

Differential Equations – Eureka Campus		
<b>Semester &amp; Year</b>	Spring 2019	
<b>Course ID and Section #</b>	MATH55 046100	
<b>Instructor's Name</b>	Tony Luehrs	
<b>Day/Time</b>	TR 9:30-11:35 AM	
<b>Location</b>	SC214	
<b>Number of Credits</b>	4	
<b>Contact Information</b>	<i>Office location</i>	SC216E
	<i>Office hours</i>	M: 11:30-12:30, W: 2:00-2:45, R: 11:35-12:30
	<i>Phone number</i>	707-476-4531
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<b>Textbook Information</b>	<i>Title &amp; Edition</i>	Differential Equations (2 <sup>nd</sup> Edition)
	<i>Author</i>	Blanchard, Devaney, Hall
	<i>ISBN</i>	0-534-38514-1
<b>Course Description</b>		
<p>A study of ordinary differential equations and solutions, equations of first and second order, linear differential equations, systems of equations, phase plane analysis, existence and uniqueness theorems, applications and modeling, and techniques for obtaining solutions, including series solutions and Laplace transforms. Computer exploration is an integral component of this course.</p>		
<b>Student Learning Outcomes</b>		
<ol style="list-style-type: none"> <li>1. Identify the type of a given differential equation and then find exact analytical solutions for first- and second-order differential equations, and systems of differential equations, including the existence and uniqueness of solutions.</li> <li>2. Apply the mathematics of differential equations to real-world problems and applications such as circuits, mixture problems, population modeling.</li> <li>3. Apply the use of computer technology to solve differential equations and systems, explore mathematical concepts,</li> <li>4. Compare solutions obtained by use of power series with numerical solutions.</li> <li>5. Determine the Laplace and inverse Laplace Transform of functions and use these to solve ordinary differential equations.</li> </ol>		
<b>Special Accommodations</b>		
<p>College of the Redwoods complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request at least one week before the first test so that necessary arrangements can be made. No last-minute arrangements or post-test adjustments will be made. If you have a disability or believe you might benefit from disability related services and may need accommodations, please see me or contact <a href="#">Disabled Students Programs and Services</a>. Students may make requests for alternative media by contacting DSPS at 707-476-4280.</p>		
<b>Academic Support</b>		
<p>Academic support is available at <a href="#">Counseling and Advising</a> and includes academic advising and educational planning, <a href="#">Academic Support Center</a> for tutoring and proctored tests, and <a href="#">Extended Opportunity Programs &amp; Services</a>, for eligible students, with advising, assistance, tutoring, and more.</p>		
<b>Academic Honesty</b>		
<p>In the academic community, the high value placed on truth implies a corresponding intolerance of scholastic dishonesty. In cases involving academic dishonesty, determination of the grade and of the student's status in the course is left primarily to the discretion of the faculty member. In such cases, where the instructor determines that a student has demonstrated academic dishonesty, the student may receive a failing grade for the assignment and/or exam and may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct (AP 5500) is available on the College of</p>		

the Redwoods website at: <http://www.redwoods.edu/board/Board-Policies/Chapter-5-Student-Services>, and scroll to AP 5500. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the college catalog and on the College of the Redwoods website.

### **Disruptive Classroom Behavior**

Student behavior or speech that disrupts the instructional setting will not be tolerated. Disruptive conduct may include, but is not limited to: unwarranted interruptions; failure to adhere to instructor's directions; vulgar or obscene language; slurs or other forms of intimidation; and physically or verbally abusive behavior. In such cases where the instructor determines that a student has disrupted the educational process a disruptive student may be temporarily removed from class. In addition, he or she may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct (AP 5500) is available on the College of the Redwoods website at:

<http://www.redwoods.edu/board/Board-Policies/Chapter-5-Student-Services> and scroll to AP 5500.

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### **Emergency Procedures for the Eureka campus:**

Please review the campus evacuation sites, including the closest site to this classroom (posted by the exit of each room). The Eureka **campus emergency map** is available at:

(<http://www.redwoods.edu/aboutcr/Eureka-Map>; choose the evacuation map option). For more information on Public Safety, go to <http://www.redwoods.edu/publicsafety>. In an emergency that requires an evacuation of the building:

- Be aware of all marked exits from your area and building.
- Once outside, move to the nearest evacuation point outside your building.
- Keep streets and walkways clear for emergency vehicles and personnel.
- Do not leave campus, unless it has been deemed safe by the Incident Commander or campus authorities. (CR's lower parking lot and Tompkins Hill Rd are within the Tsunami Zone.)

**RAVE** – College of the Redwoods has implemented an emergency alert system. In the event of an emergency on campus you can receive an alert through your personal email and/or phones at your home, office, and cell. Registration is necessary in order to receive emergency alerts. Please go to <https://www.GetRave.com/login/Redwoods> and use the "Register" button on the top right portion of the registration page to create an account. During the registration process you can elect to add additional information, such as office phone, home phone, cell phone, and personal email. Please use your CR email address as your primary Registration Email. Your CR email address ends with "redwoods.edu." Please contact Public Safety at 707-476-4112 or [security@redwoods.edu](mailto:security@redwoods.edu) if you have any questions.

*College of the Redwoods is committed to equal opportunity in employment, admission to the college, and in the conduct of all of its programs and activities.*

**Prerequisites:** A passing grade of C in Math-50B

**Technology:** A graphing calculator is **required** for this course. Calculators are available for loan through the CR Math Dept. This course will also utilize two software languages. *Mathematica*, which is available on campus computers, and can be downloaded onto personal computers for free using your CR email. Python is available on computers in our classroom (SC214) as well as in the Geek Room, and can be downloaded for free.

