



CREDIT COURSE OUTLINE

I. COVER PAGE

<u>(1) MFGT 21</u>	<u>(2) Blueprint Reading</u>	<u>(3) 2</u>
Number	Title	Units

<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="3">(4) Lecture / Lab Hours:</td> </tr> <tr> <td colspan="3">Course Hours</td> </tr> <tr> <td style="width:15%;"></td> <td style="width:15%;">Weekly Lec hours:</td> <td style="width:15%; text-align: center;">2.00</td> </tr> <tr> <td></td> <td>Weekly Lab hours:</td> <td style="text-align: center;">0.50</td> </tr> <tr> <td></td> <td>Total Contact hours:</td> <td style="text-align: center;">45.00</td> </tr> <tr> <td colspan="3">Lec will generate __ hour(s) outside work.</td> </tr> <tr> <td colspan="3">Lab will generate __ hour(s) outside work.</td> </tr> <tr> <td colspan="3">(5) Grading Basis:</td> </tr> <tr> <td>Grading Scale Only</td> <td></td> <td></td> </tr> <tr> <td>Pass/No Pass option</td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>Pass/No Pass only</td> <td></td> <td></td> </tr> <tr> <td colspan="3">(6) Advisories:</td> </tr> <tr> <td colspan="3">• Eligibility for English 126 and Mathematics 103</td> </tr> <tr> <td colspan="3">(7) Pre-requisites (requires C grade or better):</td> </tr> <tr> <td colspan="3">• Industrial Technology 205</td> </tr> <tr> <td colspan="3">Corequisites:</td> </tr> <tr> <td colspan="3">•</td> </tr> </table>	(4) Lecture / Lab Hours:			Course Hours				Weekly Lec hours:	2.00		Weekly Lab hours:	0.50		Total Contact hours:	45.00	Lec will generate __ hour(s) outside work.			Lab will generate __ hour(s) outside work.			(5) Grading Basis:			Grading Scale Only			Pass/No Pass option	X		Pass/No Pass only			(6) Advisories:			• Eligibility for English 126 and Mathematics 103			(7) Pre-requisites (requires C grade or better):			• Industrial Technology 205			Corequisites:			•			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="3">(8) Classification:</td> </tr> <tr> <td style="width:15%;"></td> <td style="width:15%;"></td> <td style="width:15%;"></td> </tr> <tr> <td></td> <td>Degree applicable:</td> <td style="text-align: center;">X</td> </tr> <tr> <td></td> <td>Non-degree applicable:</td> <td></td> </tr> <tr> <td></td> <td>Basic skills:</td> <td></td> </tr> <tr> <td>(9)RC</td> <td>Fulfills AS/AA degree requirement: (area)</td> <td></td> </tr> <tr> <td></td> <td>General education category:</td> <td></td> </tr> <tr> <td></td> <td>Major:</td> <td>Machine Tool Maintenance Mechanic Welding Technology</td> </tr> <tr> <td></td> <td>Certificate of:</td> <td>Machinist Maintenance Mechanic Manufacturing 1 Welder</td> </tr> <tr> <td></td> <td>Certificate in:</td> <td></td> </tr> <tr> <td>(10)CSU</td> <td>Baccalaureate:</td> <td style="text-align: center;">X</td> </tr> <tr> <td>(11)Repeatable: (A course may be repeated three times)</td> <td></td> <td style="text-align: center;">0</td> </tr> <tr> <td>(12)C-ID:</td> <td></td> <td></td> </tr> <tr> <td>Proposed Start Date:</td> <td></td> <td style="text-align: center;">Fall 2012</td> </tr> </table>	(8) Classification:							Degree applicable:	X		Non-degree applicable:			Basic skills:		(9)RC	Fulfills AS/AA degree requirement: (area)			General education category:			Major:	Machine Tool Maintenance Mechanic Welding Technology		Certificate of:	Machinist Maintenance Mechanic Manufacturing 1 Welder		Certificate in:		(10)CSU	Baccalaureate:	X	(11)Repeatable: (A course may be repeated three times)		0	(12)C-ID:			Proposed Start Date:		Fall 2012
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(12) Catalog Description: Techniques of graphic interpretation, technical sketching, reading pictorial drawings, dimensioning.																																																																																														

II. COURSE OUTCOMES:

(Specify the learning skills the student demonstrates through completing the course and link critical thinking skills to specific course content and objectives.)

Upon completion of this course, students will be able to:

- I. Interpret blueprints using common manufacturing terms and conventions.
- II. Identify different blueprint views and relate them to real world parts.

III. COURSE OBJECTIVES:

(Specify major objectives in terms of the observable knowledge and/or skills to be attained.)

