Course Syllabus

<table>
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<tr>
<th>Course Name:</th>
<th>Differential Equations</th>
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<tbody>
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<td>Course Number:</td>
<td>MATH 2403</td>
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<tr>
<td>Course Description:</td>
<td>This course is to provide students with quantitative and problem-solving skills for first order, linear second order and systems of linear differential equations. Students will study differential equations, solutions in series, solutions using Laplace Transforms, systems of differential equations. Spring. 4 credit course.</td>
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<td>Pre-requisites/Co-requisites:</td>
<td>MATH 2054 and MATH 2208 with a grade of C or higher or exemption.</td>
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<td>USG General Education Outcomes pertinent to this course:</td>
<td>Quantitative Reasoning and Mathematics: quantitative reasoning and mathematics will be characterized by logic, critical evaluation, analysis, synthesis generalization, modeling, and verbal, numeric, graphical, and symbolic problem solving.</td>
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<td>Competence within the context of collegiate general education objectives is defined by the following outcomes:</td>
<td>o Ability to model situations from a variety of settings in generalized mathematical forms;  o Ability to express and manipulate mathematical information, concepts, and thoughts in verbal, numeric, graphical and symbolic form while solving a variety of problems;  o Ability to solve multiple-step problems through different (inductive, deductive and symbolic) modes of reasoning;  o Ability to properly use appropriate technology in the evaluation, analysis, and synthesis of information in problem-solving situations;  o Ability to shift among the verbal, numeric, graphical and symbolic modes of considering relationships;  o Ability to extract quantitative data from a given situation, translate the data into information in various modes, evaluate the information, abstract essential information, make logical deductions, and arrive at reasonable conclusions;  o Ability to employ quantitative reasoning appropriately while applying scientific methodology to explore nature and the universe;  o Ability to discern the impact of quantitative reasoning and mathematics on the sciences, society, and one's personal life.</td>
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ABAC Course Learning Outcomes:

**Differential Equations Course Outcomes:**

Upon completion of this course, the student should be able to ...

1. understand the concepts of solution, initial value problem and direction field
2. solve first order linear differential equations.
3. solve second order homogeneous and non-homogeneous linear ODEs.
4. use elimination methods to solve systems with constant coefficients.
5. use matrix methods to solve linear systems with constant coefficients.
6. use Laplace transform methods to solve linear systems of ODEs.
7. understand and apply basic numerical methods for solving.
8. demonstrate comprehension and understanding in the topics of the course through symbolic, numeric, and graphic methods.
9. demonstrate the use of proper mathematical notation.
10. use technology when appropriate and know the limitations of technology.

College Policy on Class Attendance:

**ATTENDANCE**

Courses at Abraham Baldwin Agricultural College are provided for the intellectual growth and development of students. To attain maximum success, students must attend all their classes, be on time, and attend all scheduled course activities including, but not limited to, field trips, seminars, study sessions, individual conferences, and lectures. This interaction with instructors and other students is an important element of the learning process, and a high correlation exists between class attendance and course grades. A student must understand the importance of regular participation in classroom and laboratory activities. The absence of any student affects not only his or her performance but the performance of the class as a whole. Absence from class, for whatever reason, does not excuse a student from full responsibility for class work or assignments missed. Students must accept this responsibility.

Instructors will keep accurate attendance records and must report the individual number of absences with midterm and final grades. Specific attendance requirements applying to labs, clinics, accelerated classes or Learning Support will be adapted to the unique situation by the appropriate division. Final determination of what constitutes an excused absence rests with the classroom instructor. In implementing this policy, faculty will not include in a student’s unexcused absences those absences incurred due to authorized and approved College sponsored events (or in the case of joint-enrollment students high-school sponsored events) in which the student represents the institution as part of a group or under the direct supervision of a faculty or staff member.

Whenever a student is absent, whether for official or personal reasons, the student must assume responsibility and provide notice to the instructor, preferably in advance, for making arrangements for any assignments and class work missed because of the absence. However, final approval for makeup work remains with the individual instructor.

