

## Course Info

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**RIO SALADO COLLEGE**

A MARICOPA COMMUNITY COLLEGE

## Instructor Information

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**Name:** Steven B. Felling B.S.E.E., M.Ed.

**Contact Information:**

Email: [sfelling@tempeunion.org](mailto:sfelling@tempeunion.org)

Phone: 480-706-7900

**Location:** C-114

**Office Hours:** 3:30-4:00pm

## Course Competencies

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### Official Course Description

Introduces differential equations, theoretical and practical solution techniques with applications. Problem-solving using MATLAB.

### Official Course Prerequisites

Prerequisites: A grade of C or better in MAT230 or MAT231 or permission of Department/Division Chair.

### Official Course Competencies

1. Solve analytically and numerically ordinary differential equations, primarily of first or second order, using exact, implicit, or discrete approximation solution types. (I, II, III)

2. Solve analytically and numerically systems of ordinary linear differential equations using matrix methods and Laplace Transforms or differential operator methods. (III, IV)
3. Solve application problems using differential equations. (I, II, III, IV)
4. Linearize non-linear systems and describe the long-term behavior of solutions. (IV)
5. Read and interpret quantitative information when presented numerically, analytically or graphically. (I, II, III, IV)
6. Compare alternate solution strategies, including technology. (I, II, III, IV)
7. Justify and interpret solutions to application problems. (I, II, III, IV)
8. Communicate process and results in written and verbal formats. (I, II, III, IV)

## Course Materials

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Please select the type of material that this course will utilize.

**APPROVED MATERIALS** – This course will utilize Approved materials, like textbooks, 3rd party applications, etc.

**OTHER PRIMARY MATERIALS** - This course will utilize Other primary materials that has an open use license or considered fair use, which include OER materials, online resources, etc.

**BOTH** - This course will utilize Approved materials and other primary materials.

## Required Course Materials

### Title

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A first Course in Differential Equations with Modeling Applicatio

GNU Octave

Graphing Calculator TI-83 or TI-84

## Standards and Expectations

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This dual enrollment course follows a college-level curriculum. High school policies may differ from the policies that apply to dual credit.

## Time Requirement

You will need to dedicate significant time to this college course. For each credit hour, plan to spend at least two hours a week on homework in addition to class presentation time.

## Course Calendar

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## Weeks

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1-3	Solving First Order Differential Equations
4	Applications of First Order Differential Equations
5-7	Solving higher Order Differential Equations
8	Applications of higher Order Differential Equations
9-11	Solving Differential Equations using Laplace transforms
12-14	Solving systems of Differential Equations
14-17	Solving Differential Equations using MATLAB
18	Review for Final/Final

## Grading Standards

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### Grade Percentage

A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	Below 60%

## Attendance Standards

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Regular attendance is important. Please keep absences to a minimum. Please attend an alternate class, if possible.

***Be prepared to take missed tests/quizzes immediately upon your return to class unless you have made prior arrangements with the instructor.***

## Late Policy

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All assigned work must be completed by designated due dates as stated in chapter assignment calendar.

***All tests will be taken as scheduled unless PRIOR arrangements have been made (contact can be made in person or via email).***

## Equipment Use Policy

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You may be assigned a computer for classroom use. You are to only use the computer in the designated websites. You are not to add or make any changes to the computer. Failure to abide by these policies will cause you to lose your computer privileges.

## College Policies

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### Extra Credit Policy:

There are no extra-credit assignments for this class. The scheduled assignments and exams are sufficient to test understanding of the materials presented in the course.

### Academic Misconduct:

Academic Misconduct includes cheating, conspiring to cheat, soliciting to cheat, attempting to cheat, plagiarism, fabrication on an assignment, or other forms of dishonest presentation.

Posting assessments on an unauthorized web site, soliciting assessment answers and the unauthorized acquisition of assessments, assessment answers, or other academic material is cheating.

Plagiarism includes, but is not limited to, the use of paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling or sharing of term papers or other academic materials. Information gathered from the Internet and not properly identified is also considered plagiarism.

We expect every student to produce his/her original, independent work. Any student whose work indicates a violation of the MCCCDC Academic Misconduct Policy (including cheating and plagiarism) can expect sanctions as specified in the college catalog (2.3.11) and online at <https://district.maricopa.edu/regulations/admin-regs/section-2/2-3#11>

Rio Salado College uses software that uncovers plagiarism from student to student and other data sources on the Internet. If a student is found to have plagiarized content, grade consequences will be applied in accordance with departmental policies.

## Civility Policy:

The faculty of Rio Salado place a high value on the importance of general ethical standards of academic behavior and expect that communication between students and instructors or among students shall maintain the level of formality and mutual respect appropriate to any college teaching/learning situation. Language or behavior that is rude, abusive, profane, disruptive, or threatening will not be tolerated. Activity of this type is Academic Misconduct as defined in MCCCDC Policy AR 2.3.11. Student engaging in such behavior will be removed from the course with a failing grade. Additional sanctions may be applied pursuant to AR 2.3.11.

## Refund Policy:

Refunds are not automatic. Students who drop courses within the refund period are eligible for a reimbursement of appropriate tuition. Deadlines and details are available online at <http://www.riosalado.edu/cashier/Pages/refund.aspx>.

## Classroom Accommodations for Students with Disabilities

In accordance with the Americans with Disabilities Act, the Maricopa County Community College District (MCCCDC) and its associated colleges are committed to providing equitable access to learning opportunities to students with documented disabilities (e.g. mental health, attentional, learning, chronic health, sensory, or physical).

Visit <https://district.maricopa.edu/mandatory-drs-title-ix-syllabus-statements> for more information.

## Addressing Incidents of Sexual Harassment/Assault, Dating/Domestic Violence, and Stalking

In accordance with Title IX of the Education Amendments of 1972, MCCCDC prohibits unlawful sex discrimination against any participant in its education programs or activities. The District also prohibits sexual harassment—including sexual violence—committed by or against students, District employees, and visitors to campus. As outlined in District policy, sexual harassment, dating violence, domestic violence, sexual assault, and stalking are considered forms of "Sexual Misconduct" prohibited by District policy. Visit <https://district.maricopa.edu/mandatory-drs-title-ix-syllabus-statements> for more information.

## Tuition Assistance

Tuition Assistance is available to students enrolled in a Rio Salado College dual enrollment courses who demonstrate financial need. Details are available online at <http://www.riosalado.edu/dual/>

## Student Responsibility

The student is responsible for the information outlined in the syllabus. The student is also responsible for knowing the Rio Salado College policies in the college catalog and the student handbook available online at <http://www.riosalado.edu/dual/>

## Disclaimer

Course content and syllabus may vary from the course calendar listed above in order to meet the needs of the particular group in this course section.