I. Locator Information:
Instructor: ______ Dr. A. Umantsev ________ Office Location: __ LS 318__
Course # and Name: ___ ENGR-202, Dynamics _____ Office hours: MWF: 12:00-1:00pm,
Semester Credit Hours: _______ 3 ______ Office Phone: __(910) 672-1449
Total Contact Hours for Class: ___3/week_____ Email address: _____
aumantsev@uncfsu.edu
Day and Time Class Meets: MWF: 11:00-11:50pm in Room 304W in Lyons Science Bldg

FSU Policy on Electronic Mail: Fayetteville State University provides to each student, free of charge, an electronic mail account (username@uncfsu.edu) that is easily accessible via the Internet. The university has established FSU email as the primary mode of correspondence between university officials and enrolled students. Inquiries and requests from students pertaining to academic records, grades, bills, financial aid, and other matters of a confidential nature must be submitted via FSU email. Inquiries or requests from personal email accounts are not assured a response. The university maintains open-use computer laboratories throughout the campus that can be used to access electronic mail.
Rules and regulations governing the use of FSU email may be found at http://www.uncfsu.edu/PDFs/EmailPolicyFinal.pdf

II. COURSE DESCRIPTION:
ENGR 202 Engineering Dynamics (3-3-0)
An introduction to kinematics and kinetics of particles in rectangular, cylindrical, and curvilinear coordinate systems; energy and momentum methods for particles; kinetics of systems of particles; kinematics and kinetics of rigid bodies in two and three dimensions; motion relative to rotating coordinate systems. Kinematics and kinetics of particles in rectangular, cylindrical, and curvilinear coordinate systems; energy and momentum methods for particles; kinetics of systems of particles; kinematics and kinetics of rigid bodies in two and three dimensions; motion relative to rotating coordinate systems. 
Prerequisite:  MATH 242, C- or better in ENGR 201.

III. TEXTBOOK & LABORATORY MANUAL:

IV. SPECIFIC COURSE OBJECTIVES:
To provide students with a fundamental understanding of the theory and applications of engineering dynamics.

V. COURSE COMPETENCIES:
Upon successful completion of this course, students should be able to:
• Demonstrate an understanding of the content knowledge, how it relates to other disciplines, and to everyday living.
• Demonstrate in-depth knowledge of the content that they plan to teach.
• Apply new technologies to teaching, learning, and research.
• Reflect upon his/her science knowledge, and make improvements as needed.
• Demonstrate a commitment to ongoing professional development in all areas of science learning and instruction.

VI. EVALUATION CRITERIA/GRADING SCALE:
The progress of each student will be evaluated by means of three one-hour examinations given during the semester, homework, quizzes, and a final examination.

A. Grade distribution
   Three hour exams (15 × 3) 45
   Homework and quizzes 35
   Final examination 20
   Total 100

B. Grading scale
   The final letter grade assigned to the student will be based upon the following numerical equivalencies.
   A = 90 – 100
   B = 80 – 89
   C = 70 – 79
   D = 60 – 69
   F = 59 or less

VII. COURSE OUTLINE:

<table>
<thead>
<tr>
<th>week of</th>
<th>subject</th>
<th>read/hw</th>
<th>hw due</th>
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| T Jan 10 | rect. coord.       | **read:** Theory Sects. 7.1-7.5; Book Sects. 12.1-12.9, 13.1-13.5  
                  | hw: 12.2,11,18,33,34,66,67,87,98           | T Jan 17 |
| T Jan 17 | polar/tan-nor. coord. | hw: 12.137,146,149,158,169,171, 174,178,102,103,121,133 | T Jan 24 |
| T Jan 24 | kinetics           | hw: 13.2,9,13,15,18,23,33,42,43              | T Jan 31 |
| T Jan 31 | review             |                                              |         |
| T Feb 7  | TEST NO. 1         |                                              |         |
                  | hw: 14.2,13,15,49                           | T Feb 14 |
| T Feb 14 | poten. energy, lin. impulse-lin. mom. | hw: 14.65,75,82,90  
                  |                                              | 15.2,7,10,11,23,33,71,87                     | T Feb 21 |
| T Feb 21 | ang. impulse-ang. mom. | hw: 15.94,95,97,98,107                       | H Feb 23 |
| T Feb 28 | review             |                                              |         |
| H Mar 2  | TEST NO. 2         |                                              |         |

M – F Mar 6 – 10          Spring Break
T Mar 14  | ang. vel., ang. accel. | read: Theory Sects. 9.1,2,3 (planar only), 4; Book Sects. 16.1-5,16.7,16.8  
T Mar 21 | hw: 16.131,133,135 | T Mar 28 
T Mar 28 | body-fixed frame | hw: 16.142,145,146 | T Apr 4 
T Apr 4  | kinetics | read: 17.1-5,18.1-5  
| hw: 17.53,59,70,71,79,83, 18.26,45 | T Apr 11 
T Apr 11 | review | 
| 
H-F April 13 – 14 | Spring Holiday | 
T Apr 18 | TEST NO. 3 | 
H Apr 20 | review | 
T Apr 25 | review | 
H Apr 27 | Last day of class | 
H May 4 at 1:00-4:00 PM | Final Exam |

**VIII. COURSE REQUIREMENTS:**

Students are required to take all exams on the date they are scheduled. Make-up exams will not be given unless a student presents a written excuse before the third class period following the initial date of a test or unless special arrangements have been made with the instructor prior to the exam date. Only in very unusual cases will any exceptions to these rules be made.

