COURSE DESCRIPTION
Topics in this course include methods of solving ordinary differential equations, linear equations and systems of linear equations. The emphasis is on first and second order differential equations and their applications. The methods include operators, undetermined coefficients, variation of parameters, Laplace transforms, and series solutions. Course placement standards are available at Mathematics Course Performance Standards and in the math labs.

PREREQUISITES
MAC 2312, Calculus II with a grade of "C" or better or equivalent. Student enrollment in any mathematics course is contingent upon approval of the mathematics department. This means that students who have been misplaced may have their schedule changed.

TEXT
A First Course in Differential Equations, 11th Edition, by Dennis G. Zill

MATERIALS
A graphing calculator is required; a TI-83, TI-83 Plus, TI-84 Plus, or TI-86 is strongly recommended. Calculators can be used during exams except for those calculators with symbolic manipulation capabilities (e.g., TI-89, TI-92, TI-nspire)

ADDITIONAL MATERIALS
There is a solution manual available in the bookstore. The manual contains solutions to selected problems from the exercise sets in the text. Tutoring is available in the Academic Resource Center (ARC).

TESTS
There will be three tests and a required comprehensive final exam. NO MAKE-UP TESTS, EXAMS, or QUIZZES WILL BE GIVEN.

GRADING
Your grade in the course is determined by the percentage of points earned during the semester. A grade of 60% or higher must be earned on the final exam in order to earn a grade of A, B, or C.

<table>
<thead>
<tr>
<th>POINTS</th>
<th>EXAMS</th>
<th>300</th>
<th>90 - 100%</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Study Guides</td>
<td>100</td>
<td>80 - 89%</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Final Exam (cumulative)</td>
<td>200</td>
<td>70 - 79%</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>600</td>
<td>60 - 69%</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 - 59%</td>
<td>F</td>
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LATE WORK
No late work may be turned in for credit unless permission given by the instructor.

GORDON RULE
This course meets the Florida State Board of Education Rule Number 6A-10.30. For the purpose of this rule, a grade of "C" or better shall be considered successful completion.

ATTENDANCE
All late arrivals, early departures and absences must be discussed and cleared with the instructor. More than 3 hours of absences or excessive tardiness may result in your withdrawal from the course.

NO-SHOW POLICY
Students who do not drop a course that they have never attended will be reported as a No-Show by the course instructor during the No-Show period. This drop may have financial aid implications for the student who is dropped.

ELECTRONICS POLICY
Cell phone etiquette must be observed: In-class usage is restricted to emergency situations – this includes texting. Cell phones are not to be used during tests, not even as a calculator. Inform the instructor before class of any extenuating circumstances. The use of mobile devices (cell phones, beepers, tablets and other smart devices) in the classroom is determined by the faculty member’s mobile device use guidelines for that particular class. Each faculty member determines the acceptable use of mobile devices in the classroom, from requiring the device be turned off to

Course Performance: [http://www.scf.edu/Academics/Mathematics/MathematicsCoursePerformanceStandards.asp](http://www.scf.edu/Academics/Mathematics/MathematicsCoursePerformanceStandards.asp)
ARC: [http://www.scf.edu/StudentServices/AcademicResourceCenter/default.asp](http://www.scf.edu/StudentServices/AcademicResourceCenter/default.asp)
Final Exam Schedule: [http://www.scf.edu/Academics/FinalExamSchedule.asp](http://www.scf.edu/Academics/FinalExamSchedule.asp)
allowing the use of mobile devices in classroom projects. Adhere to the expectations communicated by the faculty member for that course.

**MISCONDUCT**

Students are required to adhere to statements regarding student misconduct outlined in official State College of Florida publications including the Catalog and the Student Handbook. The minimal consequence of failure to adhere to these statements is withdrawal from the course.

**TECHNICAL SUPPORT INFORMATION**

For technical issues with Canvas, contact Canvas technical support by clicking the question mark icon in the lower left hand corner of the Canvas window and choosing “Report a Problem” or “Chat with Canvas Support.” Also, Canvas support can be contacted via phone at 844-920-2764.

For technical issues with My SCF, contact SCF technical support by calling 941.752.5357 or emailing helprequest@scf.edu.

For technical issues with the publisher site, contact their technical support by

- MML 1.800.677.6337
- Connect 1.949.390.2095
- WebAssign 1.800.955.8275

**PROHIBITING RECORDING DEVICE**

The use of recording devices during class is prohibited, except when the use of such devices is approved as an accommodation through the college Disability Resource Center. In such cases the student must provide a copy of their Memo of Accommodation and meet with the instructor to discuss how best to provide the approved accommodation.

