

Instructor: William Doney
Associate Prof. of Engineering & Physics

Email: bdoney@northampton.edu
www.WilliamDoney.com/physics

Office: KAPP 202 (Monroe Physics lab)

Office Hours (available in Kapp 202):
Before/After class. Also by appointment.

Phone: 610/861-5556

Class Section: MON/WED 9:30 – 10:45 a.m. KAPP 202

Prerequisites: PHYS 215 (Physics for Scientists & Engineers I) *with a C or better*

Required Text: *Engineering Mechanics - Statics*, Hibbeler, R. C., 14th Edition, Prentice Hall. Used is OK.
**** Online access code NOT required or needed ****

Suggested Supplies: Scientific calculator, engineering or graphing paper/tablet and straight-edge is helpful, plus your brain.

Course Description

ENGG 201 is primarily a “problem solving” course which covers vector analysis, force resultants, conditions for equilibrium in two and three dimensions, structural analysis, friction, and shear and bending moment diagrams. More generally, it is a course designed to strengthen your analytic abilities and your eye for detail by studying the equilibrium of rigid bodies in two and three dimensions using various analytical methods of engineering.

Class Schedule & Topics (week-by-week):

Week	Monday	Topics/Chapters Covered	Sections
1	1/15 (no class MON)	Ch 1 & 2 Intro, General Principles, Force Vectors	1.1-1.5, 2.1-2.3
2	1/22	Ch 2 (cont.) Vector Operations, Position Vectors	2.4-2.7
3	1/29	Ch 2 (cont.) & 3 Force Vectors, Dot Product, 2 & 3-D Equil.	2.8-2.9, 3.1-3.4
4	2/05	EXAM #1 (Chaps 1, 2, 3)	
5	2/12	Ch 4 Moment of Force, Cross Product	4.1-4.4
6	2/19	Ch 4 (cont.) Moment of a Force / of a Couple	4.5-4.7
7	2/26	Ch 4 (cont.) Force Resultants, Force & Couple Sys Reduct	4.8-4.10
8	3/05	Ch 5 Conditions for Equilibrium, Equations for Equilibrium	5.1-5.4
9	3/12 (Spring Break)	No Classes	-
10	3/19	Ch 5 (cont). EXAM #2 (Chaps 4, 5)	5.5-5.7
11	3/26	Ch 6 Trusses, Method of Joints, Frames, Int. Forces	6.1-6.3
12	4/02	Ch 6 (cont.), Ch 7 Shear & Bending Moment Diagrams	6.4-6.6, 7.1
13	4/09	Ch 7 Distributed Loads, Cables	7.2
14	4/16	Ch 7 (cont.) Distributed Loads, Cables	7.3-7.4
15	4/23	EXAM #3 (Chaps 6, 7)	
16	4/30 & 5/07 (last class)	Ch 8 Friction	8.1-8.3
	TBD	FINAL EXAM (Chaps 1-8)	COMPREHEN.

*** schedule subject to change ***

Class Agenda

Current educational research indicates that students don't learn a great deal about a subject by listening to a professor just talk endlessly about it. Therefore, only part of our class time will be spent lecturing. We'll spend time in discussing problem-solving techniques, working on example problems, discussing real-world applications, etc. The way to really strengthen your problem solving skills is to work through a lot of problems; therefore each week you will be assigned a set of homework problems. There will also be a quiz or two EACH WEEK two (usually after completing a topic) on the material from the previous class/week.

Students and instructor are all considered mutual learners. The life experiences of the students are to be respected. The sharing of those experiences as they relate to the subject of the course is not only welcomed, it is encouraged. Questions are also welcome; what we can't answer we will seek to answer together. We will take class 'breaks' as needed.

Additional class time may be scheduled if the semester schedule is interrupted by excessive snow days, holidays, etc.

