment. As adults I expect each of us to respect each other and work toward creating a comfortable learning environment for everyone. If you are unsure what is considered discrimination and harassment, please read the University's Student Conduct Code.

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Accommodation for Students with Special Needs:

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Bangsberg 101  
Phone: 755-3883  
Email: disabilityservices@bemidjistate.edu

Also available through the Minnesota Relay Service at 1-800-627-3529.

Mental Health and Stress Management:

You may experience mental health concerns or stressful events that may lead to diminished academic performance. The Student Center for Health & Counseling is available to assist you with concerns.

http://www.bemidjistate.edu/students/services/health_counseling/resources/mental_health/
BSU Curriculum Forms

Form 3
Updated: 9.19.15

New Course Form

Course Number: TADT 2217
   Undergraduate: TADT 2217
   Graduate: N/A

Course Title: Strength of Materials

Course Description: An introduction to stress, strain, and deformation analysis of materials subjected to axial, torsional, and bending loads. Basic mechanics concepts such as defects, elasticity, plasticity, and failure are introduced. Prerequisite: PHYS 1101.

Credits: 3

Prerequisite(s):
   Undergraduate: PHYS 1101
   Graduate:

1. Reason(s) for creating this course:
Creation of new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2. How often will this course be offered? Once a year

3. What are the student learning outcomes for the course (please precede each outcome with "Students will...")?
Students will be able to analyze and design structures subjected to kinematic modes of deformation (tension, compression, torsion, and bending loads).
Students will be able to determine material properties such as Young’s modulus, yield stress, ultimate tensile strength, and Poisson’s ratio from structural testing data.
Students will be able to select appropriate materials in a structural design by considering sustainability, health, safety, material properties, manufacturability, cost, and weight.

4. What are the major content areas for the course?
Stress and Strain
   Young’s Modulus and Poisson’s Ratio
   Loading conditions
   Buckling
   Elasticity and Plasticity
   Failure
5. Is this course repeatable for credit, and if so, what is the maximum number of credits that can be earned? No

6. If this course is intended primarily for off-campus delivery (not offered on campus), what delivery mechanism will be used?

7. What is the projected maximum class size (cap)? 25

8. What qualified faculty will be available to teach this course?
   Michael Lund

   NOTE WELL: Department and dean, in approving this proposal, attest both to the adequacy of the qualifications of faculty here named, and to their availability to teach the course at the frequency specified above, without excessive overload or disruption to other curriculum.

9. What additional library and other resources need or should be provided for this course, that are not already available?

10. What special personal property or service fee(s) would be charged to students taking this course? These charges would be for 1) items that are retained by the student and have an educational or personal value beyond the classroom, or 2) services that are on the student’s behalf (see MnSCU Board Policy 5.11).
    Amount per student:
    For:

11. Attach a sample syllabus for the course. Note: if this course is double-numbered (u-grad/grad), the syllabus must include an additional component for graduate students.
Instructor Information:
Prof. Michael Lund
Office hours – M: 2pm–5pm
       W: 9am–12pm
       T, Th: 10am–12pm
or by appointment
Office location – BN 228
Phone – (218) 755-2951
Email – mlund@bemidjistate.edu

Please ask questions at any time during the class and labs

Note: All material, including the Course Calendar and Syllabus, is subject to change; however, the instructor will post any changes made to D2L. If any major changes are made, the instructor may send an email to the class informing everybody of the change.

Course Prerequisites

- PHYS 1101

Textbook and Recommended Materials and Technology Tools

- Mechanics of Materials 8th Ed., James M. Gere and Barry J. Goodno

Course Description

An introduction to stress, strain, and deformation analysis of materials subjected to axial, torsional, and bending loads. Basic mechanics concepts such as defects, elasticity, plasticity, and failure are introduced.
Student Learning Objectives

6. Students will be able to analyze and design structures subjected to kinematic modes of deformation (tension, compression, torsion, and bending loads).
7. Students will be able to determine material properties such as Young’s modulus, yield stress, ultimate tensile strength, and Poisson’s ratio from structural testing data.
8. Students will be able to select appropriate materials in a structural design by considering sustainability, health, safety, material properties, manufacturability, cost, and weight.

Assignments and Grading

See the Course Calendar for details.
See Course Policies for information on late assignments and missed tests.

Assignments:
There will be **weekly homework assigned in this course**. Homework will be due at the beginning of class the week after it is assigned. I will also assign weekly reading assignments, which I will expect you to have read before the start of class. Please check D2L if you are uncertain about what is due.

Participation and Discussions:
I expect all students to participate in the class. Discussions and questions are welcome and encouraged. Some days I may split students into groups to discuss the reading material.

Exams:
Each exam will consist of qualitative questions used to assess your understanding of basic concepts, and quantitative questions used to assess your problem solving skills and ability to apply your knowledge to real (or plausible) problems. Tests will be individual, but you can consult a 1-page (8”x11”) note sheet (not photocopied, single sided).

<table>
<thead>
<tr>
<th>Grading:</th>
<th>Grades:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework (10 total) – 30%</td>
<td>90% - A</td>
</tr>
<tr>
<td>Participation* – 20%</td>
<td>80% - B</td>
</tr>
<tr>
<td>Midterm Exams (2 total) – 30%</td>
<td>70% - C</td>
</tr>
<tr>
<td>Final Exam – 20%</td>
<td>60% - D</td>
</tr>
<tr>
<td></td>
<td>59% - F</td>
</tr>
</tbody>
</table>

* Participation includes attendance to the weekly lecture and purchasing the textbook for the course. You will be required to bring your textbook every time the class meets.
Expectations

Instructor:

5. Post homework solutions no later than the Sunday after they are due.
6. Assign work that will meet the learning objectives of this course.
7. Reply to your emails within 24 hours.
8. Provide fair and consistent grading with helpful feedback.

Student:

3. Keep up with the text reading and homework as outlined in the course calendar.
4. If you have any questions please ASK. I am here to facilitate learning, so please feel free to ask questions. Nobody is born with all the answers, we need to ask questions to learn and progress to the next level.

Course Policies

Late Assignments and Missed Exams:

In general late homework will not be accepted and missed exams cannot be taken at a later date. If a late homework or missed test is due to unavoidable/legitimate circumstances, please let me know and we will discuss possible makeup work.

Student Conduct Code:

This class is a safe and inclusive environment. We each have different backgrounds, academically and culturally, and bring something unique to the table that we can all learn from. I expect everyone to be respectful, courteous, and sensitive to each other at all times.
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http://www.bemidjistate.edu/students/handbook/conduct/

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https://www.bemidjistate.edu/students/handbook/policies/academic_integrity/

Discrimination and Harassment:

I do not tolerate or condone any sort of discrimination or harassment. As adults I expect each of us to respect each other and work toward creating a comfortable learning environment for everyone. If you are unsure what is considered discrimination and harassment, please read the University’s Student Conduct Code.

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Accommodation for Students with Special Needs:

We would like to make sure that all the materials, discussions and activities that are part of the course are accessible to you. If you would like to request accommodations or other services, please forward your request as soon as possible. It is possible to contact Disability Services:

Bangsberg 101
Phone: 755-3883
Email: disabilityservices@bemidjistate.edu

Also available through the Minnesota Relay Service at 1-800-627-3529.

Mental Health and Stress Management:

You may experience mental health concerns or stressful events that may lead to diminished academic performance. The Student Center for Health & Counseling is available to assist you with concerns.

http://www.bemidjistate.edu/students/services/health_counseling/resources/mental_health/
BSU Curriculum Forms

Form 3
Updated: 9.19.15

New Course Form

Course Number: TADT 2252
  Undergraduate: TADT 2252
  Graduate: N/A

Course Title: Construction Materials and Methods

Course Description:
This course is a broad study of materials and methods used in the building and the construction industry. Emphasizing common construction systems such as light wood frame, masonry bearing wall, steel frame, and reinforced concrete construction, including information on building materials properties; "pre-engineered" building components; sustainability issues; and the latest building codes and standards. Prerequisite: TADT 1460, TADT 2250 or consent of the instructor.

Credits: 3

Prerequisite(s):
  Undergraduate: TADT 1460, TADT 2250 or consent of the instructor.

Graduate:

1. Reason(s) for creating this course:
Creation of new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2. How often will this course be offered?
Every other year

3. What are the student learning outcomes for the course (please precede each outcome with "Students will...")?

At the completion of the course, students will be able to:
  1. Interpret print reading symbols and abbreviations for the successful completion of assignments,
  2. Apply the appropriate construction materials and methods as evident in assignments, projects and/or exams,
  3. Critique sustainable or green building materials, methods, tools, equipment, and structural systems as evident through discussions, projects and/or exams,
  4. Analyze case studies for their appropriateness of materials, methods, codes and standards as evident through discussions, projects and/or exams,
5. Design a project for the use of materials and methods judging the appropriate installation in a LEED project based on the completion of LEED documentation and LEED rating system.

6. Explore the relationship of different sustainable/green building rating systems, standards and codes.

4. What are the major content areas for the course?

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction and Making Buildings</td>
</tr>
<tr>
<td>Week 2</td>
<td>Site Preparation and Documentation</td>
</tr>
<tr>
<td>Week 3</td>
<td>Concrete Forms, Footings and Flatwork</td>
</tr>
<tr>
<td>Week 4</td>
<td>Wood and Timber Framed Construction</td>
</tr>
<tr>
<td>Week 5</td>
<td>Exterior Finishes and Interior Finishes for Wood Light Frame Construction</td>
</tr>
<tr>
<td>Week 6</td>
<td>Brick Masonry, and Stone and Concrete Masonry</td>
</tr>
<tr>
<td>Week 7</td>
<td>Masonry Wall Construction</td>
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<tr>
<td>Week 8</td>
<td>Steel Frame Construction, and Light Gauge Steel Frame Construction</td>
</tr>
<tr>
<td>Week 9</td>
<td>Site-cast and Pre-cast Concrete Framing Systems</td>
</tr>
<tr>
<td>Week 10</td>
<td>Roofing, Glass and Glazing, Windows and Doors</td>
</tr>
<tr>
<td>Week 11</td>
<td>Designing Exterior Wall Systems</td>
</tr>
<tr>
<td>Week 12</td>
<td>Cladding with Metal and Glass</td>
</tr>
<tr>
<td>Week 13</td>
<td>Selecting Interior Finishes</td>
</tr>
<tr>
<td>Week 14</td>
<td>Interior Walls and Partitions</td>
</tr>
<tr>
<td>Week 15</td>
<td>Finish Ceilings and Floors</td>
</tr>
<tr>
<td>Week 16</td>
<td>Final Project/Final Due</td>
</tr>
</tbody>
</table>

5. Is this course repeatable for credit, and if so, what is the maximum number of credits that can be earned? No

6. If this course is intended primarily for off-campus delivery (not offered on campus), what delivery mechanism will be used? N/A

7. What is the projected maximum class size (cap)? 25

8. What qualified faculty will be available to teach this course? Dr. Tim Brockman

NOTE WELL: Department and dean, in approving this proposal, attest both to the adequacy of the qualifications of faculty here named, and to their availability to teach the course at the frequency specified above, without excessive overload or disruption to other curriculum.

9. What additional library and other resources need or should be provided for this course, that are not already available? None

10. What special personal property or service fee(s) would be charged to students taking this course? These charges would be for 1) items that are retained by the student and have an educational or personal value beyond the classroom, or 2) services that are on the student’s behalf (see MnSCU Board Policy 5.11).
   Amount per student: $ 25 per credit as per all TAD courses.
For: Lab fees and special equipment use fees.

11. Attach a sample syllabus for the course. Note: if this course is double-numbered (u-grad/grad), the syllabus must include an additional component for graduate students.
TADT 2252-01 Construction Materials & Methods  
(Id# 16XXXX)

Course Syllabus

FALL 2016

CLASS HOURS: 2:00 to 3:15 Tuesdays & Thursdays BN 118)

CREDITS: 3      CLASS LOCATION: BN 118 (lectures)

Instructor: Dr. Tim Brockman, Associate Professor

OFFICE: Bridgeman Hall #227,                OFFICE PHONE: 218-755-4128

OFFICE HOURS:        Mondays 9:00 to 11:00, and 1:00 to 5:00;        Tuesdays 9:00 and 1:00
Wednesdays 9:00 to 11:00       Please make arrangements 24 hours prior to meet during "Office Hours".

E-MAIL: tbrockman@bemidjistate.edu

Course Description
This course is a broad study of materials and methods used in the building and the construction industry. Emphasizing common construction systems such as light wood frame, masonry bearing wall, steel frame, and reinforced concrete construction, including information on building materials properties; "pre-engineered" building components; sustainability issues; and the latest building codes and standards. Prerequisites: TADT 1460, TADT 2250 or consent of the instructor

Prerequisites
TADT 1460, TADT 2250 or consent of the instructor

Organization and Brightspace [Formerly Desire to Learn (D2L)]
The primary methods of course delivery includes: lectures, discussions, group projects, videos, and presentations with a blended Brightspace delivery format. In addition to classroom participation students will be submitting assignments in D2L, which will be used for classroom administrative purposes, such as grading and program assessment. Please make sure you can access your Brightspace (D2L) student account. Student Computer Support is available at 755-4207.

Written Assignments
Unless noted, all assignments must be completed in a word processing format for submission to the Brightspace (D2L) Drop Box.
Email Policy
It is the policy of Bemidji State University that administrative electronic mail communications between the University and University students shall be done using University assigned electronic mail addresses. It shall be the responsibility of each student to monitor the University assigned electronic mail account for communications from the University.

Student Learning Outcomes
At the completion of the course, students will be able to:
1. Interpret print reading symbols and abbreviations for the successful completion of assignments,
2. Apply the appropriate construction materials and methods as evident in assignments, projects and/or exams,
3. Critique sustainable or green building materials, methods, tools, equipment, and structural systems as evident through discussions, projects and/or exams,
4. Analyze case studies for their appropriateness of materials, methods, codes and standards as evident through discussions, projects and/or exams,
5. Design a project for the use of materials and methods judging the appropriate installation in a LEED project based on the completion of LEED documentation and LEED rating system,
6. Explore the relationship of different sustainable/green building rating systems, standards and codes.

Required Textbooks


Suggested
ISBN 978-1-60085-246-6

Professional Participation
Students are expected to participate in class in a professional manner. This would include but not be limited to:
1. Serious approach to assignments and activities
2. Presentations of projects and assignments in a professional manner and in a word processing format.
3. Be attentive and participate in class.
Topics/Schedule
*Please note: Schedule may be subject to change*

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

*Please note: Schedule will be posted online. Check the course Brightspace (D2L) site for updates under Content and/or posted in the News.*

Note
The instructor reserves the right to alter the structure, grading scale, topics to be covered and other requirements related to this class as deemed necessary or desirable.

You will be graded on daily participation (up to 5 points per session).

<table>
<thead>
<tr>
<th>Participation Points: (28 classes x 5)</th>
<th>140 points</th>
<th>24%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tests &amp; Quizzes:</td>
<td>100 points</td>
<td>17%</td>
</tr>
<tr>
<td>Assignments</td>
<td>200 points</td>
<td>33%</td>
</tr>
<tr>
<td>Community Engagement - Volunteerism</td>
<td>80 points</td>
<td>13%</td>
</tr>
<tr>
<td>Final</td>
<td>80 points</td>
<td>13%</td>
</tr>
</tbody>
</table>

600 points total 100%

Grade Range

- 100% to 90% = A
- 89% to 80% = B
- 79% to 70% = C
- 69% to 60% = D
- 59% and lower = F

Statement of Academic Integrity:
BSU students are expected to practice the highest standards of ethics, honesty and integrity in all of their academic work. Any form of academic dishonesty (e.g., plagiarism, cheating and misrepresentation) may result in disciplinary action. Possible disciplinary actions may include failure for part of all of a course as well as suspension from the University.

Students with Special Needs:
We would like to make sure that all the materials, discussions and activities that are
part of the course are accessible to you. If you would like to request accommodations or other services, please forward your request as soon as possible. It is possible to contact Disability Services, Bangsberg Hall, 101. Phone: 218/755-3883 or E-mail address Disabilityservices@bemidjistate.edu Also available through the Minnesota Relay Service at 1-800-627-3529.

Mental Health Statement:
You may experience mental health concerns or stressful events that may lead to diminished academic performance. The Student Center for Health & Counseling is available to assist you with concerns.

