

**HAGERSTOWN COMMUNITY COLLEGE  
COURSE SYLLABUS**

**COURSE: EGR 204 Dynamics**

**(3 Credits)**

**INSTRUCTOR:**

**SEMESTER/YEAR: 17/FA**

**SEMESTER/YEAR:**

**TEXTBOOK:** Engineering Mechanics: Dynamics Fifth Edition, Bedford & Fowler, Prentice-Hall, ISBN 978-0-13-612916-5

**COURSE DESCRIPTION:** Coverage of principles of dynamics, kinematics, and kinetics of particles, kinetics of systems of particles, and kinematics and kinetics of rigid bodies through Euler's equations is included. Prerequisites: EGR 108 and MAT 204 or concurrent registration in MAT 204.

**STUDENT LEARNING OUTCOMES:**

1. Derive and apply the relationships between position, velocity, and acceleration of a particle in rectilinear and curvilinear motion.
2. Derive relations defining the velocity and acceleration of any particle on a rigid body for translation, rotation and general plane motion.
3. Correctly apply Newton's second law to analyze the motion of a particle in rectilinear or curvilinear translation acted upon by forces, or a rigid body in plane motion acted upon by forces and moments.
4. Apply the method of work and energy to problems involving a single particle, a system of particles, or a rigid body in plane motion.
5. Select the method of analysis that is best suited for the solution of a given problem. (Newton's Law, Work and Energy, Impulse and Momentum, or a combination of these methods.)
6. Describe and analyze the plane motion of a particle relative to a rotating frame.
7. Determine Coriolis acceleration in plane motion.
8. Apply the principle of impulse and momentum to problems of direct and oblique central impact, as well as eccentric impact.

**TOTAL HOURS OF COURSEWORK:**

To earn three academic credits at HCC, students are required to complete a minimum of 37.5 clock hours (45 fifty-minute "academic" hours) of coursework per semester. Those hours of coursework may be completed through a combination of hours within the classroom and hours outside the classroom. Certain courses may require more than the 37.5 minimum hours of coursework per credit.

For most classes, students should expect to do at least 2 hours of coursework outside of class for each hour of in-class coursework.

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For engineering classes, students should expect to do at least 3 hours of coursework outside of class for each hour of in-class coursework.

**Direct Faculty Instruction:** 1 hour/week/credit for 15 weeks; 50 min = 1 classroom hour  
 (50 min x 3 credits x 15 weeks) = 2250 minutes = 37.5 hours

**Student Work Outside the Classroom:** 3 hours/week/credit for 15 weeks  
 (3 hrs x 3 credits x 15 weeks) = 135 hours

	Direct Faculty Instruction	Student Work (Out of Class)
<b>In Class Lectures + In Class Exams</b>	<b>37.5 Hours</b>	
<b>3 Exams (2 Tests and Final Exam)</b>		<b>50 Hrs.</b>
<b>Homework Assignments</b>		<b>85 Hrs.</b>
<b>TOTAL</b>	<b>37.5 Hours</b>	<b>135 Hours</b>

**COURSE POLICIES:**

**THE INSTRUCTOR RESERVES THE RIGHT TO MODIFY THE COURSE CONTENT AND/OR THE EVALUATION (TESTING) PROCEDURES AS DEEMED NECESSARY.**

**Hagerstown Community College’s Attendance Policy:** Students are expected to attend all classes. In the case of absence due to emergency, or participation in Official College functions, it is the student’s responsibility to confer with the instructor about the absence and missed course work. Further, **it is the student’s responsibility to withdraw officially from any class, which he/she ceases to attend.** Failure to do so will result in the recording of an “F” grade. Students absent from an announced test or exam, unless authorized, may be given an equivalent exam at a later date at the discretion of the instructor.

**Emergency/Inclement Weather:** Listen to your local news for cancellations or delays. You may also call the college at 301-790-2800 or log onto the website at [www.hagerstowncc.edu](http://www.hagerstowncc.edu).

**Honor Code:** Upon admission to HCC all students sign a pledge to uphold an honor system which holds the qualities of honesty and integrity in highest regard for the duration of their educational experience. The HCC Honor Code Policy and Procedures, also referred to as Academic Integrity, is published in the Student Handbook and may be obtained in the Student Activities Office.

**CONTACT INFORMATION:**

**Office Hours:**

**SERVICES FOR STUDENTS WITH DISABILITIES:**

Students may receive reasonable accommodations if they have a diagnosed disability and present appropriate documentation. Students seeking accommodations are required to contact the Disability Support Services (DSS) office as early as possible. Students may contact a DSS staff member for an appointment at [dss@hagerstowncc.edu](mailto:dss@hagerstowncc.edu) or at 240-500-2530.