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| **Department of Engineering**  **Division of Architecture, Engineering & Technology**  **West Campus Building 9, Room 140 (407)-582-1902/1903**  **[http://www.valenciacc.edu/west/engineering (Links to an external site.)Links to an external site.](http://www.valenciacc.edu/west/engineering" \t "_blank)                   Session:  SPRING 2019 Course syllabus for EGN-2312, Engineering Analysis Statics,  CRN: 22982**  **Catalog Course Description:** **Fundamental concepts of mechanics, including** **resultants of force systems, free-body diagrams,** **equilibrium of rigid bodies and analysis of structures.3 Credit Hours, 3 Contact Hours.**  **Prerequisites: MAC-2311, PHY 2048C. Co-requisite: MAC 2312.**  **Class time and Location: CRN 13435: Bldg 11-room 236, Tuesday: 0700-0845**  **Recitation times: If in 22982 class, then recitation is Thursday from 7:45 to 8:45AM.**  **If in 26670 class, the recitation is Thursday from 0845 to 0945AM.**  **Required** Recitation day/time: Thursday 0845-0945 .**You will fail the class if you miss more than 3 recitation classes**. | |
| **Text:** | *Engineering Mechanics-Statics*  by R.C. Hibbeler, 14th edition,  WITH MASTERINGENGINEERING CODE, Publisher: Prentice Hall  ISBN: 13 :978-0-13-422828-0 (student to verify that this has masteringengineering code available) **Note**: If you buy a used text; you will have to pay to register for mastering engineering website access separately (Pearson Publishing) |
| **Instructor Information** |  |
| **Name:** | Henry C. Regis, P.E. |

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| **Office:**West Campus, 11-260 | |
| **Phone:** | 407-582-1218 |
| **E-mail:** | hregis@valenciacollege.edu |
| **Office hours:** | Monday:      7:00 AM – 8:30 AM and 10 :00 AM - 11 :30 AM  Tuesday :      11 :30 AM – 12 :30 PM  Wednesday : 7 :00 AM- 8 :30 AM and 10 :00-11 :30 AM    Thursday:          7:00 AM – 8:30AM.  Friday **:       Virtual** (e mail, phone)   8 :00 AM – 9:30 AM |
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| **Student Performance Assessment:** |  |
| Tests (2)                                                 30% |  |
| Quizzes                                                  30%  Homework Assignments:                         10% |  |
| Final:                                                       30% |  |
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| **Grading:** |  |
| 90 - 100% = A |  |
| 80 - 89% = B |  |
| 70 - 79% = C |  |
| 60 - 69% = D |  |
| 0 - 59% = F |  |

**Notes:**

**The Syllabus and Course outline may be changed by notice from the instructor.**

1. Assignments will be due **at the beginning**of the class on **mastering engineering website (course ID is MEREGIS22982).  All assignments will be from the mastering engineering web site. There is a learning curve with the website. Spend some time going to the help sections BEFORE you submit your work.**
2. **No Make-up for tests/quizzes, EVER (including medical/emergency reasons), ( before scheduled time OK if proper notice given and agreed to by the Instructor)**.
3. Will drop lowest (or missed) quiz grade.
4. **You are REQUIRED to use 8**.**5 X 11 paper for all assessments(quizzes, test, X-credit work).**
5. **The Final Exam is required and you will receive an F if you miss it**.  If you miss one test, it will not count as a zero but your final will count an increased amount to compensate. Missing two tests will be cause for withdrawal. Missing one test and 2 quizzes will be cause for withdrawal.
6. **More than three unexcused absences and you may be withdrawn from the class up to March 22nd (advance**notice of absence if possible is appreciated).
7. **Withdrawal Deadline: 22 March** **. (No one will be dropped after withdrawal deadline)**
8. **Refund/drop deadline: 16 January.**
9. Classroom behavior will be governed by the "Student Code of  Conduct".
10. Changes in syllabus and/or schedule may be made at any time (in writing).
11. Missing any combination of 2 tests/quizzes will be cause for withdrawal. **Lowest/missed quiz will be dropped.** No tests will be dropped.
12. It is the student's responsibility to find out what was covered in class if absent.
13. **Accomplishment of Homework is key**to succeeding in this class. Work as many problems as possible from scratch. DO NOT JUST READ PROBLEM SOLUTIONS.
14. Check your atlas account regularly for e-mails from instructor , **also use**[**hregis@valenciacollege.edu**](mailto:hregis@valenciacollege.edu) **for any e-mail correspondence** (not blackboard).
15. **Turn off/put away cellular phones before entering the classroom. Do not leave the classroom to answer cell calls unless absolute emergency. Do not text in class.**
16. **It is required that cel phones be OFF during quizzes and tests. Failure to do so may result in an F for the exam.**
17. **Showing up 15 minutes late or more from class will count as an absence and leaving prior to the end of class (unless agreed to in advance by the instructor) will count as  an absence.**
18. **Per Valencia 4-07 (Academic Progress, Course attendance and Grades, and Withdrawals), a student who withdraws from class before the withdrawal deadline will receive a grade of “W”. A student is not permitted to withdraw after the withdrawal deadline. I WILL NOT WITHDRAW YOU AFTER THE WITHDRAWAL DEADLINE.A student who is withdrawn by faculty for violation of the class attendance policy will receive a grade of “W”. Any student who withdraws or is withdrawn from a class during a third or subsequent attempt in the same course will be assigned a grade of “F”. For a complete policy and procedure overview on Valencia Policy 4-07 please go to:http://valenciacc.edu/generalcounsel/policydetail.cfm/recorded=75.**
19. **Quizzes will be announced with a week notice minimum. Tests with a 2 weeks notice.**
20. **An Engineering course requires more time spent on the material between classes on your own, so plan accordingly in order to be successful.**
21. **It is prohibited to have cellular phones  on (even in text mode) during quizzes or tests (unless discussed in advance with instructor for an emergency)**