_The use of cellular phones will be permitted for professional, course related activities only during class time. Please, no personal use._

My Philosophy of Education (Tim Brockman)
We are all learners. It is my privilege to facilitate our educational experiences:

1. As an instructor I encourage the respect and acceptance of all individuals and their diversity. I appreciate the richness of life that multicultural diversity adds to our academic surroundings.

2. I look to the talents and the diversity of knowledge of my students to contribute to the success and safety of the classroom by encouraging a positive attitude expressed with concerns for open dialogue and a cooperative commitment between the instructor and the students.

3. I believed the classroom should be an interactive, shared environment in which the instructor creates a safe, comfortable and supportive learning environment.

4. I accept the responsibility to recognize, challenge and empower individuals in an effort to meet their various learning needs, abilities and styles through a variety of teaching strategies and techniques.

5. I believe all educational opportunities should be consistent, fair and enjoyable when possible, fostering our intellectual and emotional growth.
BSU Curriculum Forms

Form 3

New Course Form

Course Number:
   Undergraduate: TADT 2450
Graduate:

Course Title: Product Finishing & Aesthetics

Course Description: The purpose of this course is to provide the student an understanding of materials, principles and techniques of spray finishing required to complete a professional model. Processes may include model construction, surface preparation, materials selection and paint application. Prerequisites: TADT 1210, TADT 1220, TADT 1460.

Credits: 3

Prerequisite(s): TADT 1210, TADT 1220, TADT 1460

1. Reason(s) for creating this course: Industry demand.

2. How often will this course be offered? Once a year.

3. What are the student learning outcomes for the course (please precede each outcome with "Students will...")?
   Upon successful completion of this course, the student will:
   - Students will understand and demonstrate the process of finishing a model to industry standards.
   - Students will understand and demonstrate various finishing techniques.
   - Students will understand advantages and disadvantages of finishing materials and equipment.
   - Students will describe various forming processes utilized for shaping materials for product manufacture.
   - Students will understand the implications of choosing appropriate project materials for specific projects.
   - Students will display fundamental application skills to complete assigned finishing projects.
   - Students will understand and demonstrate proper safety related to a lab environment.

4. What are the major content areas for the course? Model construction, surface preparation, materials selection and paint application.

5. Is this course repeatable for credit, and if so, what is the maximum number of credits that can be earned? No
6. If this course is intended primarily for off-campus delivery (not offered on campus), what delivery mechanism will be used? On campus

7. What is the projected maximum class size (cap)? 25

8. What qualified faculty will be available to teach this course? Lyle Meulebroeck, Steven Sundahl

NOTE WELL: Department and dean, in approving this proposal, attest both to the adequacy of the qualifications of faculty here named, and to their availability to teach the course at the frequency specified above, without excessive overload or disruption to other curriculum.

9. What additional library and other resources need or should be provided for this course, that are not already available? No

10. What special personal property or service fee(s) would be charged to students taking this course? These charges would be for 1) items that are retained by the student and have an educational or personal value beyond the classroom, or 2) services that are on the student’s behalf (see MnSCU Board Policy.

Amount per student: $25 differential tuition

11. Attach a sample syllabus for the course. Note: if this course is double-numbered (u-grad/grad), the syllabus must include an additional component for graduate students.
Product Finishing & Aesthetics
TADT 2450

Course Syllabus 3 Credits

Contact Information:
Professor: xxx
Bridgeman Hall Office #xxx
Phone: xxx-xxx-xxxx
Email: xxx

1. Course Description:
The purpose of this course is to provide the student an understanding of materials, principles and techniques of spray finishing required to complete a professional model/prototype. Processes may include model construction, surface preparation, materials selection and paint application. Prerequisites: TADT 1210, TADT 1220, TADT 1460

1. Methods of Instruction:
Lecture, Reading, Research, Questions, Team Exercises/Activities/Presentations and Lab Assignments.

2. Student Learning Outcomes:
Upon successful completion of this course, the student will:
- Students will understand and demonstrate the process of finishing a model to industry standards.
- Students will understand and demonstrate various finishing techniques.
- Students will understand and differentiate between advantages and disadvantages of finishing materials and equipment.
- Students will describe various forming processes utilized for shaping materials for product manufacture.
- Students will understand and select appropriate project materials for specific projects.
- Students will display fundamental application skills to complete assigned finishing projects.
- Students will understand and demonstrate proper safety related to a lab environment.

3. Course Textbook and Materials:
- Textbook - TBD
- Materials supplied by Instructor
Note: Safety Glasses Required.
Student will be required to purchase: Safety glasses, paint gun, respirator and various sanding materials.

4. Assignments:
- Research and Identify refinishing materials used for lab projects.
- Prepare and refinish seven projects using proper primers, sealers and spray finishing techniques:
  - Prepare and demonstrate various spray techniques.
    - Sanding and pre-preparation of project.
    - Primers, sealers, clear finish application.
- One major project showing the culmination of techniques, etc. learned during the semester.
- Class presentations to peers on materials, processes, and procedures used in industry.
5. Evaluation:
As a student in TADD 2450, you are responsible for all assigned reading, outside work and for understanding the contents of this syllabus. In addition, you are responsible for participating in lecture and group activities, while meeting all deadlines for projects and exams. Attendance is critical to your success!

Course activities will be scored on approximately 500 points basis distributed as shown below.

<table>
<thead>
<tr>
<th>Activity Weights</th>
<th>Grade Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams &amp; Quizzes</td>
<td>A 90-100%</td>
</tr>
<tr>
<td>Lab Exercises (20 pts. each)</td>
<td>B 80-89%</td>
</tr>
<tr>
<td>Assignments/Group Activities</td>
<td>C 70-79</td>
</tr>
<tr>
<td>Major Project</td>
<td>D 60-69%</td>
</tr>
<tr>
<td></td>
<td>F 0-59%</td>
</tr>
</tbody>
</table>

- Exams and quizzes will not be given after the assigned schedule quiz date unless prior approval and arrangements have been made with the instructor.
- Participation grades will take attendance, class participation, and student conduct into consideration at the Professor’s discretion.
- **Weekly Class Schedule: TBD**

6. Course Policies:
**Disclaimer:**
Your Professor reserves the right to alter the structure, grading scale, topics to be covered, and other requirements related to the class as deemed necessary or desirable.

**General Notes:**
Communication devices such as cell phones, etc., should be turned off during class. If you are expecting an emergency call make arrangements with the Professor prior to class start. Leave the room before taking the call!

**Safety, Health, and Hygiene:**
All students are required to wear safety glasses when working in any labs. All equipment is potentially dangerous, especially if misused. Keep all body parts away from moving parts when they are running or powered up. CLEAN IN – CLEAN OUT!

7. Academic Integrity Policy Statement:
Bemidji State University fosters the highest standards of academic integrity and the highest regard for truth and honesty. The attempt by students to present as their own, any work not actually performed by them; collusion, fabrication, and cheating on examinations, papers, and other course-related work; stealing, duplicating, or selling examinations; substituting for others in class discussions or examinations; producing other students’ papers or projects; knowingly furnishing false or misleading academic information to University officials or on official University records; and altering such information on official University records are considered violations of academic integrity and destructive to the central mission of the University.
Students who violate academic integrity shall, after due process, be subject to University sanctions that may include failure on assignments and examinations and in courses, and suspension or expulsion.

Established academic integrity policies, procedures, and sanctions are communicated in classes and publications such as the student/faculty guides, and during orientation programs. For more information, see the student guide.

8. Alternative formats for Class Materials:
We would like to make sure that all the materials, discussions and activities that are part of the course are accessible to you. If you would like to request accommodations or other services, please forward your request as soon as possible. It is possible to contact Disability Services, Bangsberg Hall, 101. Phone: 218/755-3883 or E-mail address Disabilitieservices@bemidjistate.edu. Also available through the Minnesota Relay Service at 1-800-627-3529.
BSU Curriculum Forms

Form 3
Updated: 9.19.15

New Course Form

Course Number: TADT 2465
  Undergraduate: TADT 2465
  Graduate: N/A

Course Title: Engineering Technology Project II

Course Description: This is a project based course that builds on topics covered in Engineering Project 1. Students will be introduced to electrical safety, electrical schematics, electrical circuits, various electrical components, and electrical measuring equipment. Students are required to demonstrate competency in applying fabrication and analysis techniques and setting performance specifications, meeting these specifications, and documenting their designs. Projects are presented at the end of the semester. Prerequisite: PHYS 1102, TADT 1220, TADT 1460 and TADT 1464.

Credits: 3

Prerequisite(s):
  Undergraduate: PHYS 1102, TADT 1220, TADT 1460, and TADT 1464

  Graduate:

1. Reason(s) for creating this course:
Creation of new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2. How often will this course be offered? Once a year

3. What are the student learning outcomes for the course (please precede each outcome with "Students will...")?
Students will be able to recognize, evaluate, and control hazards associated with electrical work.
Students will be able to build basic electrical devices by applying correct soldering and troubleshooting techniques.
Students will be able to apply their knowledge of electricity, magnetism, and/or DC circuits to project designs.
Students will be able to apply their knowledge of 2D CAD and create orthographic and isometric views of their design projects.
Students will be able to incorporate 2D manufacturing, such as laser cutting, in their design projects.
Students will be able to incorporate various forming and separating processes in their project designs.
4. What are the major content areas for the course?
   Applications of 2D CAD and Manufacturing
   Electrical Safety
   Electrical circuits and schematics
   Soldering
   Functional Analysis
   Decision Analysis

5. Is this course repeatable for credit, and if so, what is the maximum number of credits that can be earned? No

6. If this course is intended primarily for off-campus delivery (not offered on campus), what delivery mechanism will be used?

7. What is the projected maximum class size (cap)? 25

8. What qualified faculty will be available to teach this course?
   Michael Lund
   Lyle Meulebroeck

   NOTE WELL: Department and dean, in approving this proposal, attest both to the adequacy of the qualifications of faculty here named, and to their availability to teach the course at the frequency specified above, without excessive overload or disruption to other curriculum.

9. What additional library and other resources need or should be provided for this course, that are not already available?

10. What special personal property or service fee(s) would be charged to students taking this course? These charges would be for 1) items that are retained by the student and have an educational or personal value beyond the classroom, or 2) services that are on the student’s behalf (see MnSCU Board Policy 5.11).
    Amount per student:
    For:

11. Attach a sample syllabus for the course. Note: if this course is double-numbered (u-grad/grad), the syllabus must include an additional component for graduate students.
Bemidji State University

Engineering Technology Project 2
TADT 2465 01
M 1:00pm–1:50pm – BN 132
W, F 1:00pm–2:50pm – BN 132
Fall 2016 - 3 Credits
Course Web Page – None (D2L)

Instructor Information:
Prof. Michael Lund
Office hours – M: 2pm–5pm
       W: 9am–12pm
       T, Th: 10am–12pm
or by appointment
Office location – BN 228
Phone – (218) 755-2951
Email – mlund@bemidjistate.edu

Please ask questions at any time during the class and labs

Note: All material, including the Course Calendar and Syllabus, is subject to change; however, the instructor will post any changes made to D2L. If any major changes are made, the instructor may send an email to the class informing everybody of the change.

Course Prerequisites

- PHYS 1102
- TADT 1220
- TADT 1460
- TADT 1464

Textbook and Recommended Materials and Technology Tools

- TBD

Course Description

This is a project based course that builds on topics covered in Engineering Project 1. Students will be introduced to electrical safety, electrical schematics, electrical circuits, various electrical components, and electrical measuring equipment. Students are required to demonstrate competency in applying fabrication and analysis techniques and setting performance specifications,
meeting these specifications, and documenting their designs. Projects are presented at the end of the semester. PHYS 1102, TADT 1220, TADT 1460, and TADT 1464

Student Learning Objectives

9. Students will be able to recognize, evaluate, and control hazards associated with electrical work.
10. Students will be able to build basic electrical devices by applying correct soldering and troubleshooting techniques.
11. Students will be able to apply their knowledge of electricity, magnetism, and/or DC circuits to project designs.
12. Students will be able to apply their knowledge of 2D CAD and create orthographic and isometric views of their design projects.
13. Students will be able to incorporate 2D manufacturing, such as laser cutting, in their design projects.
14. Students will be able to incorporate various forming and separating processes in their project designs.

Assignments and Grading

See the Course Calendar for details.
See Course Policies for information on late assignments and missed tests.

Assignments:
There will be weekly homework assigned in this course. Homework will be due at the beginning of class the week after it is assigned. I will also assign weekly reading assignments, which I will expect you to have read before the start of class. Please check D2L if you are uncertain about what is due.

Participation and Discussions:
I expect all students to participate in the class. Discussions and questions are welcome and encouraged. Some days I may split students into groups to discuss the reading material.

<table>
<thead>
<tr>
<th>Grading:</th>
<th>Grades:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework – 15%</td>
<td>90% - A</td>
</tr>
<tr>
<td>Participation* – 20%</td>
<td>80% - B</td>
</tr>
<tr>
<td>Projects – 50%</td>
<td>70% - C</td>
</tr>
<tr>
<td>Final Presentation – 15%</td>
<td>60% - D</td>
</tr>
<tr>
<td></td>
<td>59% - F</td>
</tr>
</tbody>
</table>

* Participation includes attendance to the weekly lecture and labs and purchasing the textbook for the course. You will be required to bring your textbook every time the class meets.
Expectations

Instructor:

9. Post homework solutions no later than the Sunday after they are due.
10. Assign work that will meet the learning objectives of this course.
11. Reply to your emails within 24 hours.
12. Provide fair and consistent grading with helpful feedback.

Student:

5. Keep up with the text reading and homework as outlined in the course calendar.
6. If you have any questions please ASK. I am here to facilitate learning, so please feel free to ask questions. Nobody is born with all the answers, we need to ask questions to learn and progress to the next level.

Course Policies

Late Assignments and Missed Exams:

In general late homework will not be accepted and missed exams cannot be taken at a later date. If a late homework or missed test is due to unavoidable/legitimate circumstances, please let me know and we will discuss possible makeup work.

Student Conduct Code:

This class is a safe and inclusive environment. We each have different backgrounds, academically and culturally, and bring something unique to the table that we can all learn from. I expect everyone to be respectful, courteous, and sensitive to each other at all times.
To review the University Student Conduct Code, please see:

http://www.bemidjistate.edu/students/handbook/conduct/

Academic Integrity:

BSU students are expected to practice the highest standards of ethics, honesty, and integrity in all of their academic work. Any form of academic dishonesty (e.g., plagiarism, cheating, and misrepresentation) may result in disciplinary action. Possible disciplinary actions may include failure for part of or all of a course as well as suspension from the University. Please review the academic integrity policy (below) if you need any clarification of scholastic dishonesty.

https://www.bemidjistate.edu/students/handbook/policies/academic_integrity/
Discrimination and Harassment:

I do not tolerate or condone any sort of discrimination or harassment. As adults I expect each of us to respect each other and work toward creating a comfortable learning environment for everyone. If you are unsure what is considered discrimination and harassment, please read the University's Student Conduct Code.

[http://www.bemidjistate.edu/students/handbook/conduct/](http://www.bemidjistate.edu/students/handbook/conduct/)

Accommodation for Students with Special Needs:

We would like to make sure that all the materials, discussions and activities that are part of the course are accessible to you. If you would like to request accommodations or other services, please forward your request as soon as possible. It is possible to contact Disability Services:

Bangsberg 101  
Phone: 755-3883  
Email: disabilityservices@bemidjistate.edu

Also available through the Minnesota Relay Service at 1-800-627-3529.

Mental Health and Stress Management:

You may experience mental health concerns or stressful events that may lead to diminished academic performance. The Student Center for Health & Counseling is available to assist you with concerns.

[http://www.bemidjistate.edu/students/services/health_counseling/resources/mental_health/](http://www.bemidjistate.edu/students/services/health_counseling/resources/mental_health/)
BSU Curriculum Forms

Form 3
Updated: 9.19.15

New Course Form

Course Number: TADT 3277
   Undergraduate: TADT 3277
   Graduate: N/A

Course Title: Programmable Logic Controllers

Course Description: This course offers students an in depth exposure to programmable logic controller (PLC) devices, the main components of PLC systems, and DC/AC motor and fluid power. The course will cover configuration and programming of PLCs for motor and hydraulic system control using various programming tools. Prerequisite: PHYS 1102 and junior status.