**E-MAIL**

Students are required to communicate with their instructor using their official SCF email address.

**WITHDRAWAL**

In accordance with the State College of Florida policy as stated in the college catalog, a student may withdraw from any or all courses without the academic penalty of a "WF" grade by the withdrawal deadline as listed in the academic calendar, Catalog or on the SCF website. A student in an accelerated or short-term course may withdraw without the academic penalty of a "WF" grade any time before the withdrawal deadline specific for the course. When a "WF" is entered, it is recorded in the student's permanent record and calculated as an "F" in the grade point average. SCF encourages the student to discuss a withdrawal with the instructor prior to withdrawing. A student who withdraws from any or all courses can withdraw online. Students should consult with the Financial Aid Services office prior to any course withdrawal.

Course withdrawals, after the deadline for the term or accelerated or short term course as published in the academic calendar, will result in a grade of "WF" which is computed in the term and cumulative GPA. Appeal request forms, accompanied by an explanation and documentation detailing major extenuating and documented circumstances, should be directed to the appropriate campus Dean, who has the final approval/dis-approval authority. If the appeal is granted, the "WF" grade would be changed to a "W" without GPA consequences. Forms can be obtained from the respective campus advising centers.

Effective Fall 1997, the state mandates a student will be permitted a maximum of three attempts per course. An "attempt" is defined as registration in a class after the end of the registration period.

A student must take responsibility for initiating the withdrawal procedure. If this procedure is not followed, a grade of "WF" may be recorded for the student and "F" calculated in the grade point average.

If a "WF" is entered, it will be recorded on the permanent record and calculated as "F" in the grade point average.

All withdrawal policy statements apply to part-time as well as full-time degree credit and developmental credit students.

In accordance with the State College of Florida policy as stated in the college catalog, students may withdraw from any course or all courses without academic penalty of a WF by the withdrawal deadline as listed in the State College of Florida academic calendar. The student must take for initiating the withdrawal procedure. Students are strongly encouraged to talk with their instructors first before taking any withdrawal action.
In addition, students should note that faculty may also withdraw students for violating policies, procedures, or conditions of the class, as outlined in individual class syllabi, and such action could affect financial aid eligibility.

