

## Center of Excellence – ENGINEERING

## John Vasselli, Director

**ENGR 1201-0037 - Introduction to Engineering Fall 2016**

CRN 12857 | Alief Hayes - Rm B219 |2:00 PM, Mondays |16 weeks

2 credit-hour lecture course / 32 contact hours per semester

## Instructor: Haitham Abdelmoaty

**Instructor Contact Information**:

haitham.abdelmoaty@hccs.edu

Or 832-815-2916 and leave a message.

If you email me you must put the Course (ENGR 1204), the CRN, and the day of the week the course meets in the Subject Line.

***EMAILS SENT FROM NON-STUDENT EMAILS WILL BE DELETED WITHOUT BEING READ.***

## Office location and hours:

Please feel free to contact me concerning any problems that you are experiencing in this course. You do not need to wait until you have received a poor grade before asking for my assistance. Your performance in my class is very important to me. I am available to hear your concerns and just to discuss course topics. Feel free to contact me to arrange an appointment to meet.

**ACGM Course Description:** An introduction to the engineering profession with emphasis on technical communication and team-based engineering design.

## Course Intent:

ENGR 1201 is a required course for students following the Associate of Science in Engineering Science (ASES) degree plan. The material taught in this course introduces students to the basic skills and requirements necessary to obtain a degree in engineering.

## Pre-requisites

Must qualify to take MATH 2413 Calculus or co-enroll in MATH 2412 Precalculus as a co-requisite.

## ACGM Learning Outcomes:

1. Describe the engineering profession and engineering ethics, including professional practice and licensure.
2. Use technical communication skills to explain the analysis and results of introductory laboratory exercises in

engineering and computer science.

1. Explain the engineering analysis and design process.
2. Analyze data collected during laboratory exercises designed to expose students to the different engineering

disciplines.

1. Describe the impact engineering has had on the modern world.
2. As part of a team, design a simple engineering device, write a design report, and present the design.
3. Demonstrate computer literacy.

## Student Learning Outcomes: The student will be able to

1. Explain the engineering profession, engineering ethics, and the engineering disciplines.
2. Communicate technical information via written, oral, and visual communication skills.
3. Explain the engineering design and analysis process.
4. Demonstrate computer literacy with the use of simple algorithmic forms and software for data analysis.
5. Participate in a team design project including a report and presentation.
6. Describe the impact of engineering on modern society.

**Instructional Methods**

ENGR 1201 is a required course for all pre-engineering majors.

As an instructor, I want my students to be successful. I feel that it is my responsibility to provide you with knowledge concerning the field of engineering, modeling good teaching and learning strategies, and organizing and monitoring the design project that allows you to connect the information that you learn in this course to the real world of engineering.

As a student wanting to learn about the field of engineering, it is your responsibility to read the textbook, submit assignments on the due dates, study for the exams, participate in classroom activities, attend class, and enjoy yourself while experiencing the real world of a college education. The skills learned in this class are important keys to success**. The keys to success are EFFORT, APPROACH and ATTITUDE.**

As I believe that engaging the students in the learning is essential for teaching to be effective, you will spend the majority of class time involved in collaborative activities. You will be involved in discussions with your classmates and your instructor. As you will want to contribute to these discussions, you will need to come to class prepared to discuss, analyze and evaluate information from your text and other assigned readings.

## Student Assignments

Assignments have been developed that will enhance your learning. To better understand a topic, you will be given assignments on key information that you will need to remember for your success in your career as an engineer and a college student.

## In the world of engineering (or almost any professional field), it is imperative that you submit reports, plans or required paperwork on time, thus I require you to submit your written work on the due dates. Late written work will not be accepted.

Detailed assignment instructions will be given in class. Students will be required to successfully complete the following:

Mid-Term written examination covering a portion of the text and materials presented in class

Certain other written assignments

Chapter summaries of selected Chapters and reviews of Technical Journal Articles

A wide variety of in-class and out-of-class assignments and readings and exercises

Team project (You must get a least a 70% on this to pass this course)

Individual research project on a field of Engineering presenting results to class in PPT format

Final exam covering selected chapters of the textbook and materials presented in class (you must take the final to pass this course).