Credits: 3

Prerequisite(s):
   Undergraduate: PHYS 1102 and junior status
   Graduate:

1. Reason(s) for creating this course:
   With the reduction of credits from 4 to 3, it will afford the opportunity for the current faculty to create new courses (topics) that will help strengthen the TADT curriculum by allowing students greater variety of academic skills as needed by industry.

2. How often will this course be offered? Once a year

3. What are the student learning outcomes for the course (please precede each outcome with "Students will...")?
   Students will be able to describe the purpose, functions, and operations of a PLC.
   Students will be able to explain how basic hydraulic and pneumatic systems operate and perform work.
   Students will be able to identify basic components of a PLC system and explain how they function.
   Students will be able to explain the binary, hexadecimal, and octal number systems and ASCII and EBCDIC alphanumeric codes.
   Students will be able to explain the operation of various sensors, switches, relays, and motor control devices.
   Students will be able to create ladder logic diagrams for process and industrial control problems.
   Students will be able to create a PLC project and program using PLC software

4. What are the major content areas for the course?
Number systems and codes
Input/output devices
Ladder logic diagrams and programming
Logic gate functions
Timer and counter instructions
Math, compare, jump, and reset instructions
Fluid power and Hydraulic systems

5. Is this course repeatable for credit, and if so, what is the maximum number of credits that can be earned? No

6. If this course is intended primarily for off-campus delivery (not offered on campus), what delivery mechanism will be used?

7. What is the projected maximum class size (cap)? 25

8. What qualified faculty will be available to teach this course?
   Michael Lund

NOTE WELL: Department and dean, in approving this proposal, attest both to the adequacy of the qualifications of faculty here named, and to their availability to teach the course at the frequency specified above, without excessive overload or disruption to other curriculum.

9. What additional library and other resources need or should be provided for this course, that are not already available?

10. What special personal property or service fee(s) would be charged to students taking this course? These charges would be for 1) items that are retained by the student and have an educational or personal value beyond the classroom, or 2) services that are on the student’s behalf (see MnSCU Board Policy 5.11).
    Amount per student:
    For:

11. Attach a sample syllabus for the course. Note: if this course is double-numbered (u-grad/grad), the syllabus must include an additional component for graduate students.
Instructor Information:
Prof. Michael Lund
Office hours – M: 2pm–5pm
W: 9am–12pm
T, Th: 10am–12pm
or by appointment
Office location – BN 228
Phone – (218) 755-2951
Email – mlund@bemidjistate.edu

Please ask questions at any time during the class and labs

Note: All material, including the Course Calendar and Syllabus, is subject to change; however, the instructor will post any changes made to D2L. If any major changes are made, the instructor may send an email to the class informing everybody of the change.

Course Prerequisites

- PHYS 1102
- Junior status

Textbook and Recommended Materials and Technology Tools

- Programmable Logic Controllers 3rd. Ed., Max Rabiee

Course Description

This course offers students an in depth exposure to programmable logic controller (PLC) devices and the main components of PLC systems. The course will cover configuration and programming of PLCs for motor control using various programming tools.
Student Learning Objectives

15. Students will be able to describe the purpose, functions, and operations of a PLC.
16. Students will be able to explain how basic hydraulic and pneumatic systems operate and perform work.
17. Students will be able to identify basic components of a PLC system and explain how they function.
18. Students will be able to explain the binary, hexadecimal, and octal number systems and ASCII and EBCDIC alphanumeric codes.
19. Students will be able to explain the operation of various sensors, switches, relays, and motor control devices.
20. Students will be able to create ladder logic diagrams for process and industrial control problems.
21. Students will be able to create a PLC project and program using PLC software.

Assignments and Grading

- See the Course Calendar for details.
- See Course Policies for information on late assignments and missed tests.

Assignments:
There will be **weekly homework assigned in this course**. Homework will be due at the beginning of class the week after it is assigned. I will also assign weekly reading assignments, which I will expect you to have read before the start of class. Please check D2L if you are uncertain about what is due.

Participation and Discussions:
I expect all students to participate in the class. Discussions and questions are welcome and encouraged. Some days I may split students into groups to discuss the reading material.

Exams:
Each exam will consist of qualitative questions used to assess your understanding of basic concepts, and quantitative questions used to assess your problem solving skills and ability to apply your knowledge to real (or plausible) problems. Tests will be individual, but you can consult a 1-page (8”x11”) note sheet (not photocopied, single sided).

<table>
<thead>
<tr>
<th>Grading:</th>
<th>Grades:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework (10 total) – 30%</td>
<td>90% - A</td>
</tr>
<tr>
<td>Participation* – 20%</td>
<td>80% - B</td>
</tr>
<tr>
<td>Midterm Exams (2 total) – 30%</td>
<td>70% - C</td>
</tr>
<tr>
<td>Final Exam – 20%</td>
<td>60% - D</td>
</tr>
<tr>
<td></td>
<td>59% - F</td>
</tr>
</tbody>
</table>
* Participation includes attendance to the weekly lecture and purchasing the textbook for the course. You will be required to bring your textbook every time the class meets.

**Expectations**

**Instructor:**

13. Post homework solutions no later than the Sunday after they are due.
14. Assign work that will meet the learning objectives of this course.
15. Reply to your emails within 24 hours.
16. Provide fair and consistent grading with helpful feedback.

**Student:**

7. Keep up with the text reading and homework as outlined in the course calendar.
8. If you have any questions please ASK. I am here to facilitate learning, so please feel free to ask questions. Nobody is born with all the answers, we need to ask questions to learn and progress to the next level.

**Course Policies**

**Late Assignments and Missed Exams:**

In general late homework will not be accepted and missed exams cannot be taken at a later date. If a late homework or missed test is due to unavoidable/legitimate circumstances, please let me know and we will discuss possible makeup work.

**Student Conduct Code:**

This class is a safe and inclusive environment. We each have different backgrounds, academically and culturally, and bring something unique to the table that we can all learn from. I expect everyone to be respectful, courteous, and sensitive to each other at all times.

To review the University Student Conduct Code, please see:

[http://www.bemidjistate.edu/students/handbook/conduct/](http://www.bemidjistate.edu/students/handbook/conduct/)

**Academic Integrity:**

BSU students are expected to practice the highest standards of ethics, honesty, and integrity in all of their academic work. Any form of academic dishonesty (e.g., plagiarism, cheating, and misrepresentation) may result in disciplinary action. Possible disciplinary actions may include failure for part of or all of a course as well
as suspension from the University. Please review the academic integrity policy (below) if you need any clarification of scholastic dishonesty.

https://www.bemidjistate.edu/students/handbook/policies/academic_integrity/

**Discrimination and Harassment:**

I do not tolerate or condone any sort of discrimination or harassment. As adults I expect each of us to respect each other and work toward creating a comfortable learning environment for everyone. If you are unsure what is considered discrimination and harassment, please read the University's Student Conduct Code.

http://www.bemidjistate.edu/students/handbook/conduct/

**Accommodation for Students with Special Needs:**

We would like to make sure that all the materials, discussions and activities that are part of the course are accessible to you. If you would like to request accommodations or other services, please forward your request as soon as possible. It is possible to contact Disability Services:

Bangsberg 101  
Phone: 755-3883  
Email: disabilityservices@bemidjistate.edu

Also available through the Minnesota Relay Service at 1-800-627-3529.

**Mental Health and Stress Management:**

You may experience mental health concerns or stressful events that may lead to diminished academic performance. The Student Center for Health & Counseling is available to assist you with concerns.

http://www.bemidjistate.edu/students/services/health_counseling/resources/mental_health/
BSU Curriculum Forms

Form 3
Updated: 9.19.15

New Course Form

Course Number: TADT 3462
  Undergraduate: X
  Graduate:

Course Title: Computer Controlled Machining

Course Description:
Introduction to computer-controlled machining operations including manual programming and programming using CAM application for CNC (computer controlled machining). Emphasis on tools and materials are applied in a wide variety of manufacturing and modeling operations. Prerequisite: TADT 2461.

Credits: 3

Prerequisite:
  Undergraduate: TADT 2461
  Graduate:

1. Reason(s) for creating this course:
Our students need an introduction to programming language and hands-on Computer Controlled Machining (CNC). This training is needed to be current on demands of manufacturing relating to production of consumer products.

2. How often will this course be offered? Once a year.

3. What are the student learning outcomes for the course (please precede each outcome with "Students will...")?

  • Utilize oral, written and communication skills in the course environment.
  • Apply functional computer skills; including software utilization and applications to solve technical problems.
  • Use and interpret thoughts and ideas in a graphic form.
  • Plan and apply construction, manufacturing, modeling, mechanical, concepts and calculations to construct drawings.
  • Apply a fundamental operational knowledge of drawing processes used to produce components and machined parts.
4. What are the major content areas for the course?
   Operation of HAAS & Milltronic CNC mills, Mastercam programming software - writing & operation, reading/writing g-code, tool identification and set-up, sequential steps of machining, basics of fixture set-up/usage, troubleshooting and maintenance.

5. Is this course repeatable for credit, and if so, what is the maximum number of credits that can be earned? Yes, 9 credits maximum.

6. If this course is intended primarily for off-campus delivery (not offered on campus), what delivery mechanism will be used? N/A.

7. What is the projected maximum class size (cap)? 25.

8. What qualified faculty will be available to teach this course? Lyle Meulebroeck.

   NOTE WELL: Department and dean, in approving this proposal, attest both to the adequacy of the qualifications of faculty here named, and to their availability to teach the course at the frequency specified above, without excessive overload or disruption to other curriculum.

9. What additional library and other resources need or should be provided for this course, that are not already available? None.

10. What special personal property or service fee(s) would be charged to students taking this course? These charges would be for 1) items that are retained by the student and have an educational or personal value beyond the classroom, or 2) services that are on the student’s behalf (see MnSCU Board Policy 5.11).
      Amount per student: $25 per credit differential tuition
      For: materials for construction of individual class project materials.

11. Attach a sample syllabus for the course. Note: if this course is double-numbered (u-grad/grad), the syllabus must include an additional component for graduate students.
TADT 3462 Computer Controlled Machining

COURSE SYLLABUS

Office: xxxx

Office Hours: xxxx

Office Phone: xxx-xxxx-xxxxx E-mail: xxxx

Credits: 3 Class Location: xxxx

Class meeting times: xxxx

Course Description:
Introduction to computer-controlled machining operations including manual programming and programming using CAM application for CNC (computer controlled machining). Emphasis on tools and materials are applied in a wide variety of manufacturing and modeling operations. Prerequisite: TADT 2461.

Pre-Requisites:
TADT2461

Methods of Instruction:
Lecture, Reading, Research, Questions, Team Exercises/Activities/Presentations and Lab Assignments.

Student Learning Outcomes:
The student will be able to:
- Utilize oral, written and communication skills in the course environment.
- Apply functional computer skills; including software utilization and applications to solve technical problems.
- Use and interpret thoughts and ideas in a graphic form.
- Plan and apply construction, manufacturing, modeling, mechanical, concepts and calculations to construct drawings.
- Apply a fundamental operational knowledge of drawing processes used to produce components and machined parts.

Course Textbook and Materials:
TBD
Note: Safety glasses are required at all times. (ANSI Z87.1 Rating) These will be provided by the instructor and are your responsibility. You will not be allowed in any lab without them. They must be worn during all lab sessions.
Additional Materials:
1. Reference and study materials will be furnished as needed throughout the course.
2. Printed items will be handed out only once. If you are not present, please make your own accommodation for someone to collect handouts for you.

Assignments:
Students are expected to practice the highest standards of ethics, honesty, and integrity in all of their academic work. Any form of academic dishonesty (e.g. plagiarism, cheating and misrepresentation) may result in disciplinary action. Possible disciplinary actions include failure for part or all of the course, as well as suspension from the university.

Evaluation:
As a student in TADT3462, you are responsible for any assigned reading, outside work and for understanding the contents of this syllabus. In addition, you are responsible for participating in lecture and group activities, while meeting all deadlines for projects and exams. Attendance is critical to your success!

Evaluation:
There will be approximately xxx points possible:
- Lab Participation \(x \) points per class period \(x \) x class periods per week =
- xxx Points – Quizzes on lab processes & operations
- xxx points – Exams – Safety and Processes (approx.)
- xxx points – Lab Activities and Assignments (approx.)

All projects submitted for grading must be presented in a professional and timely manner.

Grade Scale
A 90-100%
B 80-89%
C 70-79
D 60-69%
F 0-59%

- Exams and quizzes will not be given after the assigned schedule quiz date unless prior approval and arrangements have been made with the instructor.
- Participation grades will take attendance, class participation, and student conduct into consideration at the Professor's discretion.

- Weekly Class Schedule: TBD

Academic Integrity Policy Statement:
Bemidji State University fosters the highest standards of academic integrity and the highest regard for truth and honesty. The attempt by students to present as their own, any work not actually performed by them; collusion, fabrication, and cheating on examinations, papers, and other course-related work; stealing, duplicating, or selling examinations; substituting for others in class discussions or examinations; producing other students' papers or projects; knowingly furnishing false or misleading academic
information to University officials or on official University records; and altering such information on official University records are considered violations of academic integrity and destructive to the central mission of the University.

Students who violate academic integrity shall, after due process, be subject to University sanctions that may include failure on assignments and examinations and in courses, and suspension or expulsion.

Established academic integrity policies, procedures, and sanctions are communicated in classes and publications such as the student/faculty guides, and during orientation programs. For more information, see the student guide.

Alternative formats for Class Materials:
If you need accommodations due to a documented disability to enable you to fully participate in this course, please speak with the Professor within the first two weeks of the semester enrolled or contact Disability Services, Bangsberg Hall, 101. Phone: 218/755-3883 or E-mail address Disabilityservices@bemidjistate.edu. Also available through the Minnesota Relay Service at 1-800-627-3529.

Course Policies:
Disclaimer:
Your Professor reserves the right to alter the structure, grading scale, topics to be covered, and other requirements related to the class as deemed necessary or desirable.

General Notes:
Communication devices such as cell phones, etc., should be turned off during class. If you are expecting an emergency call make arrangements with the Professor prior to class start. Leave the room before taking the call!

Safety, Health, and Hygiene:
All students are required to wear safety glasses when working in any labs. All equipment is potentially dangerous, especially if misused. Keep all body parts away from moving parts when they are running or powered up. CLEAN IN – CLEAN OUT!

Safety Rules in the Lab:
1. Safety glasses must be worn at all times, including while wearing other protective eye shields.
2. No one will be allowed in the lab wearing sandals, shorts, baggy clothing, chains, dangerous jewelry or any other dangerous clothing (instructor’s discretion).
3. Long hair must be safely pulled back at all times.
4. Do not use equipment you haven’t been instructed to use.
5. Working in the lab after lab hours, requires the attendance of a qualified lab supervisor.
6. No one shall work in the lab alone.
7. Report injuries, no matter how small, immediately to the instructor.
8. Never miss class. You are graded on participation which requires your presents.
9. Safety is the number one priority in this class! Never rush a process/project.
10. A clean shop is a safe shop! At the end of every class or as needed, you will be responsible for cleaning the shop or workstation, and putting all tool in their respective places. Clean In / Clean Out!

11. Tools used for the projects will be explained and demonstrated as projects are assigned. You must have a demonstration of a machine before being allowed to use it. This requires your on-time attendance to class.
BSU Curriculum Forms

Form 3

New Course Form

Course Number:
   Undergraduate: TADT 3470
   Graduate:

Course Title: Concept to Prototype Model

Course Description: Construct a prototype model with emphasis on 3D parametric drawing, 3D printing technology and various machining processes. Project will concentrate on form, fit, function, structural integrity and optimization of the design needed to shape concepts and test ideas. Prerequisite: TADT 1450, TADT 2450, TADT 3462.

Credits: 3

Prerequisite(s): TADT 1450, TADT 2450, TADT 3462

1. Reason(s) for creating this course: Industry demand.

2. How often will this course be offered? Once a year.

3. What are the student learning outcomes for the course (please precede each outcome with "Students will...")?

   Upon successful completion of this course, the student will:
   - Students will understand and demonstrate the process of model construction.
   - Students will distinguish and determine the relationship of construction to form, fit & function as they relate to the stages of conceptual, proof of concept & prototypes.
   - Students will demonstrate machining processes used in construction of a prototype model.
   - Students will evaluate structural and sustainable properties of various materials.
   - Students will experiment with creativity and environmental impacts of products and users.
   - Students will demonstrate proficiency in 3D software and the techniques required to draw a physical model.
   - Students will explain the implications and selection of materials and processes.
   - Students will understand and demonstrate proper safety related to a lab environment.

