

**GEN\_ENG 205-2 -- ENGINEERING ANALYSIS 2**  
**WINTER QUARTER 2023**  
**Prof. Huang, y-huang@northwestern.edu**

Textbook: Engineering Mechanics by Bedford and Fowler

**10am section: 10-10:50am, Annenberg G15; TAs: Aeschliman**

(spenceraeschliman2026@u.northwestern.edu) and Nguyen (AnhNguyen2025@u.northwestern.edu)

11am section: 11-11:50am, Annenberg G15; TAs: Jiayang Li (JiayangLi2024@u.northwestern.edu) and Lyu (YuhuiLyu2024@u.northwestern.edu)

TA for Matlab tutorial: Shupeng Li (ShupengLi2024@u.northwestern.edu)

**Graduate TAs and Undergraduate Tutors office hours**

(All TAs, and some undergraduate tutors, can help Matlab coding. Some undergraduate tutors may not.)

**Mon:**

8:30-10:30am: Marquez (undergraduate tutor, may not help Matlab coding) in AG40 (also zoom);

1-2pm: Ashley Berson (undergraduate tutor, may not help Matlab coding) in AG40 (also zoom);

1-3pm: Lyu and Yu (TAs) in MG45 (also zoom);

1-3pm: Griffin Berse (undergraduate tutor, can help Matlab coding) in AG40 (also zoom);

3-5pm: Shupeng Li and Nguyen (TAs) in MG45 (also zoom);

**Tue:**

12:30-2:30pm: Ashley Berson (undergraduate tutor, may not help Matlab coding) in AG40 (also zoom);

1-3pm: Skiles and White (TAs) in MG45 (also zoom);

3-5pm: Shupeng Li, Skiles and White (TAs) in MG45 (also zoom);

6:30-8:30pm: Johnson (undergraduate tutor, can help Matlab coding) in AG40 (also zoom);

**Wed:**

1-2pm: Ashley Berson (undergraduate tutor, may not help Matlab coding) in AG40 (also zoom);

1-5pm: Dieppa and Jiayang Li (TAs) in MG45 (also zoom);

3-5pm: Marchetta (undergraduate tutor, can help Matlab coding) in AG40 (also zoom);

**Thu:**

9-11am: Griffin Berse (undergraduate tutor, can help Matlab coding) in AG40 (also zoom);

noon-1pm: Yang (TA) in MG45 (also zoom);

1-2pm: Ahmed and Yang (TAs) in MG45 (also zoom);

2-3pm: Ahmed (TA) in MG45 (also zoom);

3-5pm: Ahmed and Yang (TAs) in MG45 (also zoom);

6:30-8:30pm: Johnson (undergraduate tutor, can help Matlab coding) in AG40 (also zoom);

**Fri:**

1-3pm: Aeschliman, Lyu, and Yu (TAs) in MG45 (also zoom);

3-5pm: Aeschliman and Nguyen (TAs) in MG45 (also zoom);

**Sat:**

7:30-9:30am: Marquez (undergraduate tutor, may not help Matlab coding), zoom only;

**Sun:**

10:00am-noon: Marchetta (undergraduate tutor, can help Matlab coding), zoom only.

**Week 1**

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Lecture 1      Tue, 1/3      Chapter 1: Introduction; Chapter 2: Vectors §2.1, §2.2, §2.3

Lecture 2      Wed, 1/4      Chapter 2: Vectors §2.4 (Dot product), §2.5 (Cross product)

Lecture 3      Thu, 1/5      Chapter 3: Forces §3.1 (Basics)

*Recitation 1*    *Fri, 1/6*      *Review units and vectors*

## **Week 2**

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Lecture 4	Mon, 1/9	Chapter 3: Forces §3.2 (2D force systems)
Lecture 5	Tue, 1/10	Chapter 3: Forces §3.2 (2D force systems) (finish)
Lecture 6	Wed, 1/11	Chapter 3: Forces §3.3 (3D force systems)
Lecture 7	Thu, 1/12	Chapter 3: Forces §3.3 (3D force systems) (finish)
<i>Recitation 2</i>	<i>Fri, 1/13</i>	<i>Review 2D force systems (Project 1 assigned)</i>

## **Week 3**

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<b>No class</b>	<b>Monday 1/16</b>	<b>(MLK day)</b>
<i>Lecture 8</i>	<i>Tue, 1/17</i>	<i>Matlab for EA2.</i>
<i>Lecture 9</i>	<i>Wed, 1/18</i>	<i>Additional Matlab for EA2</i>
<i>Recitation 3</i>	<i>Thu, 1/19</i>	<i>Review 3D force systems (using x-y-z components)</i>
<i>Lecture 10</i>	<i>Fri, 1/20</i>	<i>Review for Midterm Exam 1</i>