**Homework:** Suggested problems will be assigned daily and graded for completion. Students will be expected to assess the accuracy of homework solutions on their own using textbook solutions and *Mathematica*.

**Tests:** There will be 3 or 4 tests given in class with at least one week's notice, plus a final exam. Make up tests will only be given under extreme and documented circumstances. The final exam may **NOT** be rescheduled. The final exam will occur on **Tuesday, May 14, 8:30-10:30**.

**Projects:** We will complete a (handful of) project(s) utilizing *Mathematica* and/or Python. The purpose of these projects is to provide a more hands-on learning experience to reinforce the concepts illustrated during lecture. Most importantly, these projects will emphasize explorative learning. Each student will be required to provide both oral presentations to the class as well as written descriptions of the project.

**Attendance:** Attendance is required. I reserve the right to drop any student from the course who misses more than 4 course meetings. If you know you are going to miss a class, it is your responsibility to be in contact with me before class is missed.

**Grading:** I generally use the traditional grading scale (90-100 = A, etc.) but occasionally will grade on a curve. You must "pass" the final exam with a grade of 60% or greater to pass the course, regardless of the other components of your grade. Here are the components of your final grade:

Homework - 20%  
Projects - 15%  
Tests - 50%  
Final Exam - 15%

**Updates:** I reserve the right to make changes to this syllabus as I see fit. All changes will be announced in class.

## **General Expectations**

To ensure that we can all share in a positive learning environment, it is important that we all have proper expectations for how we'll work together, and it is important that we are all held to those expectations.

### **What you, the student, should expect from me, the professor:**

You should expect me to begin and end class on time every day.

You should expect me to always be well-prepared to teach the day's topic.

You should expect me to be present and able to assist you during all office hours.

You should expect me to assign homework (almost) every class period.

You should expect me to announce all tests one week prior to the test.

You should expect me to grade and return all homework and tests in a timely manner.

You should expect me to have respect for all of your questions and answers (that are course-related).

### **What I, the professor, will expect from you, the student:**

I expect you to plan to attend every day of the course.

I expect you to arrive in class on time.

I expect you to contact me before any missed classes to ensure you don't miss out on homework/quizzes.

I expect you to complete all homework assignments by the given deadline.

I expect you to seek help if you struggle with the homework.

I expect you to need to seek help; experiencing the struggle is part of the essence of education.

I expect you to participate in class by verbalizing questions and answers relating to class discussion.

I expect you to interact in a positive manner with other students in the class.

I expect you to have respect for my teaching process by keeping classroom distractions to a minimum.

I expect you to have respect for your fellow students by not engaging in side conversations that make it difficult for surrounding students (and myself!) to focus.

I expect you to mute and put away cell phones for the entire duration of every class.

I expect you to have respect for me and my teaching style, and for any disagreements about that to be discussed in a professional and constructive manner in a private setting.

Any student who fails to meet any of the last 5 student expectations may be removed from the course.

### **Some incorrect expectations:**

Some students believe that because I do not take daily attendance that attendance is optional. As each part of the course builds on previous parts, missing a lot of class will prevent you from understanding future material. This issue is compounded by the fact that this course will increase in difficulty as the semester progresses.

Some students believe that they are placing some undue burden on me by asking for extra help. Helping you learn is literally 100% of my job. What is a burden to me is lying awake at night wondering why the students who just failed the last test haven't come to see me to make an improvement plan for the next chapter. Don't make me lose sleep - just have me help you! It's my job!

Some students believe that because this is community college, expectations will be lower than if you were to take this course at, for example, Humboldt State University. Instead, you should understand that the operative word here is "college", and that I hold students to the exact same level of expectation here as I've held students to when I've taught this course in a state university setting. The learning outcomes and course content for this course are mandated by the state and are therefore identical for all offerings of this course no matter where you go in the state of California, so you should not expect any different level of expectation here than anywhere else you might take this course; the math is all the same.

Some students believe that they can “wing it” at the beginning of the semester, and worry about their grade closer to the end of the semester. It is very rare that a student performs better on the harder material at the end of the course than they did on the easier material at the beginning of the course. Passing any class is a full-semester process, and should be treated as such. If you are performing poorly on homework and tests, don’t wait until the second half of the semester to do something about it. Students are expected to be proactive and to self-advocate to obtain the resources necessary for their success.

Some students believe that they have the right to schedule the course as they see fit. While I consider myself a pretty friendly and flexible guy, I am quite rigid when it comes to tests and the final exam going exactly according to schedule for all students. Do not miss tests. For any reason. Period. Students who no-show a test (meaning didn’t attend and didn’t communicate about the lack of attendance beforehand) will have three (3) school days to provide proof of an extreme circumstance to me, after which the test grade will be an irreplaceable zero. For example, if your car breaks down on the way to campus to take a test, the first thing you need to do is email me to ensure that you’ve communicated your situation to me BEFORE the test occurs. Showing up to class the day after the test and telling me “I couldn’t make it, I got a flat tire” will result in an irreplaceable zero for the test, as this does not constitute extreme and documented circumstances, and was not communicated to me before the test occurred. If you have a very legitimate reason to miss a test but fail to communicate the proof of your circumstance to me within three school days, you will have missed your make-up test opportunity, regardless of the legitimacy of your lack of attendance. Life will happen, but if you stay in communication with me about it, everything will be fine.