4. What are the major content areas for the course? Model construction, surface preparation, materials selection and paint application.

5. Is this course repeatable for credit, and if so, what is the maximum number of credits that can be earned? No
6. If this course is intended primarily for off-campus delivery (not offered on campus), what delivery mechanism will be used? On campus

7. What is the projected maximum class size (cap)? 25

8. What qualified faculty will be available to teach this course? Lyle Meulebroeck, Steven Sundahl

NOTE WELL: Department and dean, in approving this proposal, attest both to the adequacy of the qualifications of faculty here named, and to their availability to teach the course at the frequency specified above, without excessive overload or disruption to other curriculum.

9. What additional library and other resources need or should be provided for this course, that are not already available? No

10. What special personal property or service fee(s) would be charged to students taking this course? These charges would be for 1) items that are retained by the student and have an educational or personal value beyond the classroom, or 2) services that are on the student’s behalf (see MnSCU Board Policy 5.11).
   Amount per student: $25 differential tuition

11. Attach a sample syllabus for the course. Note: if this course is double-numbered (u-grad/grad), the syllabus must include an additional component for graduate students.
Concept to Prototype Model
TADT 3470
Course Syllabus
3 Credits

Contact Information:
Professor: xxxx
Bridgeman Hall Office: #xxx
Phone: xxx-xxx-xxxx
Email: xxxx

1. Course Description:
Construct a prototype model with emphasis on 3D parametric drawing, 3D printing technology and various machining processes. Project will concentrate on form, fit, function, structural integrity and optimization of the design needed to shape concepts and test ideas. Prerequisite: TADT 1450, TADT 2450, TADT 3462

2. Pre-Requisites
TADT 1450, TADT 2450, TADT 3462

3. Methods of Instruction:
Lecture, Reading, Research, Questions, Team Exercises/Activities/Presentations and Lab Assignments.

4. Student Learning Outcomes:
Upon successful completion of this course, the student will:

- Students will understand and demonstrate the process of model construction.
- Students will distinguish and determine the relationship of construction to form, fit & function as they relate to the stages of conceptual, proof of concept & prototypes.
- Students will demonstrate machining processes used in construction of a prototype model.
- Students will evaluate structural and sustainable properties of various materials.
- Students will experiment with creativity and environmental impacts of products and users.
- Students will demonstrate proficiency in 3D software and the techniques required to draw a physical model.
- Students will explain the implications and selection of materials and processes.
- Students will understand and demonstrate proper safety related to a lab environment.

5. Course Textbook and Materials:
TBD

Student will be required to purchase: Safety glasses, paint gun, respirator and various sanding materials.

6. Assignments:
- Student will research and present specifications on new model for class construction.
- Tests and quizzes related to technology, materials, construction processes, etc. in model making industry.
- Students will construct four small concept models in a group setting.
- Students will construct one major prototype model.
  - This prototype model will entail usage of multiple materials and shop processes.
  - Model will be graded on professionalism, attention to detail and functionality.
  - Utilize project management techniques from brainstorming to project completion.
7. **Evaluation:**
As a student in TADD 3470, you are responsible for all assigned reading, outside work and for understanding the contents of this syllabus. In addition, you are responsible for participating in lecture and group activities, while meeting all deadlines for projects and exams. Attendance is critical to your success!

Course activities will be scored on approximately 480 points basis distributed as shown below.

<table>
<thead>
<tr>
<th>Activity Weights</th>
<th>Grade Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams &amp; Quizzes</td>
<td>A 90-100%</td>
</tr>
<tr>
<td>Major Prototype Model</td>
<td>B 80-89%</td>
</tr>
<tr>
<td>Assignments/Group Activities</td>
<td>C 70-79</td>
</tr>
<tr>
<td>Research and Presentations</td>
<td>D 60-69%</td>
</tr>
<tr>
<td></td>
<td>F 0-59%</td>
</tr>
</tbody>
</table>

- Exams and quizzes will not be given after the assigned schedule quiz date unless prior approval and arrangements have been made with the instructor.
- Participation grades will take attendance, class participation, and student conduct into consideration at the Professor’s discretion.
- **Weekly Class Schedule: TBD**

8. **Course Policies:**

**Disclaimer:**
Your Professor reserves the right to alter the structure, grading scale, topics to be covered, and other requirements related to the class as deemed necessary or desirable.

**General Notes:**
Communication devices such as cell phones, etc., should be turned off during class. If you are expecting an emergency call make arrangements with the Professor prior to class start. Leave the room before taking the call!

**Safety, Health, and Hygiene:**
All students are required to wear safety glasses when working in any labs. All equipment is potentially dangerous, especially if misused. Keep all body parts away from moving parts when they are running or powered up. CLEAN IN – CLEAN OUT!

9. **Academic Integrity Policy Statement:**
Bemidji State University fosters the highest standards of academic integrity and the highest regard for truth and honesty. The attempt by students to present as their own, any work not actually performed by them; collusion, fabrication, and cheating on examinations, papers, and other course-related work; stealing, duplicating, or selling examinations; substituting for others in class discussions or examinations; producing other students’ papers or projects; knowingly furnishing false or misleading academic information to University officials or on official University records; and altering such information on official University records are considered violations of academic integrity and destructive to the central mission of the University.

Students who violate academic integrity shall, after due process, be subject to University sanctions that may include failure on assignments and examinations and in courses, and suspension or expulsion.

Established academic integrity policies, procedures, and sanctions are communicated in classes and publications such as the student/faculty guides, and during orientation programs. For more information, see the student guide.
10. Alternative formats for Class Materials:
We would like to make sure that all the materials, discussions and activities that are part of the course are accessible to you. If you would like to request accommodations or other services, please forward your request as soon as possible. It is possible to contact Disability Services, Bangsberg Hall, 101. Phone: 218/755-3883 or E-mail address Disabilityservices@bemidjistate.edu. Also available through the Minnesota Relay Service at 1-800-627-3529.
BSU Curriculum Forms

Form 3
Updated: 9.19.15

New Course Form

Course Number:
Undergraduate: TADT 4589
Graduate:

Course Title: Advanced Prototype Project

Course Description: Capstone Project: Construct a highly detailed professional model utilizing a culmination of skills including traditional, non-traditional and 3D printing technologies. Project documentation will be a high priority. This project may be constructed in collaboration with an industry professional. Prerequisite: TADT 3470 and Senior level status or consent of instructor.

Credits: 3

Prerequisite(s): TADT 3470 and senior level status or consent of instructor.

1. Reason(s) for creating this course: Industry demand.

2. How often will this course be offered? Once a year.

3. What are the student learning outcomes for the course (please precede each outcome with "Students will...")?

   Upon successful completion of this course, the student will:
   • Students will design and construct a professional prototype model.
   • Students will critique the design & construction of the model process.
   • Students will examine form/fit/function, materials and textures as they relate to customer interaction.
   • Students will assess human ergonomics as they relate to products, systems and services
   • Students will examine the basics of manufacturability as it relates to product development.
   • Students will articulate problem solving and decision making skills in advanced project setting.
   • Students will understand and demonstrate proper safety related to a lab environment.

4. What are the major content areas for the course? Advanced level model construction and courses related to equipment operation and lab safety.

5. Is this course repeatable for credit, and if so, what is the maximum number of credits that can be earned? No

6. If this course is intended primarily for off-campus delivery (not offered on campus), what delivery mechanism will be used? On campus

7. What is the projected maximum class size (cap)? 25
8. What qualified faculty will be available to teach this course? Lyle Meulebroeck, Steven Sundahl

NOTE WELL: Department and dean, in approving this proposal, attest both to the adequacy of the qualifications of faculty here named, and to their availability to teach the course at the frequency specified above, without excessive overload or disruption to other curriculum.

9. What additional library and other resources need or should be provided for this course, that are not already available? No

10. What special personal property or service fee(s) would be charged to students taking this course? These charges would be for 1) items that are retained by the student and have an educational or personal value beyond the classroom, or 2) services that are on the student’s behalf (see MnSCU Board Policy 5.11). Amount per student: $25 differential tuition

11. Attach a sample syllabus for the course. Note: if this course is double-numbered (u-grad/grad), the syllabus must include an additional component for graduate students.
Advanced Prototype Project
TADT 4589
Course Syllabus
3 Credits

Contact Information:
Professor: xxxx
Bridgeman Hall Office #xxx
Phone: xxx-xxx-xxxx
Email: xxx

2. Course Description:
   Capstone Project: Construct a highly detailed professional model utilizing a culmination of skills including traditional, non-traditional and 3D printing technologies. Project documentation will be a high priority. This project may be constructed in collaboration with an industry professional. Prerequisite: TADT 3470 and Senior level status or consent of instructor.

3. Methods of Instruction:
   Lecture, Reading, Research, Questions, Team Exercises/Activities/Presentations and Lab Assignments.

4. Student Learning Outcomes:
   Upon successful completion of this course, the student will:
   • Students will design and construct a professional prototype model.
   • Students will critique the design & construction of the model process.
   • Students will examine form/fit/function, materials and textures as they relate to customer interaction.
   • Students will assess human ergonomics as they relate to products, systems and services
   • Students will examine the basics of manufacturability as it relates to product development.
   • Students will articulate problem solving and decision making skills in advanced project setting.
   • Students will understand and demonstrate proper safety related to a lab environment.

5. Course Textbook and Materials:
   TBD

   Note: Safety Glasses Required

6. Assignments:
   • Compose a major project timeline and documentation:
     o Consists of dates, etc. showing steps to completion of major model.
     o Materials and material costs.
     o Processes and equipment utilized.
     o Ability to meet given timeline.
   • Construct a major prototype model utilizing multiple skillsets:
     o 3D drawings must be constructed with dimensions, tolerances, etc.
     o Construct the model using timeline, etc.
     o Completed highly detailed model within timeline provided.
7. Evaluation:
As a student in TADD 4589, you are responsible for all assigned reading, outside work and for understanding the contents of this syllabus. In addition, you are responsible for participating in lecture and group activities, while meeting all deadlines for projects and exams. Attendance is critical to your success!

Course activities will be scored on approximately 600 points basis distributed as shown below.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Weight</th>
<th>Grade Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams &amp; Quizzes</td>
<td>100 pts.</td>
<td>A 90-100%</td>
</tr>
<tr>
<td>Timeline &amp; Project Documentation</td>
<td>300 pts.</td>
<td>B 80-89%</td>
</tr>
<tr>
<td>Major Culmination Model</td>
<td>200 pts.</td>
<td>C 70-79%</td>
</tr>
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</tbody>
</table>

- Exams and quizzes will not be given after the assigned schedule quiz date unless prior approval and arrangements have been made with the instructor.
- Participation grades will take attendance, class participation, and student conduct into consideration at the Professor’s discretion.
- Weekly class schedule: TBD

8. Course Policies:
Disclaimer:
Your Professor reserves the right to alter the structure, grading scale, topics to be covered, and other requirements related to the class as deemed necessary or desirable.

General Notes:
Communication devices such as cell phones, etc., should be turned off during class. If you are expecting an emergency call make arrangements with the Professor prior to class start. Leave the room before taking the call!

Safety, Health, and Hygiene:
All students are required to wear safety glasses when working in any labs. All equipment is potentially dangerous, especially if misused. Keep all body parts away from moving parts when they are running or powered up. CLEAN IN – CLEAN OUT!

9. Academic Integrity Policy Statement:
Bemidji State University fosters the highest standards of academic integrity and the highest regard for truth and honesty. The attempt by students to present as their own, any work not actually performed by them; collusion, fabrication, and cheating on examinations, papers, and other course-related work; stealing, duplicating, or selling examinations; substituting for others in class discussions or examinations; producing other students’ papers or projects; knowingly furnishing false or misleading academic information to University officials or on official University records; and altering such information on official University records are considered violations of academic integrity and destructive to the central mission of the University.
Students who violate academic integrity shall, after due process, be subject to University sanctions that may include failure on assignments and examinations and in courses, and suspension or expulsion.

Established academic integrity policies, procedures, and sanctions are communicated in classes and publications such as the student/faculty guides, and during orientation programs. For more information, see the student guide.

10. Alternative formats for Class Materials:
We would like to make sure that all the materials, discussions and activities that are part of the course are accessible to you. If you would like to request accommodations or other services, please forward your request as soon as possible. It is possible to contact Disability Services, Bangsberg Hall, 101. Phone: 218/755-3883 or E-mail address Disabilityservices@bemidji.edu. Also available through the Minnesota Relay Service at 1-800-627-3529.
**BSU Curriculum Forms**

**Form 5**

**Program Modification Form**

Program to be modified:
Applied Engineering, B. A. S. major

List all proposed change(s):
1. Eleven course modifications changing 4 credit courses to 3 credits were made
2. Added one new course to the degree curriculum
3. Re-organize the degree for ease of advising.

Reason(s) for the change(s):

Our Advisory Board members from the manufacturing and construction industries wanted to see more specific course titles and content topics to provide greater opportunities for TADT graduates. Twenty-seven courses in the TADT majors were reduced from 4 credits to 3 with the intent of allowing the existing faculty to create additional courses to address the need for more content and greater distinction between degrees.

As a result of reducing the course credits, minor adjustments were made in descriptions and outcomes. Twelve new courses were created, all of which can be covered by the existing faculty based on a rotation of courses.

New core names were assigned.

The new courses created greater differences between degrees, which had been an issue with the University and also with the Association of Technology Management and Applied Engineering, the accrediting association for the degrees.

**Note:** In order to avoid hidden prerequisites, if a course is being dropped from this program (but not from the entire curriculum), please check for which remaining courses may include this dropped course as a prerequisite. Course prerequisites may be found in the online catalog (http://www.bemidjistate.edu/academics/catalog/). Remedies for hidden prerequisites may be found under Curriculum Forms at (http://www.bemidjistate.edu/faculty_staff/faculty_association/forms/).

**Note:** If a course from another department/program was either added to or dropped from this program, please notify the chair/coordinator of that course's department/program and indicate the following: N/A
The course’s home department/program was notified of the addition or dropping of their course(s) on __________ (date) by __________________ (mail, email, or phone).
Please check one of the items below:

- No comments were received from other programs or departments within one week of the notification.
- Comments were received within one week of the notification, and are attached.

Note: If this is a joint program, the signatures of both department chairs (and both deans, if different colleges) must be provided.

Alert: Attach a copy of the current program showing the marked changes. Please copy the current program from the online catalog (http://www.bemidjistate.edu/academics/catalog/) and paste it into Word. Then use either the Track Changes feature under Tools, or the underline and strikethrough Font feature under Format. (Please note that the Track Changes feature may be easily switched on and off by holding down the Ctrl+Shift+E keys.)

Applied Engineering, B.A.S. major

The Applied Engineering Program is designed to prepare individuals to work in a variety of applied engineering career paths in business or industry. The program is designed specifically for individuals who typically possess a two-year technical degree and are interested in advancing their professional career. The program is a “2+2” degree that permits students to apply their 2 year technical degree credits toward a baccalaureate degree. Coupled with a two-year technical degree providing a focused foundation, students will complete junior- and senior-level courses covering a broad range of applied engineering concepts and applications. This breadth will provide maximum flexibility for graduates to pursue diverse employment opportunities. Completion of the degree is available through a web-based distance delivery format. Students should work closely with an advisor to obtain program and course selection information.

Note: Transfer students must take a minimum of 30 semester credits from Bemidji State University. Forty (40) upper division semester credits are also required for graduation.