**Course learning outcomes:**

* Student will be able to demonstrate an understanding of the meaning of Mechanics.
* Student will be able to demonstrate an understanding of what fundamental concepts will apply to the principles of Statics.
* Student will be able to demonstrate knowledge of units to be used in the study of Statics.
* Students will be able to perform cross product and dot product operations associated with force vectors.
* Student will be able to demonstrate ability to reduce a force vector into component vectors in two and three dimensions.
* Student will be able to demonstrate ability to perform a mixed triple product
* Student will be able to distinguish between different types of forces
* Student will be able to draw a Free Body Diagram for a Free Body in equilibrium showing all forces causing equilibrium
* Student will be able to define forces in both two and three dimensions which cause equilibrium of a particle or object
* Student will learn how to calculate moments about a point in two dimensions
* Student will learn how to calculate moments about a point in three dimensions
* Student will be able to define and calculate a moment due to a couple
* Student will learn how to calculate moment about a line using mixed triple product
* Student will be able to replace a system of two forces with an equivalent system of a force and a couple.
* Student will be able to replace a system comprised of a force and a couple with a single force system
* Student will be able to calculate the first moment of area to determine the centroid of an object
* Student will be able to determine the centroid of a composite shape by using the first moment of area concept
* Student will demonstrate ability to obtain forces in straight two forces members of a truss using the Method of Joints
* Student will demonstrate ability to calculate the forces in straight two force members of a truss by using the Method of Sections
* Student will be able to calculate the forces at connections of a frame by using the dismembering technique
* Student will be able to use the parallel axis theorem to calculate moments of inertia of area for various shapes
* Student will be able to define moments of inertia of area about rotated and principal axes.
* Student will be able to calculate the reaction forces on beams subjected to concentrated loads and distributed loads
* Student will be able to demonstrate ability to determine the maximum shear and maximum bending moments on beams
* Student will be able to demonstrate knowledge related to drawing shear and bending moment diagrams with maximum shear and maximum moment values.
* Student will be able to calculate loads and reactions on cables subjected to concentrated loads and distributed loads

**I am here to help! Get help early if you are struggling with the concepts.**

**Course Outline: A Guideline Subject to change at Professor’s discretion; Tests/Quizzes dates TBA**

**Week of :**

             **Topics**                                    **Chapter**

                                1/7          Force vectors                                                              2, 3

                                 1/14            Equilibrium of particle.                                                3

                                              Force system Resultants                                           4

                                1/21               Equilibrium of a Rigid Body                                      5

                                1/28              Free body diagrams                                                    5

                                2/4             StructuralAnalysis                                                  6

                                2/11                Internal Forces                                                           7

                               2/18             Internal Forces/Centroids                                            9

                               2/25            Centroids                                                                      9

                               3/4               Centroids

3/18   Moment of Inertia                                                    10

                               4/1   Moments of Inertia 10

4/8    Products of Inertia, Principal axes, Imax,Imin                  10

**4/15      Friction, review  for final                                          6,7,8,9,10**

**4/22       Final that week (Exact day :Tuesday 4/23 at 7 AM)**