## Assessments (none of these are optional)

Mid-Term: 15%

Final: 15%

Individual Project: 15%

Technical Journal Review: 10%

Team Project: 35%

Attendance: 10%

## PLEASE NOTE THAT THE LAST DAY OF INSTRUCTION IS:

**Monday May 1th 2017**

**No work may be submitted after this date.**

**FINAL EXAM:**

**Thursday May 8th 2016 at the regular class time and location.**

**Instructional Materials**

Textbook: *Exploring Engineering: An Introduction to Engineering and Design. 4th Ed. Kosky, Balmer, Keat & Wise. ISBN 978-0-12-081242-0.*

## Additional Materials: Students are encouraged to use additional outside references.

You need something to keep your papers, notes, study papers, etc. organized. Any method is fine with me, just be able to get at the materials quickly.

You need a programmable calculator TI-82 or higher. You may not use your cell phone as a calculator.

**Supplemental Materials**: Will be provided by the professor at each class period.

## EGLS3 – Evaluation for Greater Learning Student Survey System

At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and division chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term.

**Student Handbook:** Students are responsible to adhere to all policies outlined in the *HCC Student Handbook.* The link is<http://www.hccs.edu/continuing-education/students/student-handbook/>

## HCC Policy Statement - ADA

Services to Students with Disabilities

Any student with a documented disability (e.g. physical, learning, psychiatric, developmental, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Support Services (DSS) Counselor at the beginning of each semester. Faculty members are authorized to provide only the accommodations requested by the DSS office. The link is at <http://www.hccs.edu/district/students/disability-services> . Click on “Meet the staff” to obtain contact information on all ADA counselors.

## HCC Policy Statement – Sexual Harassment

HCC shall provide an educational, employment, and business environment free of sexual harassment. Sexual harassment is a form of sex discrimination that is not tolerated at HCC. Any student who feels that he or she is the victim of sexual harassment has the right to seek redress of the grievance. HCC provides procedures for reviewing and resolving such complaints through its Grievance Policy. Substantiated accusations may result in disciplinary action against the offender, up to and including termination of the employee or suspension of the student. In addition, complainants who make accusations of sexual harassment in bad faith may be subject to equivalent disciplinary actions.

## HCC Policy Statement – Title IX

TITLE IX OF THE EDUCATION AMENDMENTS OF 1972, 20 U.S.C. A§ 1681 ET. SEQ.

Title IX of the Education Amendments of 1972 requires that institutions have policies and procedures that protect students’ rights with regard to sex/gender discrimination. Information regarding these rights are on the HCC website under Students-Anti-Discrimination. Students who are pregnant and require accommodations should contact any of the ADA Counselors for assistance.

It is important that every student understands and conforms to respectful behavior while at HCC. Sexual misconduct is not condoned and will be addressed promptly. Know your rights and how to avoid these difficult situations.

Log in to: [www.edurisksolutions.org](http://www.edurisksolutions.org/) . Sign in using your HCC student e-mail account, then go to the button at the top right that says Login and enter your student number.

## HCC Policy Statement: Academic Honesty

A student who is academically dishonest is, by definition, not showing that the coursework has been learned, and that student is claiming an advantage not available to other students. The instructor is responsible for measuring each student's individual achievements and also for ensuring that all students compete on a level playing field. Thus, in our system, the instructor has teaching, grading, and enforcement roles. You are expected to be familiar with the University's Policy on Academic Honesty, found in the catalog. What that means is: If you are charged with an offense, pleading ignorance of the rules will not help you. Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Penalties and/or disciplinary proceedings may be initiated by College System officials against a student accused of scholastic dishonesty. “Scholastic dishonesty”: includes, but is not limited to, cheating on a test, plagiarism, and collusion.

Cheating on a test includes:

* Copying from another students’ test paper;
* Using materials not authorized by the person giving the test;
* Collaborating with another student during a test without authorization;
* Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of a test that has not been administered;
* Bribing another person to obtain a test that is to be administered.

Plagiarism means the appropriation of another’s work and the unacknowledged incorporation of that work in one’s own written work offered for credit.

Collusion mean the unauthorized collaboration with another person in preparing written work offered for credit. Possible punishments for academic dishonesty may include a grade of 0 or F in the particular assignment, failure in the course, and/or recommendation for probation or dismissal from the College System. (See the Student Handbook)

In simplified terms, cheating is: (1) taking unchanged passages (or slightly edited) from another person's wok and editing and portraying them as one's own; (2) submitting a paper that includes paraphrases of another person's writing without giving credit; (3) having someone else write your paper for you; (4) copying or using another person's work during in-class writing or testing; and (5) the unauthorized use of electronic devices during in-class writing or testing.