Required Credits: 67 78

Required GPA: 2.25

I REQUIRED TECHNICAL CORE COURSES

I. TADT COMMON CORE 15 credits
COMPLETE THE FOLLOWING COURSES:

- TADT 3111 Project Management Methodology (3 credits)
- TADT 3267 Economic and Cost Analysis (3 credits)
- TADT 4385 Sustainability and Emerging Technologies (3 credits)
- TADT 4873 Emphasis Related Capstone (3 credits)
- TADT 4878 Quality Assurance (3 credits)

Requires 26 technical credits transferred from an A.S. or A.A.S. degree, or a diploma (e.g., Manufacturing Technology, Automation Technology)

II. REQUIRED APPLIED ENGINEERING TECHNOLOGY CORE

COMPLETE THE FOLLOWING COURSES:

- TADT 3100 Principles and Practices of Professional Development (2 credits)
- TADT 3267 Engineering Economic and Cost Analysis (4 credits)
- TADT 3700 Production Planning and Control (4 credits)
- TADT 4537 Industrial Design/Innovation (4 credits)
- TADT 4878 Quality Assurance (4 credits)
- TADT 4879 Service Process Design and Improvement (4 credits)
- TADT 4897 Project Management (4 credits)

II. APPLIED ENGINEERING CORE 21 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 3100 Principles and Practices of Professional Development (3 credits)
- TADT 3217 Material Science and Metallurgy (3 credits)
- TADT 3537 Industrial Design and Innovation (3 credits)
- TADT 3700 Operations Planning and Control (3 credits)
- TADT 3887 Safety and Risk Management (3 credits)
- TADT 4867 Lean Principles and Practices (3 credits)
- TADT 4879 Service Process/Improvement (3 credits)

III. TRANSFER TECHNICAL BLOCK 38 credits

Requires 26 38 technical credits transferred from an A.S. or A.A.S. degree, or a diploma (e.g., Manufacturing Technology, Automation Technology)
IV. SELECT 4 CREDITS OF UPPER DIVISION TADT ELECTIVES WITH APPROVAL FROM ADVISOR.

III. APPLIED ENGINEERING TECHNOLOGY ELECTIVES

SELECT 12 CREDITS FROM THE FOLLOWING WITH ASSISTANCE FROM A FACULTY ADVISOR:

- BUAD 3281 Decision Support Systems (3 credits) **
- BUAD 3361 Marketing (3 credits) **
- BUAD 3381 Management Information Systems (3 credits) **
- BUAD 4469 Small Business Case Analysis (3 credits) **
- TADT 3217 Materials Science and Metallurgy (4 credits)
- TADT 3260 Project Bidding and Estimating (4 credits)
- TADT 3460 3D Parametric Modeling and Printing (4 credits)
- TADT 3877 Engineering Problem Solving (4 credits)
- TADT 3878 Industrial/Engineering Production Studies (4 credits)
- TADT 3885 Technical Sales, Service and Training (4 credits)
- TADT 4385 Sustainability and Emerging Technologies (4 credits)
- TADT 4778 Advanced Topics in Technology (4 credits)
- TADT 4875 Facilities Management (4 credits)

** require prerequisites, or junior status and consent of instructor

MAY INCLUDE TADT 4970 FOR 1-2 CREDITS

- TADT 4970 Internship (1-12 credits)

IV. REQUIRED ENGINEERING CAPSTONE

COMPLETE THE FOLLOWING COURSE:

- TADT 4820 Engineering Case Study (3 credits)
APPLIED ENGINEERING, B.A.S. major 78 credits

I. TADT COMMON CORE 15 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 3111 Project Management Methodology (3 credits)
- TADT 3267 Economic and Cost Analysis (3 credits)
- TADT 4385 Sustainability and Emerging Technologies (3 credits)
- TADT 4873 Emphasis Related Capstone (3 credits)
- TADT 4878 Quality Assurance (3 credits)

II. APPLIED ENGINEERING CORE 21 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 3100 Principles of Professional Development (3 credits)
- TADT 3217 Material Science and Metallurgy (3 credits)
- TADT 3537 Industrial Design and Innovation (3 credits)
- TADT 3700 Operations Planning and Control (3 credits)
- TADT 3887 Safety and Risk Management (3 credits)
- TADT 4867 Lean Principles and Practices (3 credits)
- TADT 4879 Services Process/Improvement (3 credits)

III. TRANSFER TECHNICAL BLOCK 38 credits

IV. SELECT 4 CREDITS OF UPPER DIVISION TADT ELECTIVES WITH APPROVAL FROM ADVISOR.
Suggested Four Year Program of Study
Applied Engineering, B.A.S.

* This program has been designed primarily to be offered via the web to individuals who have already completed a 2-year diploma, A.S., or A.A.S. degree.
* A block of 38 technical credits will be accepted toward this degree.
* Students are required to complete a total of 40 credits upper division (3000 & 4000 level) of AE courses.
* Students are required to complete or transfer a total of 42 credits of Liberal Education (general education) courses.
* Contact BSU Admissions office regarding Minnesota Transfer Curriculum (MnTC).
* Summer courses offered based on availability of resources.

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<td>TADT 3700</td>
<td>Operations Planning and Control</td>
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<td>TADT 4879</td>
<td>Service Process/Improvement</td>
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<td>ENGL 3150 or SPCM 1100 Recommended</td>
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<td>TADT 4873</td>
<td>Emphasis Related Capstone</td>
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BSU Curriculum Forms

Form 5

Program Modification Form

Program to be modified:
Technology Management, B.A.S. major

List all proposed change(s):
2. Nine course modifications were made changing 4 credit courses to 3 credits.
3. Two new courses were added to the degree curriculum.
4. Re-organized the degree for ease of advising.
5. Addition of required minor 18-24 credits.
6. Changed transfer block credits from 26 to 36 credits.

Reason(s) for the change(s):

Our Advisory Board members from the manufacturing and construction industries wanted to see more specific course titles and content topics to provide greater opportunities for TADT graduates. Twenty-seven courses in the TADT majors were reduced from 4 credits to 3 with the intent of allowing the existing faculty to create additional courses to address the need for more content and greater distinction between degrees.

As a result of reducing the course credits, minor adjustments were made in descriptions and outcomes. Twelve new courses were created, all of which can be covered by the existing faculty based on a rotation of courses.

New core names were assigned.

The new courses created greater differences between degrees, which had been an issue with the University and also with the Association of Technology Management and Applied Engineering, the accrediting association for the degrees.

Note: In order to avoid hidden prerequisites, if a course is being dropped from this program (but not from the entire curriculum), please check for which remaining courses may include this dropped course as a prerequisite. Course prerequisites may be found in the online catalog (http://www.bemidjistate.edu/academics/catalog/). Remedies for hidden prerequisites may be found under Curriculum Forms at (http://www.bemidjistate.edu/faculty_staff/faculty_association/forms/).
Note: If a course from another department/program was either added to or dropped from this program, please notify the chair/coordinator of that course's department/program and indicate the following: N/A
The course’s home department/program was notified of the addition or dropping of their course(s) on __________ (date) by __________________ (mail, email, or phone).
Please check one of the items below:

_____ No comments were received from other programs or departments within one week of the notification.

_____ Comments were received within one week of the notification, and are attached.

Note: If this is a joint program, the signatures of both department chairs (and both deans, if different colleges) must be provided.

Alert: Attach a copy of the current program showing the marked changes. Please copy the current program from the online catalog (http://www.bemidjistate.edu/academics/catalog/) and paste it into Word. Then use either the Track Changes feature under Tools, or the underline and strikethrough Font feature under Format. (Please note that the Track Changes feature may be easily switched on and off by holding down the Ctrl+Shift+E keys.)

Technology Applied Management, B.A.S. major

The Technology Applied Management program is designed to prepare individuals to pursue a variety of technology-related management career paths in business or industry. The program is designed specifically for individuals who typically possess a two-year technical degree and are interested in advancing their professional career. The program is a “2+2” degree that permits students to apply their 2 year technical degree credits toward a baccalaureate degree. Coupled with a two-year technical/applied degree providing a focused foundation, students complete junior- and senior-level courses covering a broad range of technology and applied management concepts and applications. This breadth provides maximum flexibility for graduates to pursue diverse employment opportunities. Completion of the degree is available through a web-based distance delivery format. Students should work closely with an advisor to obtain program and course selection information.

Note: Upon approval of the Technological Studies staff, certain major courses can be substituted in the Technical and/or Professional Core from related technical and community college programs.

Note: Transfer students must take a minimum of 30 semester credits from Bemidji State University. Forty (40) upper division semester credits are also required for graduation.
Required Credits: 66 78 credits
Required GPA: 2.25

I. TADT COMMON CORE 15 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 3111 Project Management Methodology (3 credits)
- TADT 3267 Economic and Cost Analysis (3 credits)
- TADT 4385 Sustainability and Emerging Technologies (3 credits)
- TADT 4873 Emphasis Related Capstone (3 credits)
- TADT 4878 Quality Assurance (3 credits)

REQUIRED TECHNICAL CORE COURSES

Requires 26 technical credits transferred from an A.S.
or A.A.S. degree, diploma or certificate
(e.g., Manufacturing Technology, Automation Technology)
or 26 technical credits from the Department of Technological Studies course offerings.

II. REQUIRED PROFESSIONAL CORE COURSES

II. APPLIED MANAGEMENT CORE 15 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 3100 Principles of Professional Development (3 credits)
- TADT 3112 Leadership in a Team Environment (3 credits)
- TADT 4880 Total Quality Management (3 credits)
- TADT 3700 Operations Planning and Control (3 credits)
- TADT 4875 Facilities Management (3 credits)

III. TRANSFER PROFESSIONAL BLOCK 30 credits

Requires 26 30 technical credits transferred from an A.S.
or A.A.S. degree, diploma or certificate
(e.g., Manufacturing Technology, Automation Technology)
or 26 technical credits from the Department of Technological Studies course offerings.

IV. APPROVED MINOR 18 credits (15 credits must be unique from the program.)
REQUIRED MINOR
Students are to select a minor that will contribute to their professional aspirations. The minors listed below are recommended, though students have the option to select any minor offered by the University. Students are encouraged to work with their faculty advisor to select an appropriate minor.

Note: When selecting a minor, it should include a minimum of 10 upper division credits to meet the 40 upper division credits required for graduation.

Accounting
Business Administration
Engineering Technology
Leadership

COMPLETE THE FOLLOWING COURSES:

- TADT 3100 Principles and Practices of Professional Development (2 credits)
- TADT 3267 Engineering Economic and Cost Analysis (4 credits)
- TADT 3885 Technical Sales, Service and Training (4 credits)
- TADT 4385 Sustainability and Emerging Technologies (4 credits)
- TADT 4537 Industrial Design/Innovation (4 credits)
- TADT 4875 Facilities Management (4 credits)
- TADT 4878 Quality Assurance (4 credits)
- TADT 4897 Project Management (4 credits)

III TECHNOLOGY MANAGEMENT ELECTIVES

SELECT 10 CREDITS FROM THE FOLLOWING WITH ASSISTANCE FROM A FACULTY ADVISOR:

- BUAD 3281 Decision Support Systems (3 credits)
- BUAD 3361 Marketing (3 credits)
- BUAD 3381 Management Information Systems (3 credits)
- BUAD 4469 Small Business Case Analysis (3 credits)
- TADT 3260 Project Bidding and Estimating (4 credits)
- TADT 3700 Production Planning and Control (4 credits)
- TADT 3877 Engineering Problem Solving (4 credits)
- TADT 3878 Industrial/Engineering Production Studies (4 credits)
- TADT 3878 Industrial/Engineering Production Studies (4 credits)
- TADT 4778 Advanced Topics in Technology (4 credits)

MAY INCLUDE TADT 4970 for 1-2 CREDITS
TADT 4970 Internship (1-12 credits)
APPLIED MANAGEMENT, B.A.S. major 78 credits

I. TADT COMMON CORE 15 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 3111 Project Management Methodology (3 credits)
- TADT 3267 Economic and Cost Analysis (3 credits)
- TADT 4385 Sustainability and Emerging Technologies (3 credits)
- TADT 4873 Emphasis Related Capstone (3 credits)
- TADT 4878 Quality Assurance (3 credits)

II. APPLIED MANAGEMENT CORE 15 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 3100 Principles of Professional Development (3 credits)
- TADT 3112 Leadership in a Team Environment (3 credits)
- TADT 4880 Total Quality Management (3 credits)
- TADT 3700 Operations Planning and Control (3 credits)
- TADT 4875 Facilities Management (3 credits)

III. TRANSFER PROFESSIONAL BLOCK 30 credits

IV. APPROVED MINOR 18 credits (15 credits must be unique from the program.)

REQUIRED MINOR
Students are to select a minor that will contribute to their professional aspirations. The minors listed below are recommended, though students have the option to select any minor offered by the University. Students are encouraged to work with their faculty advisor to select an appropriate minor.

Accounting
Business Administration
Engineering Technology
Leadership

Note: When selecting a minor, it should include a minimum of 10 upper division credits to meet the 40 upper division credits required for graduation.
Suggested Four Year Program of Study  
Applied Management, B.A.S.

* This program has been designed primarily to be offered via the web to individuals who have already completed a 2-year diploma, A.S., or A.A.S. degree.
* A block of 30 applied management related professional credits will be accepted toward this degree.
* Students are required to complete a total of 40 credits. Upper division (3000 & 4000 level) of AM courses
* Students are required to complete or transfer a total of 42 credits of Liberal Education (general education) courses.
* Contact BSU Admissions office regarding Minnesota Transfer Curriculum (MnTC).
* Summer courses offered based on availability of resources.

| Freshman | TADT 3100 | Principles of Professional Development | 3 |
| TADT 3111 | Project Management Methodology | 3 |
| TADT 3112 | Leadership in a Team Environment | 3 |
| TADT 3267 | Economic and Cost Analysis | 3 |
| XXXX/XXXX | Approved Minor credits | 6 |
| Liberal Education | ENGL 1151 Required | 3 |
| Liberal Education | PHYS 1101 Recommended | 4 |
| | Total = 25 |

| Sophomore | TADT 3700 | Operations Planning and Control | 3 |
| TADT 4385 | Sustainability and Emerging Technologies | 3 |
| Liberal Education | Liberal Education Courses | 14 |
| XXXX/XXXX | Approved Minor credits | 6 |
| | Total= 26 |

| Junior | TADT 4875 | Facilities Management | 3 |
| TADT 4880 | Total Quality Management | 3 |
| Liberal Education | ENGL 3150 or SPCM 1100 Recommended | 3 |
| Liberal Education | Liberal Education Course | 6 |
| XXXX/XXXX | Approved Minor credits | 6 |
| | Total = 21 |

| Senior | TADT 4878 | Quality Assurance | 3 |
| TADT 4873 | Emphasis Related Capstone | 3 |
| Liberal Education | Liberal Education Courses | 12 |
| | Total= 18 |
BSU Curriculum Forms

Form 5

Program Modification Form

Program to be modified:
Engineering Technology, B.S. major
List all proposed change(s):
1. Eleven course modifications changing 4 credit courses to 3 credits
2. Added four new courses to degree curriculum
3. Added three courses for other departments
4. Re-organize the degree for ease of advising
5. Emphases were removed from this degree.

Reason(s) for the change(s):

Our Advisory Board members from the manufacturing and construction industries wanted to see more specific course titles and content topics to provide greater opportunities for TADT graduates. Twenty-seven courses in the TADT majors were reduced from 4 credits to 3 with the intent of allowing the existing faculty to create additional courses to address the need for more content and greater distinction between degrees.

As a result of reducing the course credits, minor adjustments were made in descriptions and outcomes. Twelve new courses were created, all of which can be covered by the existing faculty based on a rotation of courses.

New core names were assigned.

The new courses created greater differences between degrees, which had been an issue with the University and also with the Association of Technology Management and Applied Engineering, the accrediting association for the degrees.

Note: In order to avoid hidden prerequisites, if a course is being dropped from this program (but not from the entire curriculum), please check for which remaining courses may include this dropped course as a prerequisite. Course prerequisites may be found in the online catalog (http://www.bemidjistate.edu/academics/catalog/). Remedies for hidden prerequisites may be found under Curriculum Forms at (http://www.bemidjistate.edu/faculty_staff/faculty_association/forms/).

Note: If a course from another department/program was either added to or dropped from this program, please notify the chair/coordinator of that course's department/program and indicate the following:
The course’s home department/program was notified of the addition or dropping of their course(s) on __12-04-2015__ (date) by _____ email _______ (mail, email, or phone).

Please check one of the items below:

______ No comments were received from other programs or departments within one week of the notification.

___X___ Comments were received within one week of the notification, and are attached.
See Appendix B

Note: If this is a joint program, the signatures of both department chairs (and both deans, if different colleges) must be provided.

Alert: Attach a copy of the current program showing the marked changes. Please copy the current program from the online catalog (http://www.bemidjistate.edu/academics/catalog/) and paste it into Word. Then use either the Track Changes feature under Tools, or the underline and strikethrough Font feature under Format. (Please note that the Track Changes feature may be easily switched on and off by holding down the Ctrl+Shift+E keys.)

