

Intermediate Mathcad

Course Design

2001-2002

Course Information

Organization:	Eastern Arizona College
Division:	Mathematics
Course Number:	MAT 110AH
Title:	Intermediate Mathcad
Credits:	0.5
Developed by:	William S. Weber
Lecture/Lab Ratio:	0.5 lecture/0 lab
Transfer Status:	Pending evaluation
Extended Registration	
Class:	Yes
CIP Code:	11.0101
Assessment Mode:	Pre/Post Test 10 questions/10 points
Semester Taught:	Upon Request Only
Gen. Ed. Area:	None
Separate Lab:	No
Awareness Course:	No
Intensive Writing	
Course:	No
Prerequisites:	1. MAT 154 or higher with a grade of "C" or higher, or concurrent enrollment in MAT 154, or appropriate EAC Placement Test Score of 81 or higher or equivalent.
Description:	Students will become familiar with intermediate level functions of Mathcad, a calculation software package. Identical to CMP 110AH.
Textbooks:	None.
Supplies:	None

Competencies and Performance Standards

1. Define functions and variables on a Mathcad worksheet			
<i>Domain--Cognitive</i>	<i>Level--Application</i>	<i>Importance--Important</i>	<i>Difficulty--Low</i>
<p>Criteria--Criteria - Performance will be satisfactory when:</p> <ul style="list-style-type: none"> • learner understands the order in which calculations are performed on a Mathcad worksheet. • learner understands the difference between local and global definitions on a Mathcad worksheet. • learner can define and use functions on a Mathcad worksheet. • learner can define and use range variables on a Mathcad worksheet. • learner can input data tables on a Mathcad worksheet. • learner can define and use variables that represent the data contained in the individual columns of a data table. 	<p>Conditions-- Competence will be demonstrated:</p> <ul style="list-style-type: none"> • during class activities • on the Pre/Post test • on the class project 	<p>Learning Objectives:</p> <ol style="list-style-type: none"> Understand the order in which calculations are performed on a Mathcad worksheet. Understand the difference between local and global definitions on a Mathcad worksheet. Define and use functions on a Mathcad worksheet. Define and use range variables on a Mathcad worksheet. Input data tables on a Mathcad worksheet. Define and use variables that represent the data contained in the individual columns of a data table. 	
2. Include units in a numerical calculation.			
<i>Domain--Cognitive</i>	<i>Level--Application</i>	<i>Importance--Important</i>	<i>Difficulty--Medium</i>
<p>Criteria--Criteria - Performance will be satisfactory when:</p> <ul style="list-style-type: none"> • learner can incorporate units in a numerical calculation. • learner can find the standard Mathcad abbreviation for various units. • learner can change the default system of units on a Mathcad worksheet. • learner can define and use units for which Mathcad does not have a standard abbreviation. • learner can change the units of a numerical result. 	<p>Conditions-- Competence will be demonstrated:</p> <ul style="list-style-type: none"> • during class activities • on the Pre/Post test • on the class project 	<p>Learning Objectives:</p> <ol style="list-style-type: none"> Incorporate units in a numerical calculation. Find the standard Mathcad abbreviation for various units. Change the default system of units on a Mathcad worksheet. Define and use units for which Mathcad does not have a standard abbreviation. Change the units of a numerical result. 	

3. Change the format of numerical results.			
<i>Domain-- Cognitive</i>	<i>Level-- Application</i>	<i>Importance-- Important</i>	<i>Difficulty-- High</i>
Criteria-- Criteria - Performance will be satisfactory when: <ul style="list-style-type: none"> • learner understands the various options available on the Format Results dialog box. • learner can change the format of an individual result on a Mathcad worksheet. • learner can change the default format for all the results on a Mathcad worksheet. 	Conditions-- Competence will be demonstrated: <ul style="list-style-type: none"> • during class activities • on the Pre/Post test • on the class project 	Learning Objectives: <ol style="list-style-type: none"> Understand the various options available on the Format Results dialog box. Change the format of an individual result on a Mathcad worksheet. Change the default format for all the results on a Mathcad worksheet. 	
4. Create x-y plots of functions and data.			
<i>Domain--</i>	<i>Level--</i>	<i>Importance--</i>	<i>Difficulty--</i>
Criteria-- Criteria - Performance will be satisfactory when: <ul style="list-style-type: none"> • learner can create an x-y plot of a function. • learner can create an x-y plot of data from a data table. • learner understands and can apply the various options available on the Format Graph dialog box. 	Conditions-- Competence will be demonstrated: <ul style="list-style-type: none"> • during class activities • on the Pre/Post test 	Learning Objectives: <ol style="list-style-type: none"> Create an x-y plot of a function. Create an x-y plot of data from a data table. Understand and apply the various options available on the Format Graph dialog box. 	

Types of Instruction

- Lecture
- Computer Lab

Grading Policy

Evaluation Methods: Each student must specify either Pass/Fail or Traditional grading.

Grading Scale:

Grade	Requirement
A	90%-100%
B	80%-89%
C	70%-79%
D	60%-69%
F	Below 60%
P/F	P above 70%, F below 70%

Learning Plans

Learning Plan 1-- Intermediate Mathcad

Overview:

Define functions and variables on a Mathcad worksheet

Include units in a numerical calculation.

Change the format of numerical results.

Create x-y plots of functions and data.

Learning Activities:

- _____ 1. listen to a lecture and take notes
- _____ 2. participate in a discussion
- _____ 3. participate in class activities
- _____ 4. demonstrate a procedure for others
- _____ 5. work on assigned project individually

Performance

Assessment Activities:

- _____ 1. Mathcad project
- _____ 2. Pre/Post test