As a student in this course, you are responsible for all work assigned, whether or not you are present. You are, of course, also expected to complete your assignments on time. Work handed in or reported late will receive a lower grade than that handed in on time. If you must be absent unavoidably, send your paper via a friend and ask that person to get your assignment, take notes for you, and pick up any handouts. You are also responsible for demonstrating (by means of make-up work or in class discussion) an understanding of content covered in class on the day of the absence. Students are required to attend all class regularly and to keep appointments when they are scheduled. It is the responsibility of each student to be informed of the academic requirements of the instructor. An absence, excused or unexcused, does not relieve the student of any course requirement.

**IX. TEACHING STRATEGIES:**

A variety of formats will be used in this class. Typically, the class will begin with answering your questions about the homework or a ten-minute quiz, then new material in a lecture format and then in-class exercises, with discussion in an interactive format. Listed below are some suggestions, which will help us to have a successful learning experience.

1. Come to class. Regular attendance is expected. You are responsible for all information disseminated at all class meetings. If you are not there, you will miss the flow of events, the questions and discussion of your peers, and information given in the lecture.
2. Do the end-of-chapter questions. Try to answer the questions in a reflective manner. Test your understanding of concepts. Don't rush through the questions. As the quizzes will test your ability to apply what you learned to new situations and problems, it is critical that you understand the concepts. Please ask for clarification if you feel that you do not understand the question.

3. Do the reading assignments. The study questions are intended as a guide to what you are supposed to be getting out of the reading. However, feel free to think for yourself and develop opinions about the topics presented in the reading.

4. Study diagrams and tables. They are more than pretty pictures. They can pull together what is being described in the text in a very vivid way.

5. It is essential that you learn the vocabulary of our subject material. Make a vocabulary list of terms and definitions that you find key.

6. If you are in trouble, ask for help. I have posted office hours at which time I will be available to answer questions. I will also be glad to make an appointment for other times. If you have a quick question, feel free to contact me by email. In addition, I will organize help sessions if a group of students are having difficulty with a particular topic or if the class requests a review session before an exam. Remember, in the end, you are responsible for learning.

VI. Academic Support Resources – Communications with the Instructor. A limited number of books is available at Chesnutt Library.

DISCLAIMER

To accommodate emergent circumstances, the professor reserves the right to make reasonable changes in the syllabus while the course is in progress. Any understandings between a student and the professor including, but not limited to, changes, expectations, or modifications to course requirements or procedures must be in writing and must be signed by both parties. Any question of interpretation of course requirements or of understandings between a student and the professor will be at the discretion of the professor.
FSU Policy on Disruptive Behavior in the Classroom (Optional)

The Code of the University of North Carolina (of which FSU is a constituent institution) and the FSU Code of Student Conduct affirm that all students have the right to receive instruction without interference from other students who disrupt classes.

FSU Core Curriculum Learning Outcome under Ethics and Civic Engagement (6.03): All students will “prepare themselves for responsible citizenship by fulfilling roles and responsibilities associated with membership in various organizations.” Each classroom is a mini-community. Students learn and demonstrate responsible citizenship by abiding by the rules of classroom behavior and respecting the rights all members of the class.

The FSU Policy on Disruptive Behavior (see FSU website for complete policy) identifies the following behaviors as disruptive:

1. Failure to respect the rights of other students to express their viewpoints by behaviors such as repeatedly interrupting others while they speak, using profanity and/or disrespectful names or labels for others, ridiculing others for their viewpoints, and other similar behaviors;
2. Excessive talking to other students while the faculty member or other students are presenting information or expressing their viewpoints.
3. Use of cell phones and other electronic devices
4. Overt inattentiveness (sleeping, reading newspapers)
5. Eating in class (except as permitted by the faculty member)
6. Threats or statements that jeopardize the safety of the student and others
7. Failure to follow reasonable requests of faculty members
8. Entering class late or leaving class early on regular basis
9. Others as specified by the instructor.

The instructor may take the following actions in response to disruptive behavior. Students should recognize that refusing to comply with reasonable requests from the faculty member is another incidence of disruptive behavior.

1. Direct student to cease disruptive behavior.
2. Direct student to change seating locations.
3. Require student to have individual conference with faculty member. At his meeting the faculty member will explain the consequences of continued disruptive behavior.
4. Dismiss class for the remainder of the period. (Must be reported to department chair.)
5. Lower the student’s final exam by a maximum of one-letter grade.
6. File a complaint with the Dean of Students for more severe disciplinary action.

Students who believe the faculty member has unfairly applied the policy to them may make an appeal with the faculty member’s department chair.