**Engineering Technology, B.S. major**

The Engineering Technology program prepares individuals for a wide range of career opportunities in business and industry in such areas as management, construction, engineering, product development, quality assurance, safety, and sustainable energy. There are two emphasis options in construction and manufacturing management that provide an opportunity to develop a focused study of management theories and practices in these areas.

Note: Upon approval of the Department of Technological Studies advisor, certain major courses can be substituted in the technical core, professional core, or area of emphasis from related technical and community college programs.

Required Credits: 78
Required GPA: 2.25

**I REQUIRED TECHNICAL CORE COURSES**

COMPLETE THE FOLLOWING COURSES:

- TADT 1210 Materials and Processes - Forming (3 credits)
- TADT 1220 Materials and Processes - Separating (3 credits)
I. TADT COMMON CORE 18 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 1111 Introduction to Project Management (3 credits)
- TADT 3267 Economic and Cost Analysis (3 credits)
- TADT 3970 Internship (1 credit)
- TADT 4385 Sustainability and Emerging Technologies (3 credits)
- TADT 4873 Emphasis Related Capstone (3 credits)
- TADT 4878 Quality Assurance (3 credits)
- TADT 4970 Internship (2 credits)

II. REQUIRED PROFESSIONAL CORE COURSES

COMPLETE THE FOLLOWING COURSES:

- TADT 3267 Engineering Economic and Cost Analysis (4 credits)
- TADT 3885 Technical Sales, Service and Training (4 credits)
- TADT 4385 Sustainability and Emerging Technologies (4 credits)
- TADT 4537 Industrial Design/Innovation (4 credits)
- TADT 4875 Facilities Management (4 credits)
- TADT 4878 Quality Assurance (4 credits)
- TADT 4897 Project Management (4 credits)

II. Engineering Technology Core 54 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 1210 Introduction to Manufacturing Processes I (3 credits)
- TADT 1220 Introduction to Manufacturing Processes II (3 credits)
- TADT 1460 2D Graphics and Etching (3 credits)
- TADT 1464 Engineering Technology Project 1 (3 credits)
- TADT 2100 Impact of Technology (2 credits)
- TADT 2217 Strength of Materials (3 credits)
- TADT 2461 Parametric 3D Modeling (3 credits)
- TADT 2465 Engineering Technology Project 2 (3 credits)
- TADT 2877 Engineering Problem Solving (3 credits)
- TADT 3217 Material Science and Metallurgy (3 credits)
- TADT 3277 Programmable Logic Controllers (3 credits)
- TADT 3462 Computer Controlled Machining (3 credits)
- TADT 3537 Industrial Design and Innovation (3 credits)
- TADT 4778 Advanced Topics in Technology (3 credits)
- MATH 1470 Precalculus (5 credits)
- PHYS 1101 General Physics I (4 credits)
- PHYS 1101 1102 General Physics II (4 credits)

III. SELECT 7 CREDITS FROM THE FOLLOWING:

- TADT 3250 Print Reading and Project Documentation (3 credits)
- TADT 4589 Advanced Prototype Project (3 credits)
- TADT 4880 Total Quality Management (3 credits)
- TADD 3440 3D Digital Foundations (4 credits)
- TADD 3450 History of Modern Design (4 credits)
- TADD 3579 Digital Print/Branding and Publication (4 credits)

III REQUIRED FOUNDATION COURSES

TAKE 6 SEMESTER CREDITS OF MATH AT THE 1100 OR HIGHER LEVEL. STUDENTS ARE ENCOURAGED TO TAKE STATISTICS AND CALCULUS.

TAKE 7 SEMESTER CREDITS FROM AMONG THE PHYSICS, CHEMISTRY, OR PHYSICAL SCIENCE (SPECIFICALLY, SCI 1110 AND SCI 1120) COURSES THAT ARE APPROVED TO FULFILL LIBERAL EDUCATION CATEGORY 3. OTHER CATEGORY 3 COURSES MAY BE SUBSTITUTED IF APPROVED BY THE CHAIR OF THE DEPARTMENT OF TECHNOLOGICAL STUDIES. STUDENTS ARE ENCOURAGED TO TAKE A COMBINATION OF PHYSICS AND CHEMISTRY.

CONSTRUCTION MANAGEMENT EMPHASIS
SELECT 16 CREDITS FROM THE FOLLOWING COURSES:
STUDENTS MUST CHOOSE A CONSTRUCTION-RELATED TOPIC FOR TADT 4778, ADVANCED TOPICS IN TECHNOLOGY

- TADT 3250 Print Reading and Project Documentation (4 credits)
- TADT 3260 Project Bidding and Estimating (4 credits)
- TADT 4259 Construction Management (4 credits)
- TADT 4260 Computerized Construction Estimating
- TADT 4778 Advanced Topics in Technology (4 credits)

TADT 4970 MAY BE TAKEN FOR 4 CREDITS

- TADT 4970 Internship (1-12 credits)

(Clean Copy)

ENGINEERING TECHNOLOGY, B.S. 79 credits

I. TADT COMMON CORE 18 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 1111 Introduction to Project Management (3 credits)
- TADT 3267 Economic and Cost Analysis (3 credits)
- TADT 3970 Internship (1 credit)
- TADT 4385 Sustainability and Emerging Technologies (3 credits)
- TADT 4873 Emphasis Related Capstone (3 credits)
- TADT 4878 Quality Assurance (3 credits)
- TADT 4970 Internship (2 credits)

II. Engineering Technology Core 54 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 1210 Introduction to Manufacturing Processes I (3 credits)
- TADT 1220 Introduction to Manufacturing Processes II (3 credits)
- TADT 1460 2D Graphics and Etching (3 credits)
- TADT 1464 Engineering Technology Project 1 (3 credits)
- TADT 2100 Impact of Technology (2 credits)
- TADT 2217 Strength of Materials (3 credits)
- TADT 2461 Parametric 3D Modeling (3 credits)
• TADT 2465 Engineering Technology Project 2 (3 credits)
• TADT 2877 Engineering Problem Solving (3 credits)
• TADT 3217 Material Science and Metallurgy (3 credits)
• TADT 3277 Programmable Logic Controllers (3 credits)
• TADT 3462 Computer Controlled Machining (3 credits)
• TADT 3537 Industrial Design and Innovation (3 credits)
• TADT 4778 Advanced Topics in Technology (3 credits)
• MATH 1470 Precalculus (5 credits)
• PHYS 1101 General Physics I (4 credits)
• PHYS 1102 General Physics II (4 credits)

III. SELECT 7 CREDITS FROM THE FOLLOWING:

• TADT 3250 Print Reading and Project Documentation (3 credits)
• TADT 4589 Advanced Prototype Project (3 credits)
• TADT 4880 Total Quality Management (3 credits)
• TADD 3440 3D Digital Foundations (4 credits)
• TADD 3450 History of Modern Design (4 credits)
• TADD 3579 Digital Print/Branding and Publication (4 credits)
## Suggested Four Year Program of Study
### Engineering Technology, B.S.

#### Freshman Year

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<td>2D Graphics and Laser Etching</td>
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<td>Engineering Technology Project I</td>
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<td>TADT 1220</td>
<td>Introduction to Manufacturing Processes II</td>
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<td>Liberal Education PHYS 1102 General Physics II (required core course)</td>
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#### Sophomore Year

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#### Sophomore Year - Summer

TADT 3970 Internship – 1 credit

#### Junior Year

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<td>TADT 3267</td>
<td>Economic and Cost Analysis</td>
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<td>TADT 3277</td>
<td>Programmable Logic Controllers</td>
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#### Junior Year - Summer

TADT 4970 Internship – 2 credits

#### Senior Year

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<td>TADT 4385</td>
<td>Sustainability and Emerging Technologies</td>
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<td>TADT 4778</td>
<td>Advanced Topics in Technology</td>
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<td>TADT 4878</td>
<td>Quality Assurance</td>
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<td>Emphasis Related Capstone</td>
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BSU Curriculum Forms

Form 5

Program Modification Form

Program to be modified:
Project Management, B.S. major

List all proposed change(s):
1. Nineteen course modification changing 4 credit courses to 3 credits
2. Six new courses were added to the degree curriculum
3. Used four courses from other departments
4. Re-organized the degree for ease of advising
5. Create one new emphasis and combined two existing emphases.

Reason(s) for the change(s):

Our Advisory Board members from the manufacturing and construction industries wanted to see more specific course titles and content topics to provide greater opportunities for TADT graduates. Twenty-seven courses in the TADT majors were reduced from 4 credits to 3 with the intent of allowing the existing faculty to create additional courses to address the need for more content and greater distinction between degrees.

As a result of reducing the course credits, minor adjustments were made in descriptions and outcomes. Twelve new courses were created, all of which can be covered by the existing faculty based on a rotation of courses.

New core names were assigned

The new courses created greater differences between degrees, which had been an issue with the University and also with the Association of Technology Management and Applied Engineering, the accrediting association for the degrees.

Note: In order to avoid hidden prerequisites, if a course is being dropped from this program (but not from the entire curriculum), please check for which remaining courses may include this dropped course as a prerequisite. Course prerequisites may be found in the online catalog (http://www.bemidjistate.edu/academics/catalog/). Remedies for hidden prerequisites may be found under Curriculum Forms at (http://www.bemidjistate.edu/faculty_staff/faculty_association/forms/).

Note: If a course from another department/program was either added to or dropped from this program, please notify the chair/coordinator of that course's department/program and indicate the following: The course’s home department/program was notified of the addition or dropping of their course(s) on ___12/04/2015___ (date) by _________email____________ (mail, email, or phone).

For both ACCT and BUAD courses
Please check one of the items below:

_____ No comments were received from other programs or departments within one week of the notification.

___X___ Comments were received within one week of the notification, and are attached.

See Appendix B

Note: If this is a joint program, the signatures of both department chairs (and both deans, if different colleges) must be provided.

Alert: Attach a copy of the current program showing the marked changes. Please copy the current program from the online catalog (http://www.bemidjistate.edu/academics/catalog/) and paste it into Word. Then use either the Track Changes feature under Tools, or the underline and strikethrough Font feature under Format. (Please note that the Track Changes feature may be easily switched on and off by holding down the Ctrl+Shift+E keys.)

Project Management, B.S. major

The Project Management degree prepares graduates for planning and managing resources under the constraints of scope, cost and time to successfully achieve a specific, unique objective. This program addresses the tools, skills and knowledge necessary to initiate, plan, implement and evaluate projects to deliver solutions. Program disciplines include: safety and risk management, leadership, quality assurance, technical sales, training, sustainability, engineering economics and cost analysis. Project Management majors have the option to select from three distinct technology related emphases: Construction and Management, Facility Management, Product Development, or Operations Management. Technical credits may be transferred in with the help of an advisor.

Required Credits: 78 72
Required GPA: 2.25

I REQUIRED TECHNICAL CORE COURSES I. TADT COMMON CORE 18 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 1111 Introduction to Project Management (3 credits)
- TADT 3267 Economic and Cost Analysis (3 credits)
- TADT 3970 Internship (1 credit)
• TADT 4385 Sustainability and Emerging Technologies (3 credits)
• TADT 4873 Emphasis Related Capstone (3 credits)
• TADT 4878 Quality Assurance (3 credits)
• TADT 4970 Internship (2 credits)

SELECT 22 SEMESTER CREDITS FROM THE FOLLOWING COURSES:

• TADT 1227 Fabricating Fundamentals (3 credits)
• TADT 1315 Energy and Power Technology (3 credits)
• TADT 1350 Electrical/Electronic Technology (3 credits)
• TADT 1460 2D Graphics and Laser Etching (3 credits)
• TADT 2370 Automation Technology (3 credits)
• TADT 3460 3D Parametric Modeling and Printing (4 credits)
• TADT 4537 Industrial Design/Innovation (4 credits)
• TADT 4778 Advanced Topics in Technology (4 credits)

22 Application/Technical Core credits may be transferred into this section from other institutions with approval of advisor.

II REQUIRED PROFESSIONAL CORE COURSES

II. PROJECT MANAGEMENT CORE 27 credits

COMPLETE THE FOLLOWING COURSES:

• ACCT1101 Principles of Accounting 1 (3 credits)
• TADT 1460 2D Graphics and Etching (3 credits)
• BUAD 2220 Legal Environment (3 credits)
• BUAD 2280 Business Computer Applications (3 credits)
• TADT 2877 Engineering Problem Solving (3 credits)
• TADT 3112 Leadership in a Team Environment (3 credits)
• TADT 3885 Technical Sales and Service Training (3 credits)
• TADT 4875 Facilities Management (3 credits)
• TADT 4893 Applied Project Management (3 credits)

COMPLETE THE FOLLOWING COURSES:

• TADT 1110 Introduction to Project Management (4 credits)
• TADT 3267 Engineering Economic and Cost Analysis (4 credits)
• TADT 3877 Engineering Problem Solving (4 credits)
• TADT 3885 Technical Sales, Service and Training (4 credits)
• TADT 3887 Safety and Risk Management (4 credits)
CONSTRUCTION MANAGEMENT EMPHASIS

CONSTRUCTION and FACILITY MANAGEMENT EMPHASIS 27 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 1210 Introduction to Manufacturing Processes I (3 credits)
- TADT 1220 Introduction to Manufacturing Processes II (3 credits)
- TADT 2250 Construction Technology: Built Environment (4 credits) (3 credits)
- TADT 2252 Construction Materials and Methods (3 credits)
- TADT 3250 Print Reading and Project Documentation (4 credits) (3 credits)
- TADT 3260 Project Bidding and Estimating (4 credits) (3 credits)
- BUAD 3677 Principles of Real Estate (3 credits)
- TADT 3887 Safety and Risk Management (3 credits)
- TADT 4259 Construction Management (4 credits) (3 credits)
- TADT 4778 Advanced Topics in Technology (4 credits)
- TADT 4970 (1 CREDIT)
- TADT 4970 Internship (1-12 credits)

FACILITY MANAGEMENT EMPHASIS

COMPLETE THE FOLLOWING COURSES:

- TADT 2250 Construction Technology (3 credits)
- BUAD 3677 Principles of Real Estate (3 credits)
- TADT 4873 Emphasis Related Capstone (4 credits)
- TADT 4875 Facilities Management (4 credits)

TADT 4970 (2 CREDITS)

- TADT 4970 Internship (1-12 credits)
# Suggested Four Year Program of Study

**Project Management – Construction and Facility Management Emphasis**

## Freshman Year

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<tr>
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<th>Credits</th>
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<tr>
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<td>2D Graphics And Laser Etching</td>
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<td>Introduction to Manufacturing Processes I</td>
<td>3</td>
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<td>Introduction to Manufacturing Processes II</td>
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<td>ACCT 1101</td>
<td>Principles of Accounting I</td>
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<td>BUAD 2280</td>
<td>Computer Business Applications</td>
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## Sophomore Year

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<td>TADT 2877</td>
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<td>TADT 2252</td>
<td>Construction Materials &amp; Methods</td>
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<td>Legal Environment</td>
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## Junior Year

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<td>Technical Sales &amp; Service Training</td>
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<td>TADT 3112</td>
<td>Leadership in a Team Environment</td>
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<td>TADT 3250</td>
<td>Print Reading and Project Documentation</td>
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<td>TADT 3267</td>
<td>Economic and Cost Analysis</td>
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<td>TADT 3887</td>
<td>Safety &amp; Risk Management</td>
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<td>Project Bidding and Estimating</td>
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<td>BUAD3677</td>
<td>Principles of Real Estate</td>
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<td>TADT 4893</td>
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PRODUCT DEVELOPMENT EMPHASIS 27 credits (New Emphasis)

COMPLETE THE FOLLOWING COURSES:

- TADT 1210 Introduction to Manufacturing Processes I (3 credits)
- TADT 1220 Introduction to Manufacturing Processes II (3 credits)
- TADT 1450 Introduction to Product Development (3 credits)
- TADT 2450 Product Finishing and Aesthetics (3 credits)
- TADT 2461 Parametric 3D Modeling (3 credits)
- TADT 3462 Computerized Controlled Machining (3 credits)
- TADT 3470 Concept to Prototype Model (3 credits)
- TADT 3537 Industrial Design and Innovation (3 credits)
- TADT 4589 Advanced Prototype (3 credits)
Suggested Four Year Program of Study  
Project Management - Product Development Emphasis

