Intermediate Mathcad

Course Design

2001-2002

Course Information

Organization:	Eastern Arizona College
Division:	Mathematics
Course Number:	CMP 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 MAT 110AH.
Textbooks:	None.
Supplies:	None

Competencies and Performance Standards

1. Define functions and variables on a Mathcad worksheet

Domain--*Cognitive* ***Level***--*Application* ***Importance***--*Important* ***Difficulty***--*Low*

Criteria--Criteria - Performance will be satisfactory when:

- 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.

Conditions-- Competence will be demonstrated:

- during class activities
- on the Pre/Post test
- on the class project

Learning Objectives:

a. Understand the order in which calculations are performed on a Mathcad worksheet.
b. Understand the difference between local and global definitions on a Mathcad worksheet.
c. Define and use functions on a Mathcad worksheet.
d. Define and use range variables on a Mathcad worksheet.
e. Input data tables on a Mathcad worksheet.
f. Define and use variables that represent the data contained in the individual columns of a data table.

2. Include units in a numerical calculation.

Domain--*Cognitive* ***Level***--*Application* ***Importance***--*Important* ***Difficulty***--*Medium*

Criteria--Criteria - Performance will be satisfactory when:

- 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.

Conditions-- Competence will be demonstrated:

- during class activities
- on the Pre/Post test
- on the class project

Learning Objectives:

a. Incorporate units in a numerical calculation.
b. Find the standard Mathcad abbreviation for various units.
c. Change the default system of units on a Mathcad worksheet.
d. Define and use units for which Mathcad does not have a standard abbreviation.
e. Change the units of a numerical result.

3. Change the format of numerical results.		
***Domain**--Cognitive* ***Level**--Application* ***Importance**--Important* ***Difficulty**--High*		
Criteria--Criteria - Performance will be satisfactory when: • 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: • during class activities • on the Pre/Post test • on the class project	**Learning Objectives:** a. Understand the various options available on the Format Results dialog box. b. Change the format of an individual result on a Mathcad worksheet. c. Change the default format for all the results on a Mathcad worksheet.
4. Create x-y plots of functions and data.		
***Domain**--* ***Level**--* ***Importance**--* ***Difficulty**--*		
Criteria--Criteria - Performance will be satisfactory when: • 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: • during class activities • on the Pre/Post test	**Learning Objectives:** a. Create an x-y plot of a function. b. Create an x-y plot of data from a data table. c. 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