<table>
<thead>
<tr>
<th>Statement of Plagiarism</th>
<th>Plagiarism is the use of ideas, facts, opinions, illustrative material, data, direct or indirect wording of another scholar and/or writer—professional or student—without giving proper credit. Expulsion, suspension, or any lesser penalty may be imposed for plagiarism.</th>
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<tr>
<td>Disability Resource Center</td>
<td>State College of Florida, in accordance with the Americans with Disabilities Act, will provide classroom and academic accommodations to students with documented disabilities. Students are responsible for registering with the Disability Resource Center (DRC) in order to receive academic accommodations. Reasonable notice must be given to the DRC office (typically 5 working days) for accommodations to be arranged. It is the responsibility of the student to provide each instructor with a copy of the official Memo of Accommodation.</td>
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<tr>
<td>DRC Contact Information: Email: <a href="mailto:drc@scf.edu">drc@scf.edu</a> Phone: 941-752-5295 <a href="http://scf.edu/StudentServices/DisabilityResourceCenter/">http://scf.edu/StudentServices/DisabilityResourceCenter/</a></td>
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</tr>
<tr>
<td>Statement of Nondiscrimination</td>
<td>State College of Florida, Manatee-Sarasota (SCF) is an equal opportunity and access institution that does not discriminate on the basis of sex, race, religion, age, national origin/ethnicity, color, marital status, disability, genetic information, sexual orientation and any other factor prohibited under applicable federal, state, and local civil rights laws, rules and regulations in any of its educational programs, services or activities, including admission and employment. Direct inquiries regarding nondiscrimination policies to: Equity Officer, 941-752-5323, PO Box 1849, Bradenton, FL 34206. <a href="http://www.scf.edu/Administration/HumanResources/DiversityEquity/equalopportunity.asp">http://www.scf.edu/Administration/HumanResources/DiversityEquity/equalopportunity.asp</a></td>
</tr>
<tr>
<td>Religious Observances</td>
<td>Students who expect to be absent due to religious observances must provide their instructor with advance notification, in writing, of the purpose and anticipated length of any absence by the end of the second week of classes. At that time, the instructor and student will agree upon a reasonable time and method to make up any work or tests missed.</td>
</tr>
<tr>
<td>Department Chair Information</td>
<td>If a student encounters a problem in the course, they should work with the professor to resolve it. If the student needs help and the professor is unable to help or is unavailable, contact, based on your campus, Kim Ghiselin (Bradenton), Angelique Medvesky (Lakewood Ranch), or Stephanie Cook (Venice).</td>
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<tr>
<td>Week</td>
<td>Sections</td>
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| 1    | M 1/7 - F 1/11 | 1.1 Definitions and Terminology  
1.2 Initial-Value Problems  
1.3 DE’s as Mathematical Models | 1.1: 1 – 57 eoo  
1.2: 1 – 31 odd  
1.3: 1, 5, 7, 9, 13, 15, 17, 23 |
| 2    | M 1/14 – F 1/18 | 2.1 Solution Curves without a Solution  
2.2 Separable Equations  
2.3 Linear Equations | 2.1: 1, 13, 19 – 29 odd  
2.2: 1 – 41 eoo  
2.3: 1 – 33 eoo |
| 3    | M 1/21 – F 1/25  
1/21 – MLK Holiday | 2.4 Exact Equations  
2.5 Solutions by Substitutions | 2.4: 1 – 37 eoo  
2.5: 1 – 29 odd |
| 4    | M 1/28 – F 2/1 | Exam 1  
3.1 Linear Models | 3.1: 1, 5, 9, 11, 13, 17, 21, 29, 35, 39 |
| 5    | M 2/4 – F 2/8  
(No Day Classes) | 3.2 Nonlinear Models  
3.1 Preliminary Theory – Linear Equations | 3.2: 1 – 29 eoo  
3.1: 1 – 17 odd, 23, 25, 29, 31, 35 |
| 6    | M 2/11 – F 2/15  
2/15- Fac. Dev. Day | 4.2 Reduction of Order  
4.3 Homogeneous Linear Equations with Constant Coefficients  
4.4 Undetermined Coefficients – Superposition Approach  
4.5 Undetermined Coefficients – Annihilator Approach | 4.2: 1 – 19 odd  
4.3: 1 – 23 odd, 29, 31, 35, 37, 41  
4.4: 1 – 41 eoo  
4.5: 1 – 69 eoo |
| 7    | M 2/18 – F 2/22 | 4.6 Variation of Parameters  
4.7 Cauchy-Euler Equation  
4.8 Green’s Function | 4.6: 1 – 25 odd  
4.7: 1 – 37 eoo  
4.8: 1 – 31 odd |
| 8    | M 2/25 – F 3/1 | Exam 2  
4.9 Solving Systems of Linear DE’s by Elimination  
4.10 Nonlinear DE’s | 4.9: 1 – 23 odd  
4.10: 1 – 17 odd |
| 9    | M 3/4– F 3/8 | Spring Break College Closed |
| 10   | M 3/11 – F 3/15 | 5.1 Linear Models: Initial-Value Problems  
5.2 Linear Models: Boundary-Value Problems  
5.3 Nonlinear Models | 5.1: 1 – 41 eoo  
5.2: 1 – 19 odd, 21, 25, 27  
5.3: 1, 5, 9, 13, 15 |
6.2 Solutions About Ordinary Points | 6.1: 1 – 31 odd  
6.2: 1 – 23 odd |
6.4 Special Functions  
7.1 Definition of the Laplace Transform | 6.3: 1 – 29 eoo  
6.4: 1 – 31 eoo  
7.1: 1 – 41 odd |
| 13   | M 4/1 – F 4/5 | 7.2 Inverse Transforms and Transforms of Derivatives  
7.3 Operational Properties I  
7.4 Operational Properties II | 7.2: 1 – 37 odd  
7.3: 1 – 27 odd, 37 – 59 odd, 63, 67  
7.4: 1 – 53 eoo |
| 14   | M 4/8 – F 4/12 | 7.5 The Dirac Delta Function  
7.6 Systems of Linear DE’s | 7.5: 1 – 13 odd  
7.6: 1 – 15 odd |
| 15   | M 4/15 – F 4/19 | Review Exam 3  
8.1 Preliminary Theory – Linear Systems | 8.1: 1 – 25 odd |
| 16   | M 4/22 – F 4/26 | 8.2 Homogeneous Linear Systems  
8.3 Non-homogeneous Linear Systems | 8.2: 1 – 45 eoo  
8.3: 1 – 31 odd |
| 17   | M 4/29 – R 5/2 | FINAL EXAMS |
|      | F 5/3 | Final Grades Due for All Spring Classes |