# Course Outline for ENGR 1201 – Introduction to Engineering

**Spring, 2014**

**Class Number 77615**

<table>
<thead>
<tr>
<th>Discipline/Program</th>
<th>Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Level</td>
<td>First Year (Freshman)</td>
</tr>
<tr>
<td>Course Title</td>
<td>Introduction to Engineering</td>
</tr>
<tr>
<td>Course Rubric and Number</td>
<td>ENGR 1201</td>
</tr>
<tr>
<td>Semester with Course Reference Number (CRN)</td>
<td>Spring, 2014 CRN 77615</td>
</tr>
<tr>
<td>Course Location/Time</td>
<td>Spring Branch Campus, Mondays; Room 205; 8:00 PM – 10:00 pm</td>
</tr>
<tr>
<td>Course Semester Credit Hours</td>
<td>2 Semester Credit Hours</td>
</tr>
<tr>
<td>Total Course Contact Hours</td>
<td>32</td>
</tr>
<tr>
<td>Course Length (number of weeks)</td>
<td>16</td>
</tr>
<tr>
<td>Type of Instruction</td>
<td>In person, supplemented with online material</td>
</tr>
</tbody>
</table>

**Instructor contact information (phone number and email address)**

Dr. G. Raymond Brown
Office Phone: N/A
E-mail: g.brown@hccs.edu
Learning Web: [http://learning.hccs.edu/faculty/g.brown](http://learning.hccs.edu/faculty/g.brown)

**Office Location and Hours**

Room 613 (Spring Branch Campus) 5:00 – 6:00 PM Monday or by appointment

**Course Description: ACGM**

Introduction to engineering as a discipline and a profession. Includes instruction in the application of mathematical and scientific principles to the solution of practical problems for the benefit of society.

**Course Description: HCC Catalog Description**

Introduction to engineering as a discipline and profession. The material taught in this course will provide an understanding for prospective students intending to major in engineering of the skills and requirements necessary toward obtaining a degree in engineering.

**Course Prerequisite(s)**

Math 0312

**Academic Discipline Program Learning Outcomes**

- Demonstrate an understanding of the meaning of engineering as a profession and a discipline
- Demonstrate basic mathematics and computer skills required for pre-engineering
- Develop organizational and learning skills required to succeed in College/University

**Course Student Learning Outcomes (SLO)**

1. Demonstrate and understanding of the meaning of Engineering as a profession and a discipline.
2. Develop organizational and learning skills required to succeed in College/University.
3. Demonstrate knowledge of the ethical responsibility issues of the Engineering profession.
4. Demonstrate basic mathematical and computer skills required for pre-engineering students.
### Learning Objectives (Numbering system linked to SLO)

Upon successful completion of this course, students should be able to:

1. **Define Engineering.**
2. **Discuss the differences between the various fields of Engineering specialization.**
3. **Identify future career paths and job opportunities as related to the Engineering profession.**
4. **Formulate a strategy for effective class notes taking.**
5. **Identify and apply time and priority management techniques to the learning process.**
6. **Effectively participate in team work, through group discussions/projects.**
7. **Design an individualized Career Path including developing degree plan for intended major, developing career portfolio, and taking career assessment inventory.**
8. **discuss various options available to students to seek financial aid, such as loans, grants and summer jobs.**
9. **Enumerate the different students’ Engineering Societies Chapters that may be available at a given University and the curricular advantages they offer.**
10. **Describe the moral foundations of Engineering Ethics.**
11. **List some of the basic tenets of the Codes of Engineering Ethics.**
12. **Discuss case studies as applied to Engineering.**
13. **Solve basic algebraic equations.**
14. **Demonstrate proper use of significant digits in calculations.**
15. **Convert measurements form one system of units to another.**
16. **Prove proficiency in graphical representation of data using Excel and Excel built-in functions.**