**Freshman Year**

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<td>2D Graphics And Laser Etching</td>
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**Sophomore Year**

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<td>Legal Environment</td>
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</table>

**Sophomore Year - Summer**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TADT 3970</td>
<td>Internship – 1 credit</td>
<td></td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>TADT 3885</td>
<td>Technical Sales &amp; Service Training</td>
<td>3</td>
</tr>
<tr>
<td>TADT 3112</td>
<td>Leadership in a Team Environment</td>
<td>3</td>
</tr>
<tr>
<td>TADT 3470</td>
<td>Prototype Model</td>
<td>3</td>
</tr>
<tr>
<td>TADT 3267</td>
<td>Economic and Cost Analysis</td>
<td>3</td>
</tr>
<tr>
<td>TADT 3537</td>
<td>Industrial Design</td>
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<tr>
<td>Liberal Education</td>
<td>ENGL 3150 or SPCM 1100 Recommended</td>
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<tr>
<td>Liberal Education</td>
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<td>Free Elective</td>
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**Junior Year - Summer**

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TADT 4970</td>
<td>Internship – 2 credits</td>
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**Senior Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>TADT 4589</td>
<td>Advanced Prototype</td>
<td>3</td>
</tr>
<tr>
<td>TADT 4385</td>
<td>Sustainability and Emerging Technologies</td>
<td>3</td>
</tr>
<tr>
<td>TADT 4875</td>
<td>Facilities Management</td>
<td>3</td>
</tr>
<tr>
<td>TADT 4873</td>
<td>Emphasis Related Capstone</td>
<td>3</td>
</tr>
<tr>
<td>TADT 4878</td>
<td>Quality Assurance</td>
<td>3</td>
</tr>
<tr>
<td>TADT 4893</td>
<td>Applied Project Management</td>
<td>3</td>
</tr>
<tr>
<td>Liberal Education</td>
<td>Liberal Education Course</td>
<td>3</td>
</tr>
<tr>
<td>XXXX</td>
<td>Free Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td>24</td>
</tr>
</tbody>
</table>
OPERATIONS MANAGEMENT EMPHASIS

COMPLETE THE FOLLOWING COURSES:

- TADT 1210 Introduction to Manufacturing Processes I (3 credits)
- TADT 1220 Introduction to Manufacturing Processes II (3 credits)
- TADT 2461 Parametric 3D Modeling (3 credits)
- TADT 3100 Principles and Practices of Professional Development (3 credits)
- TADT 3700 Operations Planning and Control (4 credits) (3 credits)
- TADT 3878 Industrial/Engineering Production Studies (4 credits)
- TADT 4873 Emphasis Related Capstone (4 credits) (3 credits)
- TADT 3887 Safety and Risk Management (3 credits)
- TADT 4867 Lean Principles and Practices (3 credits)
- TADT 4879 Service Process Design and Improvement (4 credits) (3 credits)
- TADT 4880 Total Quality Management (3 credits)
Suggested Four Year Program of Study  
Project Management - Operations Management Emphasis

<table>
<thead>
<tr>
<th><strong>Freshman Year</strong></th>
<th></th>
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<tbody>
<tr>
<td>TADT 1111</td>
<td>Introduction to Project Management</td>
</tr>
<tr>
<td>TADT 1460</td>
<td>2D Graphics And Laser Etching</td>
</tr>
<tr>
<td>TADT 1210</td>
<td>Introduction to Manufacturing Processes I</td>
</tr>
<tr>
<td>TADT 1220</td>
<td>Introduction to Manufacturing Processes II</td>
</tr>
<tr>
<td>ACCT 1101</td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>BUAD 2280</td>
<td>Computer Business Applications</td>
</tr>
<tr>
<td>Liberal Education</td>
<td>PHYS 1101 Recommended</td>
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<tr>
<td>Liberal Education</td>
<td>ENGL 1151 Required</td>
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<table>
<thead>
<tr>
<th><strong>Sophomore Year</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TADT 2461</td>
<td>Parametric 3D Modeling</td>
</tr>
<tr>
<td>TADT 2877</td>
<td>Engineering Problem Solving</td>
</tr>
<tr>
<td>BUAD 2220</td>
<td>Legal Environment</td>
</tr>
<tr>
<td>Liberal Education</td>
<td>Liberal Education Courses</td>
</tr>
<tr>
<td></td>
<td><strong>Total = 31</strong></td>
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</table>

<table>
<thead>
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<th><strong>Sophomore Year - Summer</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TADT 3970 Internship</td>
<td>– 1 credit</td>
</tr>
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</table>

<table>
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<th><strong>Junior Year</strong></th>
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</tr>
</thead>
<tbody>
<tr>
<td>TADT 3100</td>
<td>Principles of Professional Development</td>
</tr>
<tr>
<td>TADT 3112</td>
<td>Leadership in a Team Environment</td>
</tr>
<tr>
<td>TADT 3885</td>
<td>Technical Sales &amp; Service</td>
</tr>
<tr>
<td>TADT 3267</td>
<td>Economic and Cost Analysis</td>
</tr>
<tr>
<td>TADT 3887</td>
<td>Safety &amp; Risk Management</td>
</tr>
<tr>
<td>TADT 3700</td>
<td>Operations Planning and Control</td>
</tr>
<tr>
<td>Liberal Education</td>
<td>ENGL 3150 or SPCM 1100 Recommended</td>
</tr>
<tr>
<td>Liberal Education</td>
<td>Liberal Education Courses</td>
</tr>
<tr>
<td>XXXX</td>
<td>Free Elective</td>
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<td>XXXX</td>
<td>Free Elective</td>
</tr>
<tr>
<td></td>
<td><strong>Total = 31</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Junior Year - Summer</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TADT 4970 Internship</td>
<td>– 2 credits</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Senior Year</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TADT 4867</td>
<td>Lean Principles and Practices</td>
</tr>
<tr>
<td>TADT 4880</td>
<td>Total Quality Management</td>
</tr>
<tr>
<td>TADT 4875</td>
<td>Facilities Management</td>
</tr>
<tr>
<td>TADT 4879</td>
<td>Service Process/Improvement</td>
</tr>
<tr>
<td>TADT 4878</td>
<td>Quality Assurance</td>
</tr>
<tr>
<td>TADT 4385</td>
<td>Sustainability and Emerging Technologies</td>
</tr>
<tr>
<td>TADT 4893</td>
<td>Applied Project Management</td>
</tr>
<tr>
<td>TADT 4873</td>
<td>Emphasis Related Capstone</td>
</tr>
<tr>
<td></td>
<td><strong>Total = 24</strong></td>
</tr>
</tbody>
</table>
I. TADT COMMON CORE 18 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 1111 Introduction to Project Management (3 credits)
- TADT 3267 Economic and Cost Analysis (3 credits)
- TADT 3970 Internship (1 credit)
- TADT 4385 Sustainability and Emerging Technologies (3 credits)
- TADT 4873 Emphasis Related Capstone (3 credits)
- TADT 4878 Quality Assurance (3 credits)
- TADT 4970 Internship (2 credits)

II. PROJECT MANAGEMENT CORE 27 credits

COMPLETE THE FOLLOWING COURSES:

- ACCT1101 Principles of Accounting 1 (3 credits)
- TADT 1460 2D Graphics and Etching (3 credits)
- BUAD 2220 Legal Environment (3 credits)
- BUAD 2280 Business Computer Applications (3 credits)
- TADT 2877 Engineering Problem Solving (3 credits)
- TADT 3112 Leadership in a Team Environment (3 credits)
- TADT 3885 Technical Sales and Service Training (3 credits)
- TADT 4875 Facilities Management (3 credits)
- TADT 4893 Applied Project Management (3 credits)

III. SELECT ONE OF THREE EMPHASIS:

CONSTRUCTION and FACILITY MANAGEMENT EMPHASIS 27 credits

COMPLETE THE FOLLOWING COURSES:

- TADT 1210 Introduction to Manufacturing Processes I (3 credits)
- TADT 1220 Introduction to Manufacturing Processes II (3 credits)
- TADT 2250 Built Environment (3 credits)
- TADT 2252 Construction Materials and Methods (3 credits)
- TADT 3250 Print Reading and Documentation (3 credits)
- TADT 3260 Project Bidding and Estimating (3 credits)
- TADT 3887 Safety and Risk Management (3 credits)
- TADT 4259 Construction Management (3 credits)
• BUAD 3677 Principles of Real Estate (3 credits)

PRODUCT DEVELOPMENT EMPHASIS 27 credits

COMPLETE THE FOLLOWING COURSES:

• TADT 1210 Introduction to Manufacturing Processes I (3 credits)
• TADT 1220 Introduction to Manufacturing Processes II (3 credits)
• TADT 1450 Introduction to Product Development (3 credits)
• TADT 2450 Product Finishing and Aesthetics (3 credits)
• TADT 2461 Parametric 3D Modeling (3 credits)
• TADT 3470 Concept to Prototype Model (3 credits)
• TADT 3537 Industrial Design and Innovation (3 credits)
• TADT 3462 Computerized Controlled Machining (3 credits)
• TADT 4589 Advanced Prototype (3 credits)

OPERATIONS MANAGEMENT EMPHASIS 27 credits

COMPLETE THE FOLLOWING COURSES:

• TADT 1210 Introduction to Manufacturing Processes I (3 credits)
• TADT 1220 Introduction to Manufacturing Processes II (3 credits)
• TADT 2461 Parametric 3D Modeling (3 credits)
• TADT 3100 Principles and Practices of Professional Development (3 credits)
• TADT 3700 Operations Planning and Control (3 credits)
• TADT 3887 Safety and Risk Management (3 credits)
• TADT 4879 Services Process and Design Improvement (3 credits)
• TADT 4867 Lean Principles and Practices (3 credits)
• TADT 4880 Total Quality Management (3 credits)
BSU Curriculum Forms

Form 5

Program Modification Form

Program to be modified: Project Management minor

List all proposed change(s):

4. Nineteen course modification changing 4 credit courses to 3 credits
5. Six new courses were added to the degree curriculum
6. Used four courses from other departments
7. Re-organized the degree for ease of advising

Reason(s) for the change(s):
Our Advisory Board members from the manufacturing and construction industries wanted to see more specific course titles and content topics to provide greater opportunities for TADT graduates. Twenty-seven courses in the TADT majors were reduced from 4 credits to 3 with the intent of allowing the existing faculty to create additional courses to address the need for more content and greater distinction between degrees.

As a result of reducing the course credits, minor adjustments were made in descriptions and outcomes. Twelve new courses were created, all of which can be covered by the existing faculty based on a rotation of courses.

New core names were assigned

The new courses created greater differences between degrees, which had been an issue with the University and also with the Association of Technology Management and Applied Engineering, the accrediting association for the degrees.

Note: In order to avoid hidden prerequisites, if a course is being dropped from this program (but not from the entire curriculum), please check for which remaining courses may include this dropped course as a prerequisite. Course prerequisites may be found in the online catalog (http://www.bemidjistate.edu/academics/catalog/). Remedies for hidden prerequisites may be found under Curriculum Forms at (http://www.bemidjistate.edu/faculty_staff/faculty_association/forms/).

Note: If a course from another department/program was either added to or dropped from this program, please notify the chair/coordinator of that course's department/program and indicate the following: N/A
The course’s home department/program was notified of the addition or dropping of their course(s) on __________ (date) by _________________ (mail, email, or phone).

Please check one of the items below:
No comments were received from other programs or departments within one week of the notification.

Comments were received within one week of the notification, and are attached.

Note: If this is a joint program, the signatures of both department chairs (and both deans, if different colleges) must be provided.

Alert: Attach a copy of the current program showing the marked changes. Please copy the current program from the online catalog (http://www.bemidjistate.edu/academics/catalog/) and paste it into Word. Then use either the Track Changes feature under Tools, or the underline and strikethrough Font feature under Format. (Please note that the Track Changes feature may be easily switched on and off by holding down the Ctrl+Shift+E keys.)

Project Management minor

Required Credits: 24 18
Required GPA: 2.00

COMPLETE THE FOLLOWING COURSES:

- TADT 1110 Introduction to Project Management (4 credits)
- TADT 3267 Engineering Economic and Cost Analysis (4 credits)
- TADT 3887 Safety and Risk Management (4 credits)
- TADT 4812 Leadership Mentoring (1 credit)
- TADT 4820 Engineering Case Study (3 credits)
- TADT 4878 Quality Assurance (3 credits)
- TADT 4897 Project Management (4 credits)

COMPLETE THE FOLLOWING COURSES:

- Select One:
  - TADT 1111 Introduction to Project Management (3 credits) (on campus) or
  - TADT 3111 Project Management Methodology (3 credits) (online)
- TADT 3112 Leadership in a Team Environment (3 credits)
- TADT 3267 Economic and Cost Analysis (3 credits)
- TADT 3885 Technical Sales and Service Training (3 credits)
- TADT 4878 Quality Assurance (3 credits)
- TADT 4893 Applied Project Management (3 credits)
BSU Curriculum Forms

Form 6
(Updated: 9.15.15)

New Program Form

Type of Program to be established:

_____M.S.*
_____M.A.*
_____Applied Masters**
_____B.S.
_____B.S./T.L.
_____B.A.
__X__ Minor

Field of Emphasis: Stand Alone
Field of Emphasis in:
Other:

Program name: Engineering Technology minor

Reason(s) for new program: To attract students from other majors who express an interest in hand-on, lab-based courses, and to create broader opportunities for their success.

Student learning outcomes for the program (please use the same format as for other programs in the department):

1 Technological Development and Innovation
Graduates will demonstrate higher learning abilities by applying technological innovations to address real world problems.

2 Technology Transfer
Graduates will assess current knowledge for application to emerging technologies.

3 Communication
Graduates will demonstrate professional communication skills and the ability to work effectively as a part of a team in a technological environment.

4 Leadership
Graduates will apply principles of leadership, management, and supervision in a variety of technological settings.

5 Ethics and Sustainability in Technology
Graduates will ethically employ global technologies to address social, economic and environmental issues.
How will the student learning outcomes be assessed (e.g., major field test, student portfolio, departmental rubric, department-developed examination questions, etc.)?

Through the use of Task Stream Assessment Planning using the B. S. in Engineering Technology Outcome Set (See Appendix A for the Task Stream B.S. in Engineering Technology, 2015-16 Assessment Planning pdf. for the specifics).

Note: If courses from other departments are required for this program, please notify the chairs of those departments. N/A

The home department/program was notified that this new program will require courses from their area: ________ (date) by ____________________ (mail, email, or phone).

Please check one of the items below:

_______ No comments were received from other programs or departments within one week of the notification.

_______ Comments were received within one week of the notification, and are attached.

Note: If this is a joint program, the signatures of both department chairs (and both deans, if different colleges) must be provided. N/A

Alerts:

● Attach draft catalog copy of proposed program. See attached file.

● Contact the Assistant Vice-President for Academic Affairs regarding approval downstate (required for all of the above except for a minor where there is an existing major).

* MS/MA Curriculum proposals for graduate programs must indicate how the program addresses these requirements (in the draft catalog copy or elsewhere):

   a. MnSCU 50% rule: At least one-half of the required credits in a master's degree, exclusive of a thesis, capstone, or similar culminating project, shall be credits restricted exclusively to graduate student enrollment.

   b. Competency Requirement

   c. Written Examination Requirement

**Applied Master’s Degree must address items a-c above, as well as:
d. How the proposed capstone experience meets the capstone requirements/standards listed in the catalog.

For more information on each of these requirements refer to the current graduate catalog.

**ENGINEERING TECHNOLOGY MINOR (18 credits) 15 credits must be unique from major**

**COMPLETE THE FOLLOWING COURSES:**

- TADT 1210 Introduction to Manufacturing Processes I (3 credits)
- TADT 1220 Introduction to Manufacturing Processes II (3 credits)
- TADT 1450 Introduction to Product Development (3 credits)
- TADT 1460 2D Graphics and Etching (3 credits)
- TADT 3267 Economic and Cost Analysis (3 credits)
- TADT 3537 Industrial Design and Innovation (3 credits)
Appendix A: TaskStream Outcomes and Assessments

The outcomes and assessments for all four degrees are the same, therefore only one copy is listed below.