In the process of completing this course, students will:

- I. Determine the size, shape, type of material and finish requirements from standard manufacturing drawings.
- II. Make sketches and working drawings with enough details and dimensions to enable them to manufacture the part from their drawings.
- III. Communicate part specifications using standard blueprint terminology.

IV. COURSE OUTLINE:

Lecture Content:

- A. Lines
 1. Alphabet of lines
 2. Hidden
 3. Center
 4. Extension
 5. Projection
- B. Views
 1. One
 2. Two

- 3. Three
- 4. Auxiliary
- C. Dimensioning
 - 1. Size and location
 - 2. Arcs and angles
 - 3. Thread dimensioning and tolerances
- D. Welding drawings
 - 1. Symbols
 - 2. Representations
 - 3. Dimensioning
- E. CNC Drawings
 - 1. Datums
 - 2. Ordinates
 - 3. Dimensioning
- F. Sketching
 - 1. Lines
 - 2. Basic forms
 - 3. Pictorial drawing
- G. Sketch outs
 - 1. Parallel development
 - 2. Radial development
- H. Working drawings
 - 1. Shop drawings
 - 2. Notes

Lab Content:

- A. Creating lines
 - 1. Alphabet of lines
 - 2. Drawing techniques
- B. Views
 - 1. Layout on sheet
 - 2. View types
 - 3. Inter-relation of views
- C. Dimensioning
 - 1. Leader lines
 - 2. Text
 - 3. Callouts
- D. Sketching
 - 1. Orthographic
 - 2. Parallel
 - 3. Radial

V. APPROPRIATE READINGS

Reading assignments may include but are not limited to the following:

- I. Sample Text Title:
 - 1. Recommended - Olivo, T, P *Basic Blueprint Reading and Sketching* , Thompson Delmar Learning Systems , 2011,
 - 2. Recommended - Olivo, T,P *Sample lab Workbook: Blueprint Reading and Sketching* , Thompson Delmar Learning Systems , 2011,

II. Other Readings

- Global or international materials or concepts are appropriately included in this course
- Multicultural materials and concepts are appropriately included in this course

If either line is checked, write a paragraph indicating specifically how global/international and/or multicultural materials and concepts relate to content outline and/or readings.

VI. METHODS TO MEASURE STUDENT ACHIEVEMENT AND DETERMINE GRADES:

Students in this course will be graded in at least one of the following four categories. Please check those appropriate. A degree applicable course must have a minimum of one response in category A, B, or C.

A. Writing	
Check either 1 or 2 below	
<input type="checkbox"/>	1. Substantial writing assignments are required. Check the appropriate boxes below and provide a written description in the space provided.
X	2. Substantial writing assignments are NOT required. If this box is checked leave this section blank. For degree applicable courses you must complete category B and/or C.
<input type="checkbox"/>	a) essay exam(s)
<input type="checkbox"/>	d) written homework

<input type="checkbox"/>	b) term or other paper(s)	<input type="checkbox"/>	e) reading reports
<input type="checkbox"/>	c) laboratory report(s)	<input type="checkbox"/>	f) other (specify)

Required assignments may include but are not limited to the following:

B. Problem Solving Computational or non-computational problem-solving demonstrations, including:			
X	a) exam(s)	<input type="checkbox"/>	d) laboratory reports
X	b) quizzes	<input type="checkbox"/>	e) field work
X	c) homework problems	<input type="checkbox"/>	f) other (specify):

Required assignments may include but are not limited to the following:

Sample question:

Interpret manufacturing symbols on blueprints

C. Skill demonstrations, including:			
X	a) class performance(s)	X	c) performance exams(s)
<input type="checkbox"/>	b) field work	<input type="checkbox"/>	d) other (specify)

Required assignments may include but are not limited to the following:

1. Weekly drawing assignments.
2. Drawing ability tests.

D. Objective examinations including:			
X	a) multiple choice	X	d) completion
X	b) true/false	<input type="checkbox"/>	e) other (specify):
X	c) matching items	<input type="checkbox"/>	

COURSE GRADE DETERMINATION:

Description/explanation: Based on the categories checked in A-D, it is the recommendation of the department that the instructor's grading methods fall within the following departmental guidelines; however, the final method of grading is still at the discretion of the individual instructor. The instructor's syllabus must reflect the criteria by which the student's grade has been determined. (A minimum of five (5) grades must be recorded on the final roster.)

If several methods to measure student achievement are used, indicate here the approximate weight or percentage each has in determining student final grades.

Problem Solving 20 - 40% Skill Demonstration 40 - 60% Objective Examination 20 - 40% Required Assignments: Home Work 25% Lab work 25% Quizzes 25% Final 25%

VII. EDUCATIONAL MATERIALS

For degree applicable courses, the adopted texts, as listed in the college bookstore, or instructor-prepared materials have been certified to contain college-level materials.