Keep in mind also that whether you are cheating or not, not following testing or writing rules properly, such as communicating with your neighbor or using a cell phone during a test will be construed as cheating. This is not an exhaustive list of the forms of scholastic dishonesty. If you are in doubt, consult your instructor.

## HCC Policy Statements

*Class Attendance - It is important that you come to class!* Attending class regularly is the best way to succeed in this class. Research has shown that the single most important factor in student success is attendance. Simply put, going to class greatly increases your ability to succeed. You are expected to attend all lecture and labs regularly. You are expected to participate in outside class activities. You are responsible for materials covered during your absences. Class attendance is checked daily. Although it is your responsibility to drop a course for nonattendance, the instructor has the authority to drop you for excessive absences.

If you are not attending class, you are not learning the information. As the information that is discussed in class is important for your career, students may be dropped from a course after accumulating absences in excess of 12.5% hours of instruction. The six hours of class time would include any total classes missed or for excessive tardiness or leaving class early. If you are more than 15 minutes late to class, the instructor reserves the right to mark you absent for the entire class period.

Attendance sign-in. Students are responsible for signing in at each class period. Sign in sheet will circulate at the beginning of class. Once the sign in sheet returns within the first 30 minutes of class, no additional sign in will be allowed.

## STUDENTS WHO MISS MORE THAN 4 HOURS CUMULATIVE SHOULD EXPECT TO RECEIVE A COURSE GRADE OF “F.” TARDIES COUNT TOWARDS THE TOTAL ABSENCES.

This reflects the 12.5% attendance policy addressed in the student handbook for this 2-credit, 32-hour course.

If some unavoidable situation arises which causes you to miss class, then please keep me advised. Please be on time for class. Leaving class during the lecture is inconsiderate to others and will not be tolerated. Class starts promptly.

You may decide NOT to come to class for whatever reason. As an adult making the decision not to attend, you do not have to notify the instructor prior to missing a class. However, if this happens too many times, you may suddenly find that you have “lost” the class.

Poor attendance records tend to correlate with poor grades. If you miss any class, including the first week, you are responsible for all material missed. It is a good idea to find a friend or a buddy in class who would be willing to share class notes or discussion or be able to hand in paper if you unavoidably miss a class.

Class attendance equals class success. **Certain assignments will be done ONLY in class and cannot be made up**.

## HCC Course Withdrawal Policy

If you feel that you cannot complete this course, you will need to withdraw from the course prior to the final date of withdrawal. Before, you withdraw from your course; please take the time to meet with the instructor to discuss why you feel it is necessary to do so. The instructor may be able to provide you with suggestions that would enable you to complete the course. Your success is very important. Beginning in fall 2007, the Texas Legislature passed a law limiting first time entering freshmen to no more than **SIX** total course withdrawals **throughout** their educational career in obtaining a certificate and/or degree.

To help students avoid having to drop/withdraw from any class, HCC has instituted an Early Alert process by which your professor may “alert” you and HCC counselors that you might fail a class because of excessive absences and/or poor academic performance. It is your responsibility to visit with your professor or a counselor to learn about what, if any, HCC interventions might be available to assist you – online tutoring, child care, financial aid, job placement, etc. – to stay in class and improve your academic performance.

If you plan on withdrawing from your class, you **MUST** contact a HCC counselor or your professor prior to withdrawing (dropping) the class for approval and this must be done **PRIOR** to the withdrawal deadline to receive a “W” on your transcript. \*\*Final withdrawal deadlines vary each semester and/or depending on class length, please visit the online registration calendars, HCC schedule of classes and catalog, any HCC Registration Office, or any HCC counselor to determine class withdrawal deadlines.

***Remember to allow a 24-hour response time when communicating via email and/or telephone with a professor and/or counselor. Do not submit a request to discuss withdrawal options less than a day before the deadline.*** If you do not withdraw before the deadline, you will receive the grade that you are making in the class as your final grade.

