UNIVERSITY OF NORTH TEXAS SYLLABUS
MEEN 2302 Mechanics II Summer 2019. 3 Credit hours

Instructor: Dr. Mark Wasikowski
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Email Address: mark.wasikowski@unt.edu (emergencies only)
Lecture: MW 2:30–4:20 PM, NTDP F175
Office Hours: NTDP F101L. MW, 9 am to 11 am.
Teaching Assistant: TBD

Catalog Course Description: Formulate and solve problems that involve forces that act on bodies which are moving. Understand kinematics and kinetics of particles and rigid bodies in two and three dimensions; equations of motion; motion relative to rotating coordinate systems. Understand energy conservation principles.

Prerequisite(s): Pass with C or better
1) MEEN 2301: Mechanics 1. Basic concepts of forces in equilibrium and how to apply to engineering systems. Distributed forces and loads. Frictional forces. Inertial properties. Particle & finite sized body equilibrium. Bending moments in beams.
2) MATH 1720: Calculus II. Differentiation and integration of exponential, logarithmic and transcendental functions; integration techniques; indeterminate forms; improper integrals; area and arc length in polar coordinates; infinite series; power series; Taylor's theorem.


COURSE LEARNING OUTCOMES:
1. Express dynamic quantities as vectors in terms of Cartesian components, polar coordinates, and normal-tangential coordinates.
2. Compute mass moments of inertia for systems of particles and rigid bodies.
3. Solve kinematic problems involving rectilinear and curvilinear motion of particles.
4. Solve kinetic problems involving a system of particles using Newton’s Second Law.
5. Apply the principles of work and energy and conservation of energy to the solution of engineering problems involving particles and systems of particles.
6. Apply the principles of impulse and momentum and conservation of momentum to the solution of engineering problems involving particles and systems of particles.
7. Solve kinematic problems involving the translation and rotation of a rigid body.
8. Solve kinematic problems involving general planar of rigid bodies.

ABET LEARNING OUTCOME:
1. An ability to identify, formulate, and solve a complex engineering problem by applying principles of engineering science and mathematics.
GRADES: standard 90/80/70/60 scale used, weighted by the following:

1. **10%**: attendance: when taken, performed near beginning of class via roll call. Must be present when called for credit. No late attendance accepted.
2. **16%**: 8 x homework @ 2% each: CANVAS on-line each week. No late homework.
3. **24%**: 4 x quizzes @ 6% each: closed book exams over each two chapters.
4. **25%**: midterm 1: closed book exam over chapters 12,13,14,15. 1 July.
5. **25%**: midterm 2: closed book exam over chapters 16,17,18,19. 7 August.

Calculator: ONLY FE exam approved calculator models allowed

- Casio: All fx-115 and fx-991 models;
- Hewlett Packard: The HP 33s and HP 35s models;
- Texas Instruments: All TI-30X and TI-36X models;

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<tr>
<th>Date</th>
<th>Chapter</th>
<th>Section</th>
<th>Quiz</th>
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<tbody>
<tr>
<td>3/5 June</td>
<td>Particle Kinematics</td>
<td>12</td>
<td>1,2,4,5,6,7,8</td>
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<tr>
<td>10/12 June</td>
<td>Particle Kinetics</td>
<td>13</td>
<td>1,2,4,5,6</td>
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<tr>
<td>17/19 June</td>
<td>Particle Work, Energy, Power, Efficiency</td>
<td>14</td>
<td>1,2,4,5,6</td>
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<tr>
<td>24/26 June</td>
<td>Particle Impulse, Impact, Momentum</td>
<td>15</td>
<td>1,4,5,6,7</td>
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<td>1 July</td>
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<td>Midterm 1</td>
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<td>3 July</td>
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<td>NO CLASS</td>
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<tr>
<td>8/10 July</td>
<td>Rigid Body Kinematics</td>
<td>16</td>
<td>1,2,3,4,5,6</td>
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<tr>
<td>15/17 July</td>
<td>Rigid Body Kinetics</td>
<td>17</td>
<td>1,2,3,4,5,5,6</td>
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<td>22/24 July</td>
<td>Rigid Body Work, Energy</td>
<td>18</td>
<td>1,2,3,4,5</td>
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<td>29/31 July</td>
<td>Rigid Body Impulse Momentum</td>
<td>19</td>
<td>1,2,3</td>
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<td>5 August</td>
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<td>Review</td>
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<td>7 August</td>
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<td>Midterm 2</td>
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ACCEPTABLE STUDENT BEHAVIOR: I consider this classroom to be a place where you will be treated with respect. All are expected to contribute to respectful and inclusive environment. We enforce Code of Student Conduct at deanolfsstudents.unt.edu/conduct.

ACADEMIC INTEGRITY STANDARDS AND SANCTIONS FOR VIOLATIONS Course follows UNT Policy 06.003. There is zero-tolerance policy. Cheating results in an ‘F’ on assignment and matter turned over to appropriate disciplinary committee.

ADA STATEMENT Course follows UNT learning disability policy at disability.unt.edu.

STUDENT PERCEPTIONS OF TEACHING EFFECTIVENESS (SPOT) Course participates in SPOT evaluations (http://spot.unt.edu/ or email spot@unt.edu).

RETENTION OF STUDENT RECORDS Course follows Family Educational Rights and Privacy Act (FERPA) laws and UNT Policy 10.10, Records Management and Retention.

SYLLABUS CHANGES Instructor reserves right change syllabus. Any changes announced in class and posted to CANVAS with an accompanying email to student’s UNT email address.