## **Week 4**

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<i>Lecture 11</i>	<i>Mon, 1/23</i>	<i>Review for Midterm Exam 1</i>
<i>Recitation 4</i>	<i>Tue, 1/24</i>	<i>Review 3D force systems (using vectors)</i>
Lecture 12	Wed, 1/25	Free Lecture (online)
Lecture 13	Thu, 1/26	Free Lecture (online)
<b>Exam 1</b>	<b>Fri, 1/27</b>	<b>in class (Project 2 assigned)</b>

## **Week 5**

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Lecture 14	Mon, 1/30	Chapter 4: Moments §4.1, §4.2, §4.3 (Moment basics)
Lecture 15	Tue, 1/31	Chapter 4: Moments §4.4 (Couples); §4.5 (Equivalent systems)
Lecture 16	Wed, 2/1	Chapter 5: Objects in Equilibrium §5.1 (2D applications) ( <b>Project 1 due</b> )
Lecture 17	Thu, 2/2	Chapter 5: Objects in Equilibrium §5.1 (2D applications) (finish), §5.2 (Static indeterminacy)
<i>Recitation 5</i>	<i>Fri, 2/3</i>	<i>Review moments and 2D applications</i>

## **Week 6**

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Lecture 18	Mon, 2/6	Chapter 5: Objects in Equilibrium §5.3 (3D applications), §5.4 (Two and three force members)
Lecture 19	Tue, 2/7	Chapter 6: Structures in Equilibrium §6.1, §6.2 (Trusses, Method of joints)
Lecture 20	Wed, 2/8	Chapter 6: Structures in Equilibrium §6.2 (Method of joints) (finish)
Lecture 21	Thu, 2/9	Chapter 6: Structures in Equilibrium §6.3 (Method of sections)
<i>Recitation 6</i>	<i>Fri, 2/10</i>	<i>Review 3D applications and method of joints</i>

## **Week 7**

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Lecture 22	Mon, 2/13	Chapter 6: Structures in Equilibrium §6.5 (Frames and machines)
Lecture 23	Tue, 2/14	Chapter 6: Structures in Equilibrium §6.5 (Frames and machines) (finish)
Lecture 24	Wed, 2/15	Chapter 7: Centroids and Centers of Mass §7.1, §7.2 (Composite areas), §7.3 (Distributed loads) ( <b>Project 2 due</b> )
Lecture 25	Thu, 2/16	Chapter 9: Friction
<i>Recitation 7</i>	<i>Fri, 2/17</i>	<i>Review method of sections</i>

## **Week 8**

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Lecture 26	Mon, 2/20	Free Lecture (online)
Lecture 27	Tue, 2/21	Free Lecture (online)
<i>Recitation 8</i>	<i>Wed, 2/22</i>	<i>Review frames and machines</i>
<i>Lecture 28</i>	<i>Thu, 2/23</i>	<i>Review for Midterm Exam 2</i>

Lecture 29    Fri, 2/24    Review for Midterm Exam 2

**Week 9**

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<u>Exam 2</u>	<u>Mon 2/27</u>	<b>in class</b>
<u>Recitation 9</u>	<u>Tue, 2/28</u>	<u>Review centroids</u>
<u>Recitation 10</u>	<u>Wed, 3/1</u>	<u>Review friction</u>
<u>Lecture 30</u>	<u>Thu, 3/2</u>	<u>Review for Final Exam</u>
<u>Lecture 31</u>	<u>Fri, 3/3</u>	<u>Review for Final Exam</u>

**Week 10**

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Lecture 32	Mon, 3/6	Free lecture (online)
Lecture 33	Tue, 3/7	Free lecture
Lecture 34	Wed, 3/8	Free lecture
Lecture 35	Thu, 3/9	Free lecture
Lecture 36	Fri, 3/10	Free lecture

**Final Exam: Wednesday, March 15, 12-2 pm**

**Grades:**

Homework Assignments: 10%;  
Projects: 10%;  
Midterm Exam 1: 15%  
Midterm Exam 2: 20%;  
Final Exam: 45%

**Homework is assigned weekly on Canvas, and is due on Canvas at 8am on Monday (unless noted otherwise). Please submit on a single PDF file (it is OK to take photos as long as they are scanned into ONE SINGLE DOCUMENT). Late homework will not be graded.**

*Northwestern University is committed to providing the most accessible learning environment as possible for students with disabilities. Should you anticipate or experience disability-related barriers in the academic setting, please contact AccessibleNU to move forward with the university's established accommodation process (e: [accessiblenu@northwestern.edu](mailto:accessiblenu@northwestern.edu); p: 847-467-5530). If you already have established accommodations with AccessibleNU, please let me know as soon as possible, preferably within the first two weeks of the term, so we can work together to implement your disability accommodations. Disability information, including academic accommodations, is confidential under the Family Educational Rights and Privacy Act.*