Attendance Policy

- Attendance is expected of all students.
- **ALWAYS** check email before coming to class, in case there is a change due to weather or other
- If you are sleeping or doing something other than statics, you will be asked to leave. Security will be called if you need help 'leaving'.
- The Dean of Students will handle any disciplinary issues.
- Please arrive on-time. Your participation is important. Should you arrive late, you might not be given credit for attendance or miss the weekly quiz. Also, the door will be closed once the class begins. If you arrive and the door is closed & locked, you will need to wait until the class break to come in. Also, once the door is closed, any assignments due that day are considered late and will not be accepted.
- If you miss more than two weeks of class meetings without contacting the instructor with a valid excuse (see section *Missed Lecture, ...*), NCC may withdraw you from the class in accordance with policy.
- **You are responsible** for any assignments missed during your absence (excused or unexcused). You should contact a fellow classmate to obtain any class notes or assignments that you missed.

Course Grading

I do not calculate grades until after the final exam. If you need to know 'where you stand' then use the free Excel File on my "student" website page to ballpark your grade current grade.

EXAMS - 60%

- 3 Exams - cover both in-class material and homework.

QUIZZES, MISC ASSIGNMENTS - 10%

FINAL EXAM - 30%

- comprehensive

FINAL GRADES: Grading scale may be lowered, but not raised.

A	94 -100	B-	80 - 82	D	65 - 69
A-	90 - 93	C+	77 - 79	F	< 65
B+	87 - 89	C	70 - 76		
B	83 - 86				

Notes: *if you fail 3 of the 4 exams, the highest grade you can receive is a C, no matter your final avg. if your first three exam avg = "F" and you fail the final, you will receive an "F" no matter your final average*

Reading Assignments

Other than for the first class session, reading assignments should be completed *before* each class session which deals with the subject matter. Reading the material beforehand will greatly enhance your comprehension during lecture.

Schedule of Examinations and/or Quizzes:

The dates and the material covered for examinations are listed in the weekly class schedule. Because of the nature of the course, all tests may be comprehensive. Unannounced quizzes may be given at any time.

Missed Lecture, Exams and Quizzes

- Give **advance notice** if you know you're going to miss an exam or class (travel, work, etc.). You must contact the instructor directly (via phone or email) **prior to the start of the exam or lab**.
- If it is a medical excuse (sick, doctor's appt, etc), you must bring a written excuse from the doctor to the next class showing you were under the doctor's care *during that time period*.
- If your excuse is 'car trouble', a copy of the service repair bill must be presented at the next class.
- If your excuse is weather related, you must STILL email me to let me know.
- No assignments will be accepted late, or makeup exams given without written doctor's note or repair bill.
- If approved, MAKE-UP TESTING will done during the **next** class period following the regular exam in the Library. Makeup exams will NOT contain the same problems as the missed exam, and may be harder. You will need to present your picture-id (e.g., driver's license) to take your exam.
- Once you begin an exam, you must complete it. You cannot leave and come back another time or day.
- Quizzes will be given at the BEGINNING of class in the first 10 minutes. No makeup quizzes.

Availability of Additional Information

List of recommended homework problems, homework solutions, physics topical videos, course handouts, lecture notes, and other documents are available online via my faculty web page at www.WilliamDoney.com/physics. No hardcopies will be given out after the first class. Access the our class web page by selecting "ENGG 201". You'll need Acrobat reader on your PC to view and print these documents. Solutions to textbook problems are available in our course within Blackboard.

Academic Integrity Policy (dishonesty, plagiarism, ...)

Academic dishonesty or plagiarism will not be tolerated! Anyone caught as a 'doer' or as a 'willing accomplice' will automatically receive a 0 (zero) grade for the exam or assignment. If the incident happens again, you will receive an F for the course and will be subject to the college's disciplinary action for such offenses. Please note NCC's policy on academic dishonesty. Also, *WHEN TAKING EXAMS: turn off and put away all electronic devices before an exam and do not use them until you have submitted the completed exam. Their very presence will be considered prima facie evidence of cheating and will result in a zero.*

Homework Assignments, Misc.