**Repeat Course Fee**

The State of Texas encourages students to complete college without having to repeat failed classes. To increase student success, students who repeat the same course more than twice, are required to pay extra tuition. The purpose of this extra tuition fee is to encourage students to pass their courses and to graduate. Effective fall 2006, HCC will charge a higher tuition rate to students registering the third or subsequent time for a course. If you are considering course withdrawal because you are not earning passing grades, confer with your instructor/counselor as early as possible about your study habits, reading and writing homework, test taking skills, attendance, course participation, and opportunities for tutoring or other assistance that might be available.

## Classroom Behavior

As your instructor and as a student in this class, it is our shared responsibility to develop and maintain a positive learning environment for everyone. Your instructor takes this responsibility very seriously and will inform members of the class if their behavior makes it difficult for him/her to carry out this task. As a fellow learner, you are asked to respect the learning needs of your classmates and assist your instructor achieve this critical goal.

Attendance is strongly recommended. It is the rare student who can learn material on their own and do well in a class they do not attend. For the benefit of your fellow classmates and me, please refrain from regularly arriving late to class or leaving early. In addition, please do not disturb the class with pagers, phones, or conversation with your fellow students during class. Needless to say, this is extremely distracting and rude to others and the instructor.

In addition, it is *common courtesy* if you need to leave a “meeting” early, you notify the “manager” who is conducting the meeting and you sit close to the exit door. You also will be expected to go to the restroom, get a drink, return phone messages, etc. before you enter the “meeting”, so please begin practicing these behaviors now before you enter the “real life classroom”, ie. the workplace.

Regularly violating these common courtesy rules will detract from your final grade in the class.

## Use of Camera and/or Recording Devices

As a student active in the learning community of this course, it is your responsibility to be respectful of the learning atmosphere in your classroom. To show respect of your fellow students and instructor, you will turn off your phone and other electronic devices, and will not use these devices in the classroom unless you receive permission from the instructor.

Use of recording devices, including camera phones and tape recorders, is prohibited in classrooms, laboratories, faculty offices, and other locations where instruction, tutoring, or testing occurs. Students with disabilities who need to use a recording device as a reasonable accommodation should contact the Office for Students with Disabilities for information regarding reasonable accommodations.

## Instructor Requirements

As your Instructor, it is my responsibility to**:**

* Provide the grading scale and detailed grading formula explaining how student grades are to be derived
* Facilitate an effective learning environment through class activities, discussions, and lectures
* Description of any special projects or assignments
* Inform students of policies such as attendance, withdrawal, tardiness and make up
* Provide the course outline and class calendar which will include a description of any special projects or assignments
* Arrange to meet with individual students before and after class as required

To b e succ es sful in this c las s, it is the student’s re sponsibilit y to **:**

* Attend class and participate in class discussions and activities
* Read and comprehend the textbook
* Complete the required assignments and exams
* Ask for help when there is a question or problem
* Keep copies of all paperwork, including this syllabus, handouts and all assignments
* Complete the final team project with a 70% score
* Complete all assignments including the final exam

## Program/Discipline Requirements

The final team project is a requirement of ENGR 1201. The project is essential in your deciding if engineering is the right career path for you. The project also reinforces what you are learning in class by connecting theory to the real world of engineering. This assignment is very important and as such, it must be completed with 70% of possible points or you will not receive a passing grade in this class.

## Grading

The professor will conduct quizzes, exams, and assessments that you can use to determine how successful you are at achieving the course learning outcomes (mastery of course content and skills) outlined in the syllabus. If you find you are not mastering the material and skills, you are encouraged to reflect on how you study and prepare for each class. I welcome a dialogue on what you discover and may be able to assist you in finding resources on campus that will improve your performance.

The final course average will be computed using the following scale.

AVERAGE GRADE

90% < Final Average <100% A

80% < Final Average <90% B

70% < Final Average <80% C

60% < Final Average <70% D

Final Average < 60% F

## Grading Percentages:

Mid-Term Exam (15%)

Final Exam (15%)

Team Design Project (35%)

Journal Review (10%)

Individual Project (15%)

Attendance (10%)

**Cell Phones and Other Electronic Devices:** Please turn phones off or put them on vibrate mode. Listening devices, i.e., ipods, MP3's, etc. are to be stored away during class time. Text messaging is not allowed during class as it can be distracting to other students. **Abusers will be asked to leave class and marked absent.** Absences will effectively lower your course grade.

## Basic Competencies:

**Reading**: The student is expected to read his/her textbook before he/she comes to class. Read the sections which will be covered in class and other references and web links.

