

Spring 2021

## **MECH 236-004: Dynamics**

Yuan Ding

Follow this and additional works at: <https://digitalcommons.njit.edu/ce-syllabi>

---

### **Recommended Citation**

Ding, Yuan, "MECH 236-004: Dynamics" (2021). *Civil and Environmental Engineering Syllabi*. 487.  
<https://digitalcommons.njit.edu/ce-syllabi/487>

This Syllabus is brought to you for free and open access by the NJIT Syllabi at Digital Commons @ NJIT. It has been accepted for inclusion in Civil and Environmental Engineering Syllabi by an authorized administrator of Digital Commons @ NJIT. For more information, please contact [digitalcommons@njit.edu](mailto:digitalcommons@njit.edu).

**MECH 236 - Engineering Mechanics: Dynamics**

Spring 2021

- Text:**
1. Hibbeler, R.C., Engineering Mechanics-Dynamics, 13th Edition, Prentice Hall, 2010, ISBN 978-0-13-291127-6 or 0-13-291127-2
  2. NCEES, Fundamentals of Engineering Supplied-Reference Handbook, 8th Edition, (optional, free from: <https://ncees.org/engineering/fe/>)

**Instructor:** Prof. Y. Ding, 264 Colton hall, 973-642-7046, ding@njit.edu

*Prerequisite: Mech 235 (or Mech 234 for EE, CoE, IE, ME majors). Provides an understanding of the mathematics of the motion of particles and rigid bodies, and of the relation of forces and motion of particles.*

WEEK	TOPIC	ARTICLES
1	Kinematics of Particles	12.1 - 12.6
2	Kinematics of Particles	12.7 - 12.10
3	Force & Acceleration	13.1 - 13.3
4	Force & Acceleration	13.4 - 13.5
5	Energy & Work	14.1 - 14.6
6	Exam-1 (tentative)	Confirmation on canvas later
7	Momentum, Impact	15.1 - 15.4
8	Kinematics of Rigid Bodies	16.1 - 16.4
9	Rigid body: Relative Velocity	16.5
10	Exam-2 (tentative)	Confirmation on canvas later
11	Rigid body: Instant Center	16.6
12	Rigid Bodies Acceleration	16.7
13	Kinetics of a Rigid Body	17.1 - 17.5
14	Rigid body Energy, Vibrations	18.1 - 18.5, 22.1 - 22.2
15	Final Exam	

**TUTORIAL HELP:**

Tutorial by webex, link and hours on canvas. Students with difficulties are encouraged to login webex during the tutorial hours.

**GRADING:**

Homework	10 %
Exam-1	30 %
Exam-2	30%
Final Exam	30%
Total	100%

**The grade scheduling:**

A = 90 to 100            C = 70 to 74  
B+ = 85 to 89           D = 60 to 69  
B = 80 to 84            F = 59 or less  
C+ = 75 to 79           W = Voluntary before deadline (school schedule)

Incomplete = given in rare instances where the student is unable to attend or otherwise do the work of the course due to illness, etc. The grade must be made up in the next semester by completing all of the missed work.

### **EXAMS:**

Generally, calculator is need for all exams. No other electronic device, storage medium, or accessory of any kind, is allowed during any exam.

### **HOMEWORK:**

Homework will be checked and returned the following week. To obtain full credit, you must submit the work on time and in the proper form. A minimum of 70% of the homework must be submitted to receive a passing grade in the course. Late homework will get reduced points (20% off for each collection cycle). The followings are required for homework:

1. On the very top of each page (along top edge), PRINT your name, class day and time (e.g. Tuesday 12:30 pm), HW set number (e.g., HW-1), problem number (e.g. 12-3), date, and page number (1 of 7, 2 of 7, etc.).
2. The problems must be presented in numerical order as assigned. If more than one problem on the same page, **a clear dividing line is required between problems.** (Do not write one problem on two pages). Writings are to be neat, clear and legible.
3. Draw neat, clear free bgo ody diagrams as required. Use a straight edge if needed.
4. Box the final answer(s) with unit(s) (and direction if needed).
5. **All hw submission will be on canvas.**

### **Academic Integrity**

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: <http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at [dos@njit.edu](mailto:dos@njit.edu)