A student who stops attending class without officially withdrawing from the course will receive a grade of “F” for the course.
INSTITUTIONAL ABSENCE
A student who serves as an official representative of the college is defined as one who:

- is authorized to use the college name in public relationships outside the institution;
- regularly interacts with non-college individuals and groups over an extended period of time (at least one semester);
- represents the college as a part of a group and not as an individual;
- represents the college under the direct supervision of a college faculty or staff member; and
- is authorized in writing, in advance, by the President of the college.

Such a student is in no way released from the obligations and responsibilities of all students, but will not be penalized with unexcused absences when absences result from regularly scheduled activities in which he/she represents the college.

Further, it is the responsibility of each student to contact instructors prior to the absence and to make arrangements to make up any work that will be missed, in a manner acceptable to the instructor. Advisors of activities will schedule off-campus activities in a manner that does not unduly disrupt the learning process for a student.

College Policy on Academic Dishonesty:

ACADEMIC DISHONESTY

Because Abraham Baldwin Agricultural College has the dual responsibility of educating students and helping them mature into worthy citizens who take their place in the larger community, it has adopted a code for dealing with academic irregularities.

Academic irregularities include, but are not limited to, giving or receiving of unauthorized assistance in the preparation of any academic or clinical assignment; taking or attempting to take, stealing, or otherwise obtaining in an unauthorized manner any material pertaining to the education process; selling, giving, lending, or otherwise furnishing to any person any question and/or answers to any examination known to be scheduled at any subsequent date; fabricating, forging, or falsifying lab or clinical results; plagiarism in any form related to themes, essays, term papers, tests, and other assignments; breaching any confidentiality regarding patient information.

Due Process for Academic Dishonesty Cases

Step 1. When a faculty member suspects that a student has engaged in academic dishonesty, the faculty member will call the student into a private meeting in the faculty member’s office. (The division chair will be notified of and will approve any action.)

Step 2. The faculty member will confront the student with the evidence of dishonesty and/or academic irregularity. The faculty member and the student will discuss the specifics of what occurred. If the student confesses and accepts responsibility for academic dishonesty, then the faculty member will ask the student to sign in his/her own handwriting, a statement which makes clear that the student admits responsibility for the academic dishonesty. The faculty member will then consult with the division chair. The faculty member is then free to reprimand the student, to give a failing grade for the
assignment, or to require the student to resubmit the assignment in question. With approval of the division chair, the faculty member can increase the penalty up to and including a “WF” for the course if the incident(s) merit this severe penalty.

Step 3. If the student refuses to sign a statement accepting responsibility for the act(s) of academic dishonesty, then a full hearing on the matter must be held. The faculty member and chair will document this incident and schedule a meeting with the student. This information will be turned over to the Academic Dean, who will make the determination of charges against the student and notify him/her in writing. The charges will be mailed by the Academic Dean to the student along with a notice to appear at a hearing, and, if the student wishes, to bring witnesses. At least three days’ notice is necessary unless the student waives the notice in writing.

Step 4. If the student requests a hearing, the Academic Dean has the option of hearing the case for administrative adjudication, convening a special hearing panel including faculty and students, or of referring it to the Student Life Hearing panel which handles all other disciplinary matters on campus. The committee will provide its recommendation to the Academic Dean. The Student Life Hearing Panel, when hearing cases of academic dishonesty, will include two faculty members, two students (one of whom will be the SGA president and the other an associate justice,) and the Director of Student Life, who oversees campus discipline and the Code of Conduct. The Chief Justice of the SGA chairs the panel. The Vice President for Student Affairs will serve as advisor to the panel for all academic dishonesty cases. In general, the decision of the Academic Dean or his/her designee will not be appealed to the Student Life Hearing Panel. An appeal of the Dean’s decision will go directly to the President who may choose to use the Student Life Hearing Panel to make a recommendation to him.

Step 5. The student has a right to appeal the decision of the hearing officer or hearing panel within ten calendar days of the decision. The appeal will be to the President or his designee. The President’s decision is final. The President reserves the right to review all disciplinary cases and the judgments made during the process.

If there is a student in this class who has specific needs because of learning disabilities or any other disability, please feel free to contact the instructor.

This is a partial syllabus. More detailed information relating to the class and Instructor will be made available to each student.