

**MATH 3120 - 01 Differential Equations**  
**Fall Semester 2004**  
**MWF 8:00 - 8:50 CX 116**

*Instructor: Dr. Samuel Jator*

**Communications:**

I invite you to come by my office (CX 329A) as follows: 9:00-11:00 daily. By phone, dial 931-221-7313(Office) or 931-358-9433(Home). My email address is [Jators@apsu.edu](mailto:Jators@apsu.edu). You can also visit my web page at <http://www.apsu.edu/Jators>.

**Prerequisite:** MATH 2110

**Credit:** 3 Credit Hours.

**Text:** Differential Equations with Boundary – Value Problems / Dennis G. Zill, Michael R. Cullen, Fifth Edition, 2001.

**Course Description:**

First order differential equations and applications, linear equations of higher order and applications, series solution of differential equations, Bessel functions and other classical functions obtained by series solution.

**Course Objectives:**

- To study how to set up differential equations
- To study how to construct differential equations as mathematical models
- To study how to solve differential equations using various techniques
- To study the applications of differential equations
- To study how to find theoretical, qualitative, and computational solutions of differential equations.

**Course Contents:**

- Introduction to differential equations (chapter 1)
- First order differential equations (chapter 2)
- Modeling with first-order differential equations (chapter 3)
- Higher-order differential equations (chapter 4)
- Series solutions of linear equations (chapter 6)

**Calculator Requirement:**

Demonstrations will be given using the TI-86.

**Software:**

Mathematica

**Requirements/Grading:**

Homework: Regular homework assignments and quizzes will be given and will count 100 points toward the final grade. Late submission of required homework to be graded will be unacceptable. Poor presentation of the assignments will be penalized in points.

Examinations: There will be four examinations. Two of them will be announced in class, the third one will be a project involving research, programming, and a presentation. The last one will be taken during the examination period in December. Each examination (except the project) is focused on the material covered since the previous one, but may include questions about supporting materials from previous sections in the course. The last examination, which will be partially comprehensive, will have the same weight as the others. Each examination will count 100 points toward the final grade.

Make Up Tests: Make up tests will be given during the week preceding the examination week. Make up tests are generally more difficult than the regular in class tests. There is no make up for the quizzes and they cannot be taken early.

### **How Points and Percentages Equate to Letter Grades**

90-100%	A
80-89%	B
70-79%	C
60-69%	D
0-59%	F

#### **Attendance:**

Regular attendance is expected. Unavoidable absences, which might be due to illness, must be proven with a medical report. Five days of unexcused absences will be penalized in points, the details of which will be at the discretion of the instructor.

#### **Disability:**

Students with disabilities are encouraged to consult the office of disability. I will respect all university policies for students under this category.

#### **University Policy on Minors**

According to APSU policy #3:032, minors (defined as those under the age of 18) are not allowed in classrooms. For additional information on minors on campus, contact the Office of Student Affairs in the Morgan University Center.

#### **Withdrawing From Class**

My policy is to grant W's to those students who withdraw officially on or before the date listed in the university calendar as the last day to drop a class with a "W", "F", "FN", or "FA". This semester that date is Nov. 12. **Withdrawal after that date will result in an F** except for extreme circumstances such as being hospitalized and unable to finish the course.