

COURSE IMPLEMENTATION DATE:	September 1999
COURSE REVISED IMPLEMENTATION DATE:	September 2001
COURSE TO BE REVIEWED:	September 2005
(Four years after implementation date)	(MONTH YEAR format)

OFFICIAL COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.

Shaded headings are subject to change at the discretion of the department and the material will vary - see course syllabus available from instructor

FACULTY/DEPARTMENT:	MATHEMATICS AND STATISTICS	
MATH 255		3
COURSE NAME/NUMBER	FORMER COURSE NUMBER	UCFV CREDITS
ORDINARY DIFFERENTIAL EQUATIONS		
COURSE DESCRIPTIVE TITLE		

CALENDAR DESCRIPTION:

Most mathematical models of a system, whether from engineering, biology, physics, sociology, geography, psychology or economics, are in the form of differential equations.

This course examines some methods of solving certain types of differential equations. Applications are stressed. Topics include first- and second-order linear differential equations, linear systems, non-linear equations, series solutions, and Laplace transform methods.

PREREQUISITES: **MATH 112; or MATH 114 with at least a C+; MATH 152 unless currently enrolled in MATH 221 or PHYS 221**

COREQUISITES: **PRE-OR COREQUISITES: MATH 211; MATH 221 or PHYS 221 unless MATH 152 already completed.**

SYNONYMOUS COURSE(S)	SERVICE COURSE TO:
(a) Replaces: MATH 310 <i>(Course #)</i>	<i>(Department/Program)</i>
(b) Cannot take: _____ for further credit. <i>(Course #)</i>	<i>(Department/Program)</i>

TOTAL HOURS PER TERM:	60	TRAINING DAY-BASED INSTRUCTION
STRUCTURE OF HOURS:		LENGTH OF COURSE: _____
Lectures:	60	HOURS PER DAY: _____
Seminar:	Hrs	
Laboratory:	Hrs	
Field Experience:	Hrs	
Student Directed Learning:	Hrs	
Other (Specify):	Hrs	

MAXIMUM ENROLLMENT:	35
EXPECTED FREQUENCY OF COURSE OFFERINGS:	
WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only)	<input checked="checked" type="checkbox"/> Yes <input type="checkbox"/> No
WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department)	<input type="checkbox"/> Yes <input type="checkbox"/> No
TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE:	<input type="checkbox"/> Yes <input type="checkbox"/> No

AUTHORIZATION SIGNATURES:

Course Designer(s): _____	Chairperson: _____ <i>(Curriculum Committee)</i>
Department Head: _____ S. Milner	Dean: _____ K. Wayne Welsh
PAC Approval in Principle Date: _____	PAC Final Approval Date: December 13, 2000

COURSE NAME/NUMBER**LEARNING OBJECTIVES / GOALS / OUTCOMES / LEARNING OUTCOMES:**

This course is designed to introduce students to basic techniques and applications of ordinary differential equations. Students will use graphing calculators and computer algebra software to solve realistic problems. The course sequence will be chosen to facilitate the concurrent teaching of Physics 221.

METHODS:

Lectures and computer labs, with considerable use of graphing calculators and mathematical software such as Maple.

PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

Credit can be awarded for this course through PLAR (Please check :) Yes No

METHODS OF OBTAINING PLAR:**TEXTBOOKS, REFERENCES, MATERIALS:**

[Textbook selection varies by instructor. An example of texts for this course might be:]

Boyce & DiPrima

SUPPLIES / MATERIALS:**STUDENT EVALUATION:**

[An example of student evaluation for this course might be:]

This will vary somewhat with the instructor, but will typically be as follows:

Assignments and/or projects	20 – 25%
In-class tests	35 – 40%
Final examination	40%

COURSE CONTENT:

[Course content varies by instructor. An example of course content might be:]

1. First-order linear equations: includes separable variables, exact equations, integrating factors (1 week)
2. Second-order linear equations: includes review of complex numbers and Euler's identity, the D-operator, reduction of the order of the DE, variation of parameters (3 weeks)
3. Linear systems: includes sinusoidal forcing terms (2 weeks)
4. Non-linear equations and numerical methods (2 weeks)
5. Series solutions and recurrence relations (1.5 weeks)
6. LaPlace transforms (2 weeks)