Validation Language Level (check where applicable):

- Textbook
- Reference materials
- Instructor-prepared materials
- Audio-visual materials

College-Level Criteria Met	
YES	NO
<u> X </u>	<u> </u>
<u> X </u>	<u> </u>
<u> X </u>	<u> </u>
<u> X </u>	<u> </u>

Indicate Method of evaluation:

- Used readability formulae (grade level 10 or higher)
- Text is used in a college-level course X
- Used grading provided by publisher
- Other: (please explain; relate to Skills Levels) -

Computation Level (Eligible for MATH 101 level or higher where applicable) X

Content

- Breadth of ideas covered clearly meets college-level learning objectives of this course X
- Presentation of content and/or exercises/projects:
- Requires a variety of problem-solving strategies including inductive and deductive reasoning. X
- Requires independent thought and study X
- Applies transferring knowledge and skills appropriately and efficiently to new situations or problems. X

List of Reading/Educational Materials

Recommended - Olivo, T, P *Basic Blueprint Reading and Sketching*, Thompson Delmar Learning Systems, 2011,

Recommended - Olivo, T,P *Sample lab Workbook: Blueprint Reading and Sketching*, Thompson Delmar Learning Systems, 2011,

Comments:

- This course requires special or additional library materials (list attached).
Basic Blueprint Reading and Sketching by Thomas P Olivo Thompson Delmar Learning Systems © 2005
- Blueprint Reading and Sketching , Thompson Delmar Learning Systems 2005
- This course requires special facilities:

Attached Files:

- [Manufacturing Pathways](#)
- [MFGT Prereq Adv Justification](#)

BASIC SKILLS ADVISORIES PAGE The skills listed are those needed for eligibility for English 125, 126, and Math 201. These skills are listed as the outcomes from English 252, 262, and Math 250. In the right hand column, list at least three major basic skills needed at the beginning of the target course and check off the corresponding basic skills listed at the left.

Check the appropriate spaces.

- Eligibility for Math 201 is advisory for the target course.
- Eligibility for English 126 is advisory for the target course.
- Eligibility for English 125 is advisory for the target course.

If the reviewers determine that an advisory or advisories in Basic Skills are all that are necessary for success in the target course, stop here, provide the required signatures, and forward this form to the department chair, the appropriate associate dean, and the curriculum committee.

REQUISITES

Prerequisite -- IT 205 FOUNDATION SKILLS IN INDUSTRIAL TECHNOLOGY

- | | |
|--|---|
| <ul style="list-style-type: none"> • Recognize the various types of tools, materials, and processes as they relate to manufacturing technology. | <ul style="list-style-type: none"> • Determine the size, shape, type of material and finish requirements from standard manufacturing drawings. • Make sketches and working drawings with enough details and dimensions to enable them to manufacture the part from their drawings. • Communicate part specifications using standard blueprint terminology. |
|--|---|

ESTABLISHING PREREQUISITES OR COREQUISITES

Every prerequisite or corequisite requires content review plus justification of at least one of the seven kinds below. Prerequisite courses in communication and math outside of their disciplines require justification through statistical evidence. Kinds of justification that may establish a prerequisite are listed below.

Check one of the following that apply. Documentation may be attached.

- Significant statistical evidence indicates that the absence of the prerequisite course is related to unsatisfactory performance in the target course.
Justification: Indicate how this is so.
- The health or safety of the students in this course requires the prerequisite.
Justification: Indicate how this is so.
- The prerequisite course is part of a sequence of courses within or across a discipline.
- The prerequisite is required in order for the course to be accepted for transfer to the UC or CSU systems.
Justification: Indicate how this is so.
- The prerequisite/corequisite is required by law or government regulations.
Explain or cite regulation numbers:
- The safety or equipment operation skills learned in the prerequisite course are required for the successful or safe completion of this course.
Justification: Indicate how this is so.
- The safety or equipment operation skills learned in the prerequisite course are required for the successful or safe completion of this course.
Justification: Indicate how this is so.
- Three CSU/UC campuses require an equivalent prerequisite or corequisite for a course equivalent to the target course:

Justification:

JUSTIFICATION OF LIMITATION ON ENROLLMENT

Enrollment in courses or blocks of courses may be limited based on performance, honors, or other performance based criteria. Be mindful of the disproportionate impact the limitation will have on specific groups of students. It is important to determine if the limitation will disproportionately keep under-represented students from enrolling in the course or block of courses.

Describe the reasons for limiting the enrollment.

Course Designator: MFGT 21
Course Title(s): Blueprint Reading
Rationale for Limiting Enrollment: 0