B.S. in Engineering Technology Outcome Set

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Measure: CTM Exam / Technology Management Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Technological Development and Innovation</td>
<td>Institution level, Direct - Other</td>
</tr>
<tr>
<td>Details/Description: Senior level students will take the ATMAE Certified Technology Management (CTM) certification exam. The Professional Core will prepare students for the CTM exam. The Technological Development and Innovation outcome will be assessed through the management section of the ATMAE exam.</td>
<td></td>
</tr>
<tr>
<td>Acceptable Target (optional): At least 70% of the students will achieve a passing score as determined by ATMAE. ATMAE will provide a yearly report of weaknesses and strengths in this area.</td>
<td></td>
</tr>
<tr>
<td>Ideal Target (optional): The better qualified students are in technological management skills the greater their ability to apply technological innovations to address real world problems.</td>
<td></td>
</tr>
<tr>
<td>Implementation Plan (timeline): Optional student graduation requirement to be taken during their senior year.</td>
<td></td>
</tr>
<tr>
<td>Key/Responsible Personnel: The instructor of record for any professional core course.</td>
<td></td>
</tr>
<tr>
<td>Supporting Attachments:</td>
<td></td>
</tr>
<tr>
<td><img src="https://example.com" alt="Certified Technology Manager Exam.pdf" /></td>
<td></td>
</tr>
</tbody>
</table>

Measure: Innovation and Design in Technology

Course level; Direct - Student Artifact

Details/Description: Students will propose solutions to real world problems by completing a Major Individual Design Proposal in TADT 4537.

Acceptable Target (optional): At least 90% of the students will demonstrate a higher level (70% or higher) of performance on applying technological innovations to address real world problems. The Technological Development and Innovation outcome will be assessed through Major Individual Design Proposal.

Ideal Target (optional): See the attached proposal requirements and rubric.

Implementation Plan (timeline): This course is offered twice a year.

Key/Responsible Personnel: The instructor of record for TADT 4537.

Supporting Attachments:

![4537 Major Design Proposal Assignment On-line.pdf](https://example.com)
Details/Description: Senior level students will take the ATMAE Certified Technology Management (CTM) certification exam. The Professional Core will prepare students for the CTM exam. The Technology Transfer outcome will be assessed through the production section of the ATMAE exam.
Acceptable Target (optional): At least 70% of the students will achieve a passing score as determined by ATMAE. ATMAE will provide a yearly report of weaknesses and strengths in this area.
Ideal Target (optional): The better qualified students are in production strategies the greater their ability to apply and assess current knowledge of technological transfer to emerging applications.
Implementation Plan (timeline): Optional student graduation requirement to be taken during their senior year.
Key/Responsible Personnel: The instructor of record for any professional core course.
Supporting Attachments: 
Certified Technology Manager Exam link opens in new window (Adobe Acrobat Document)

Measure: Innovation and Design in Technology
Course level; Direct - Student Artifact

Details/Description: Students will propose solutions to real world problems by completing a Major Individual Design Proposal in TADT 4537.
Acceptable Target (optional): At least 90% of the students will demonstrate a higher level (70 % or higher ) of performance on applying technological innovations to assess current emerging technologies. The Technology Transfer outcome will be assessed through Major Individual Design Proposal.
Ideal Target (optional): See the attached proposal requirements and rubric.
Implementation Plan (timeline): This course is offered twice a year.
Key/Responsible Personnel: The instructor of record for TADT 4537.
Supporting Attachments: 

Measure: Quality Assurance
Course level; Direct - Student Artifact

Details/Description: Students will demonstrate different principles, techniques and applications of technologies that are used in the industrial sector by completing a major case study in TADT 4878.
Acceptable Target (optional): At least 90% of the students will demonstrate a higher level (70 % or higher ) of performance on assessing current knowledge for application to quality assurance technologies. The Technology Transfer outcome will be assessed through the major case study.
Ideal Target (optional): See the attached case study requirements and rubric.
Implementation Plan (timeline): This course is offered once a year.
Key/Responsible Personnel: The instructor of record for TADT 4878.
Supporting Attachments: 
FINAL PROJECT – CASE STUDY GUIDELINES.pdf link opens in new window (Adobe Acrobat Document)
FINAL PROJECT – CASE STUDY Rubric.pdf link opens in new window (Adobe Acrobat Document)

Communication
Graduates will demonstrate professional

Measure: CTM Exam / Technology Management Skills
Institution level; Direct - Other
communication skills and the ability to work effectively as a part of a team in a technological environment.

**Details/Description:** Senior level students will take the ATMAE Certified Technology Management (CTM) certification exam. The Professional Core will prepare students for the CTM exam. The Communication outcome will be assessed through the management section of the ATMAE exam.

**Acceptable Target (optional):** At least 70% of the students will achieve a passing score as determined by ATMAE. ATMAE will provide a yearly report of weaknesses and strengths in this area.

**Ideal Target (optional):** The better qualified students are in technological management skills the greater their capabilities are to demonstrate professional communication skills and the ability to work effectively as a part of a team in a technological environment.

**Implementation Plan (timeline):** Optional student graduation requirement to be taken during their senior year.

**Key/Responsible Personnel:** The instructor of record for any professional core course.

**Supporting Attachments:**
- Certified Technology Manager Exam [link opens in new window](Adobe Acrobat Document)

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**Measure:** Graduate Placement Survey

**Other level; Indirect - Survey**

**Details/Description:** Graduate Placement Survey administered to all university graduates by Career Services every 2 years.

**Acceptable Target (optional):** At least 70% of each year's graduates will be employed in related field, or in graduate school, within 2 years.

**Ideal Target (optional):** The successful graduate placement of students will indicate students' abilities to demonstrate professional communication skills in interviewing abilities as developed through the Professional Core.

**Implementation Plan (timeline):** This information is reported every 3 years to the ATMAE.

**Key/Responsible Personnel:** ATMAE Accreditation Coordinator.

**Supporting Attachments:**
- Alumni Survey Summary [link opens in new window](Adobe Acrobat Document)
  Alumni Survey Summary Data 2010

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**Measure:** Project Management

**Course level; Direct - Other**

**Details/Description:** Students will demonstrate the practical understanding of effective project management techniques through a team focused activity. Students will create a written and graphic project schedule by completing a team project in TADT 4897.

**Acceptable Target (optional):** At least 90% of the students will demonstrate a higher level (70% or higher) of performance by demonstrating professional communication skills and the ability to work effectively as a part of a team in a technological environment. The Communication outcome will be assessed through creating and presenting a project schedule.

**Ideal Target (optional):** See the attached project schedule requirements and rubric.

**Implementation Plan (timeline):** This course is offered twice a year.

**Key/Responsible Personnel:** The instructor of record for TADT 4897.

**Supporting Attachments:**
- 4897 Team - Focused Project Scoring Rubric.pdf [link opens in new window](Adobe Acrobat Document)
- TADT 4897 Project Management Team - Focused Project Overview.pdf [link opens in new window](Adobe Acrobat Document)

---

**Measure:** Technical Sales and Service Training

**Course level; Direct - Student Artifact**
Details/Description: Students will develop and present a technical training unit by completing a major presentation in TADT 3885.
Acceptable Target (optional): At least 90% of the students will demonstrate a higher level (70 % or higher ) of performance by developing professional communication skills and the ability to work effectively as a part of a team in a technological environment. The Communication outcome will be assessed through technical training unit presentation.
Ideal Target (optional): See the attached presentation requirements and rubric
Implementation Plan (timeline): This course is offered twice a year.
Key/Responsible Personnel: The instructor of record for TADT 3885.
Supporting Attachments:
- 3885 Lesson Presentation Rubric.pdf (Adobe Acrobat Document)
- 3885 Sales Presentation.pdf (Adobe Acrobat Document)

### 4 Leadership

Graduates will apply principles of leadership, management, and supervision in a variety of technological settings.

**Measure:** CTM Exam / Technology Management Skills
- Institution level; Direct - Other

Details/Description: Senior level students will take the ATMAE Certified Technology Management (CTM) certification exam. The Professional Core will prepare students for the CTM exam. The Leadership outcome will be assessed through the management section of the ATMAE exam.
Acceptable Target (optional): At least 70% of the students will achieve a passing score as determined by ATMAE. ATMAE will provide a yearly report of weaknesses and strengths in this area.
Ideal Target (optional): The better qualified students are in technological management skills the greater their ability to apply principles of leadership, management, and supervision in a variety of technological settings.
Implementation Plan (timeline): Optional student graduation requirement to be taken during their senior year.
Key/Responsible Personnel: The instructor of record for any professional core course.
Supporting Attachments:
- Certified Technology Manager Exam (Adobe Acrobat Document)

**Measure:** Engineering Economic & Cost Analysis
- Course level; Direct - Student Artifact

Details/Description: Students will estimate and analyse the cost of engineering applications and practices by completing a major case study group project in TADT 3267.
Acceptable Target (optional): At least 90% of the students will demonstrate a higher level (70 % or higher ) of performance by applying principles of leadership, management, and supervision. The Leadership outcome will be assessed through a major case study group project.
Ideal Target (optional): See the attached major case study group project requirements and rubric.
Implementation Plan (timeline): This course is offered twice a year.
Key/Responsible Personnel: The instructor of record for TADT 3267.
Supporting Attachments:
- Cast Study Project Guidelines.pdf (Adobe Acrobat Document)
- Cast Study Rubric.pdf (Adobe Acrobat Document)

**Measure:** Facilities Management
- Course level; Direct - Student Artifact
Details/Description: Students will research and present a topic on best practices of facilities management in TADT 4875.

Acceptable Target (optional): At least 90% of the students will demonstrate a higher level (70% or higher) of performance by applying principles of leadership, management, and supervision in a variety of technological settings. The Leadership outcome will be assessed through researching and presenting a topic on best practices of facilities management.

Ideal Target (optional): See the attached presentation requirements and rubric.

Implementation Plan (timeline): This course is offered once a year.

Key/Responsible Personnel: The instructor of record for TADT 4875.

Supporting Attachments:
- 4875 FM_Presentation_Rubric.pdf (Adobe Acrobat Document)

Measure: Project Management
Course level; Direct - Other

Details/Description: Students will demonstrate the practical understanding of effective project management techniques through a team focused activity. Students will create a written and graphic project schedule by completing a team project in TADT 4897.

Acceptable Target (optional): At least 90% of the students will demonstrate a higher level (70% or higher) of performance by applying principles of leadership, management, and supervision in a variety of technological settings. The Leadership outcome will be assessed through creating and presenting a project schedule.

Ideal Target (optional): See the attached project schedule requirements and rubric.

Implementation Plan (timeline): This course is offered twice a year.

Key/Responsible Personnel: The instructor of record for TADT 4897.

Supporting Attachments:
- 4897 Team - Focused Project Scoring Rubric.pdf (Adobe Acrobat Document)
- TADT 4897 Project Management Team - Focused Project Overview.pdf (Adobe Acrobat Document)

5 Ethics and Sustainability in Technology
Graduates will ethically employ global technologies to address social, economic and environmental issues.

Details/Description: Students will explore and apply sustainability and emerging practices in industrial applications through a series of assignments. The ethics and sustainability in technology will be achieved through group research presentation.

Acceptable Target (optional): At least 90% of the students will demonstrate a higher level (70% or higher) of performance on applying sustainability and ethical practices to address real world problems.

Ideal Target (optional): See the attached presentation/research project requirements and rubric.

Implementation Plan (timeline): This course is offered once a year.

Key/Responsible Personnel: The instructor of record for TADT 4385.

Supporting Attachments:
- TADT 4385 SET_Ethics Sust_TaskStream_Artifact.pdf (Adobe Acrobat Document)
Appendix B: Course Notice Correspondence

From: Michael Murray  
Sent: Friday, December 04, 2015 3:10 PM  
To: Timothy Brockman  
Subject: Re: Notice of Course Modification

Okay, thx.

On Dec 4, 2015 3:05 PM, Timothy Brockman <TBrockman@bemidjistate.edu> wrote:

Hi Michael,

TAD is submitting a TADT curriculum revisions. The revisions include a course modification for TADT 4897 Project Management which will affect your Environmental Studies B. S. major with an Environmental Management Emphasis. To summarize the modifications:

1. Number change TADT 4897 to TADT 4893 reflecting it is the third in a sequence for our majors, but not other majors;

2. 4 credits to 3 credits (All TADT, 4-credit courses are changing.);

3. Proposed Course Description, if different: This course is intended to provide the learner with the understanding, tools and techniques necessary to effectively plan, coordinate and manage the combination of people, systems and other resources required to complete a project in alignment with established objectives, standards and deadlines, and;

4. Proposed Prerequisite(s), if different:
   Undergraduate:
   - TADT 1111 Intro to Project Management or (This course has a focus for TADT majors on managing their college experience as a PM project.)
   - TADT 3112 Leadership in a Team Environment (TADT majors)
   - Or consent of instructor. (This would apply to environmental and other students that are electing to take this course.)

Thank you,

Tim Brockman

Dr. Tim Brockman, Associate Professor
Coordinator, Engineering Technology Program
Department of Technology, Art and Design
Bemidji State University

227 Bridgeman Hall                Office: 218-755-4128
1500 Birchmont Drive NE #34        Department Main Office: 218-755-2950
Bemidji, MN 56601-2699            Fax: 218-755-4011

tbrockman@bemidjistate.edu       www.bemidjistate.edu

Mission
Mission Statement: Empower students with the knowledge to Learn, Create and Innovate.

Vision Statement:
Vision Statement: Creating responsible professionals to imagine new worlds of artistic and
technological thought for a sustainable future in a global community.

Tagline: Imagine, Create, Innovate, Lead
Hi Tim, thank you for the information.

Derek

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Hi Derek,

A program modification is being submitted for the B. S. in Engineering Technology. MATH 1470 Pre-Calculus (5 credits) will be added to the curriculum.

Thanks,

Tim Brockman

Dr. Tim Brockman, Associate Professor
Coordinator, Engineering Technology Program
Department of Technology, Art and Design
Bemidji State University

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1500 Birchmont Drive NE #34
Bemidji, MN 56601-2699

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Hi Tim. Thanks for the update. John

J. Truedson

On Dec 4, 2015, at 11:38 AM, Timothy Brockman <tBrockman@bemidjistate.edu> wrote:

Hi John,

A Program modification is being submitted for the B. S. in Engineering Technology. PHYS 1101 General Physics (4 credits) and PHYS 1102 General Physics 2 (4 credits) will be added to the curriculum.

Thanks,

Tim Brockman

Dr. Tim Brockman, Associate Professor
Coordinator, Engineering Technology Program
Department of Technology, Art and Design
Bemidji State University

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1500 Birchmont Drive NE #34  Department Main Office: 218-755-2950
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Tagline: Imagine, Create, Innovate, Lead
From: Sandra Kranz
Sent: Friday, December 04, 2015 11:13 AM
To: Timothy Brockman
Subject: RE: Notice of Course-Used-In-Curriculum

Great!

From: Timothy Brockman
Sent: Friday, December 4, 2015 11:09 AM
To: Sandra Kranz <SKranz@bemidjistate.edu>
Subject: Notice of Course-Used-In-Curriculum

Hi Sandra,

A Program modification is being submitted for the B. S. in Project Management. ACCT 1101 Principles of Accounting I (3 credits) will be added to the curriculum.

Thanks,

Tim Brockman

Dr. Tim Brockman, Associate Professor
Coordinator, Engineering Technology Program
Department of Technology, Art and Design
Bemidji State University

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1500 Birchmont Drive NE #34 Department Main Office: 218-755-2950
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BSU Curriculum Forms

Form 8
Updated: 09.18.15

Signatures

__ Dr. Timothy Brockman 12.14.15 ____________________________________________________________________________
Proposer / Dr. Timothy Brockman / Date

__ Dr. Bonnie Higgins 12.15.15 ____________________________________________________________________________
Dr. Bonnie Higgins, Chair / Technology, Art and Design / Date
Note: "All departmental recommendations [on curriculum] must be reviewed and approved by the department's faculty."--IFO/MnSCU Master Agreement 2009-2011, 20.A.3 (p. 80).

At this point, packet goes to Records Office/Curriculum Coordinator to be logged in to the Curriculum Proposal Progress Grid.

__ Dr. Shawn Strong 12.15.15 ____________________________________________________________________________
Dr. Shawn Strong / College of Business, Technology and Communication/ Date
Note: If proposal is sent back to the Proposer, please notify the Curriculum Coordinator. If approved, packet goes to Academic Affairs Office.