- Suggested homework problems (see list) are not collected or graded. But it is to you benefit to do these problems, as it is the only way to really know what you know and learn to solve problems.
- On occasion, homework may be assigned, which is due one week following the class it is assigned, at the **beginning** of class. Late submissions will not be accepted and will receive a zero.
- You may work together on assigned homework, but it must be obvious to the instructor that the material you hand-in is your own.
- The instructor is not responsible for missed assignments due to the student not having the textbook.
- Please do not wait until the day before an exam to try and learn this stuff – it won't work. Get help as soon as possible - from another student, the learning center, or stop by to see me (email first). I'm more than happy to work on problems with you.
- All communication with students outside of class will be done through email to the email address in NCC's SpartanNet system. It is the student's responsibility to check email. Even if you leave a message, I reserve the right to email you a response. Note that I only return calls during my regular office hours. Emails must include a subject, a salutation (Dear Prof. Doney, Mr. Doney, Professor Doney, etc... not "Hey..."), a useful email body – asking a clear question or providing information, and ending with your name. Any email received that does not include, at a minimum the above, or is highly

informal, may not be answered or may be returned asking for corrections per the above. Using your phone to send emails is not an excuse to be lazy and not follow these instructions.

-
- If an issue arises, this syllabus will be used as the final word in resolving the issue.
- All corrected exams, quizzes, or other assignments will be recycled on the day of the final.
- Students have one week to discuss the expectations in this syllabus, after that it will be considered "law".

Recommended Homework Problems

Hibbeler *Engineering Mechanics – Statics*14th Edition

Answers available in the back of the text. Publisher solutions are online in Blackboard

CHAPTER SECTION	PROBLEM #s
1	2, 5, 7, 14, 17
2.1 – 2.3	1, 5, 11, 15, 17, 23, 27, 29
2.4 – 2.7	33, 38, 46, 62, 65, 69, 78
2.8 – 2.9	93, 96, 100, 105, 115, 127, 133
3.1 – 3.4	2, 9, 14, 17, 29, 45, 49, 62, 76
4.1 – 4.4	5, 10, 14, 19, 25, 34, 41
4.5 – 4.7	49, 54, 63, 71, 78, 85, 101, 105, 109
4.8 – 4.9	115, 126, 133, 139, 145, 155, 161, 171
5.1 – 5.3	3, 5, 9, 11, 14, 19, 27
5.4 – 5.7	49, 62, 65, 70, 74, 78, 81
6.1 – 6.3	1, 6, 9, 15, 18, 22, 26
6.4 – 6.6	27, 34, 41, 47, 51, 66, 71, 78, 94
7.1	2, 7, 14, 19, 25, 28, 29, 43
7.2	47, 53, 57, 59, 63, 66
7.3 – 7.4	71, 77, 82, 85, 91, 95, 97, 101
8.1 – 8.3	2, 5, 9, 15, 23, 34, 45, 49

ENGG 201

* FILL OUT AS MUCH AS YOU ARE COMFORTABLE AND BRING TO THE FIRST DAY OF CLASS *

By signing below, I confirm that I received a copy of the syllabus. I also will not hold the instructor responsible for my having to "take this class" or for any of the laws of physics. I am taking this course as a responsible adult and understand that I may experience extreme intellectual growth and gain boat-loads of knowledge, thereby becoming a much smarter, life-long productive, and more interesting person.

Print Name: _____ Signature: _____

Date: _____ Section: _____

VOLUNTARY INFORMATION

What is your major? _____

I have taken: Calc 2 _____ with instructor: _____ Calc 3 _____ with: _____

I have taken: PHYS 215 _____ with instructor: _____ My Grade was: _____

If you have a job, what do you do? _____ # of hours per week: _____

Do you know anyone that has taken my before? (circle one) NO YES who? _____

What did you like about your favorite teacher's teaching style: _____

What did you dislike about your least favorite teacher's teaching style: _____

How do you learn new things? _____ watch/visual _____ listen _____ read _____ hands-on

List any hobbies, sports, activities you enjoy: _____

Something I've always wanted to know is: _____

I believe UFO's / Aliens / Life on other planets exist: (circle one) YES NO POSSIBLE

Game platform of choice?: (circle one) Xbox Wii Playstation Pinball None

Is there is life after death?: (circle one) YES NO MAYBE

Something you could not live without is: _____

If I could go anywhere it would be to: _____

If I was President of the USA, I would: _____

If stuck on a deserted island I would want: _____

If I hit the lottery tonite, I would: _____

If you want to be an engineer, why?: _____

And what 'kind' of engineer? _____