**Writing**: The writing is expected to be at a college level with solid content and in accordance with the structure presented in class.

**Speaking**: The student should be prepared to present material, participate in class discussions and activities at every class period in a clear and concise manner.

**Listening**: The student is responsible for any material presented in class during lectures.

**Critical Thinking**: Application problems are an integral part engineering. You will be asked to solve problems with deeper layer(s) or reasoning and understanding.

**Computer Literacy**: Students must have access to computer outside of class to use for assignments. A portion of this class is conducted online in the Canvas Learning System. Certain assignments will be conducted only In CANVAS. Students must have an email that they check regularly that is linked to the college email system. Students are also responsible for checking CANVAS on a regular basis for updates, new assignments, changes, etc. The professor will not send both an email and post in CANVAS.

**Testing Policy:** On written days the lecture and activities will be given the first two-thirds of class and the test will be given the last one-third of class. This way if a student needs extra time to finish the test, this will not conflict with the time needed for the lecture. Students are not permitted to leave the room and return once the test paper has been administered. On non-multiple choice items, partial credit will be given for correct work only, and the amount of partial credit awarded will be determined by the instructor. There will be no make-up tests under any circumstances.

**Calculator Policy**: A programmable calculator is required. Cell phones may NOT be used as a calculator.

**Right to modify this Syllabus**: The instructor reserves the right to modify this syllabus at any point in the course. Modifications will be announced in class and/or posted on CANVAS or via email.

M**edical Conditions:** If you have some medical condition that will affect your attendance and participation in this class, please let me know as soon as possible. Sit in the class where you can exit quickly if necessary.

## Computer Stuff/Useful Stuff:

[www.hccs.edu](http://www.hccs.edu/) is the campus website. If you get lost, then simply click on the Golden Eagle to return to the main page. To access the different systems, go to the main page, then click on Student Sign-Ins in the upper right (next to the gold magnifying glass).

W number. Very important. This is your 9 digit student ID number prefaced with the letter “W”. It gets you in to email, the student system, and Eagle online. I cannot reset your password. ***Tech support to reset your password is 713-718-8800***. When you call, make sure you are in front of a computer and that you have your W#, your birthday, and something to write down your temporary password. Your W number/password lets you access your student email, the student system, and the online learning systems (CANVAS).

**PeopleSoft/Student System Sign In**: This takes you to the part where you add/drop classes, find your grades, examine your financial aid, etc. The professor uses this system to take attendance, send emails, and post your final grade.

**Student Email**: You need to access your student email ASAP. All information sent from the college and from me will go to your student email. If you are having login problems, call 713-718-8800. I only accept emails from this student email accounts, not from your personal account.

**Learning Web:** This link takes you where you can search by faculty name or subject and find the course syllabi plus the faculty vitae. This is useful when you are deciding which professor to sign up for.

**Upswing**: Free asynchronous tutoring in all subjects. <https://hccs.upswing.io/> You pay for this in your fees, use it!

**Tutoring:** A schedule for Engineering in-person free tutoring will be available by the 3rd week of classes.

**Contacts:** The Director Center of Excellence Engineering is Mr. John Vasselli.

## TENTATIVE SCHEDULE 16 week Classes:

Week 1: Chapter 1: Introduction to Engineering, definition and ethics. Project discussion and team selection.

Week 2: Chapter 2: Elements of Engineering Analysis. Specific Aims due.

Week 3: Chapter 19: Introduction to Engineering Design.

Week 4: Chapter 20: Design Teams. Journal Article Review 1 topic title due by email.

Week 5: Chapter 21: Defining the Problem.

Week 6: Chapter 22: Generation of Alternative Concepts. Journal review 1 is due.

(Peer reviewed Journal source <http://www.omicsonline.org/free-journals.php>)

Week 7: Midterm

Week 8: Chapter 23: Evaluation of Alternatives and Selection of a Concept.

Week 9: Chapter 24: Detailed Design. Journal Article Review 2 topic title due by email.

Week 10: Chapter 25: Design Defense.

Week 11: Chapter 28: Design Report. Journal review 2 is due.

Week 12: Team and Individual Project Presentations.

Week 13: Team and Individual Project Presentations.

Week 14: Team and Individual Project Presentations.

Week 15: Final exam review.

Week 16: Final Exam.

*Note: This syllabus is subject to change at any time during the semester and the student will be notified accordingly.*