### SCANS and/or Core Curriculum Competencies

- Reading, Speaking/Listening, Critical Thinking, Computer/Information Literacy

### Course Calendar (Tentative Schedule)

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topic/Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01/13</td>
<td>Introduction/Course syllabus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Keys to Success in Engineering Study 1.1-1.5</td>
</tr>
<tr>
<td>2</td>
<td>01/20</td>
<td>MLK, Jr. Holiday, no class meeting</td>
</tr>
<tr>
<td>3</td>
<td>01/27</td>
<td>The Engineering Profession 2.1-2.10</td>
</tr>
<tr>
<td>4</td>
<td>02/03</td>
<td>The Engineering Profession 2.1-2.10</td>
</tr>
<tr>
<td>5</td>
<td>02/10</td>
<td>Exam 1, Module 1, Due 2/11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Team Project I Submission, 02/11 via e-mail</td>
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<tr>
<td></td>
<td></td>
<td>3. The Teaching/Learning Process 3.1-3.8</td>
</tr>
<tr>
<td>6</td>
<td>02/17</td>
<td>President’s Day holiday, no class meeting</td>
</tr>
<tr>
<td>7</td>
<td>02/24</td>
<td>4. Making the Most of What you are Taught 4.1-4.5</td>
</tr>
<tr>
<td>8</td>
<td>03/03</td>
<td>Exam 2, Module 2, Due 03/04</td>
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<tr>
<td></td>
<td></td>
<td>Team Project II Submission, 03/04 via e-mail</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Making the Learning Process Work for You 5.1-5.4</td>
</tr>
<tr>
<td>9</td>
<td>03/17</td>
<td>5. Making the Learning Process Work for You 5.1-5.4</td>
</tr>
<tr>
<td>10</td>
<td>03/24</td>
<td>6. Professional Growth and Development 6.1-6.8</td>
</tr>
<tr>
<td>11</td>
<td>03/31</td>
<td>6. Professional Growth and Development 6.1-6.8</td>
</tr>
<tr>
<td>12</td>
<td>04/07</td>
<td>Exam 3, Module 3, Due 04/01</td>
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<tr>
<td></td>
<td></td>
<td>Team Project III Submission, 04/01 via e-mail</td>
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Instructional Methods

Standard class lectures using the whiteboard and PowerPoint presentations.

Student Assignments

Homework assignments and projects must be submitted via the Eagle Online course by midnight of the day they are due via attachment to an e-mail to the instructor. As indicated in the “Students’ Assessments” section below, late submissions will be penalized with 5% deduction per each day late.

Student Assessment(s)

Grading Rubrics:

- Exams 40 %
- Homework 15 %
- Project 20 %
- Final Exam 25 %

Total------------------------------------ 100 %

- Exams will be taken on Eagle Online.
- Each exam will consist of approximately 25 multiple questions.
- Exams cannot be administered late and only 1 attempt will be allowed.
- HW assignments will be submitted Online for grading
- Discussion topics will be conducted via Eagle Online.
- Late assignments will be penalized with 10% deduction per each day late.

Overall Score = 0.40 * (Average for 3 Exams) + 0.20 * (Average for Projects) + 0.15 * (Average for Homework + 0.25 * (Final Exam)

Instructor’s Requirements

Exams and Make-up Policy

Examinations will consist of three non-cumulative regular exams (40%). Make-up exams will not normally be given, so make every effort to take the exams on their scheduled dates

Homework

During the semester homework assignments will be posted on Eagle Online on chapters covered. The average grade for homework will count toward 10% of the Final Grade.

Program/Discipline Requirements

At the program level, the Physics Discipline strives to accomplish the Program Learning Outcomes, Student Learning Outcomes, and Learning Objectives as described above. We desire that you receive a challenging and rewarding experience in your classes at HCC which will prepare you well for courses that you may take in the future.

HCC Grading Scale

A = 90% – 100%........................................ 4 points per semester hour
B = 80% – 89% ......................................3 points per semester hour
C = 70% – 79% ........................................2 points per semester hour
D = 60% – 69% ........................................1 point per semester hour
F = < 60% ..............................................0 points per semester hour
IP (In Progress) .........................................................0 points per semester hour
W (Withdrawn) .................................................................0 points per semester hour
I (Incomplete) .................................................................0 points per semester hour
AUD (Audit) .................................................................0 points per semester hour

IP (In Progress) is given only in certain developmental courses. The student must re-enroll to receive credit. COM (Completed) is given in non-credit and continuing education courses. To compute grade point average (GPA), divide the total grade points by the total number of semester hours attempted. The grades “IP,” “COM” and “I” do not affect GPA.

**Instructor Grading Criteria**
See the above descriptions of the exams, quizzes/homework, and final. The course grade is based on these four criteria according to the Assessment section above.

**Instructional Materials**

<table>
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<tr>
<th>Textbook</th>
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**HCC Policy Statement:**
ADA
Academic Honesty
Student Attendance
Withdrawal Deadline
How to Drop a Class
Sexual Harassment
Early Alert Program

Access Student Services Policies on their Web site: [http://hccs.edu/student-rights](http://hccs.edu/student-rights)

**Disability Support Services (DSS)**
“Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Services Office at the respective college at the beginning of each semester. Faculty are authorized to provide only the accommodations requested by the Disability Support Services Office.”

If you have any special needs or disabilities which may affect your ability to succeed in college classes or participate in any college programs or activities, please contact the DSS office for assistance. At Southwest College, contact Dr. Becky Hauri, 713-718-7909. Contact numbers for the other HCC colleges are found in the Annual Schedule of Classes, and more information is posted at the HCC web site at [Disability Services](http://hccs.edu/student-rights).

**Academic Honesty**
“Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Disciplinary proceedings may be initiated by the college system against a student accused of scholastic dishonesty. Penalties can include a grade of “0” or “F” on the particular assignment, failure in the course, academic probation, or even dismissal from the college. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion.” In this class, the penalty for willful cheating on exams is a grade of F in the course. This is the standard policy of the Physical Sciences department at Southwest College.

**Attendance Policy**
The HCCS attendance policy is stated as follows: “Students are expected to attend classes regularly. Students are responsible for materials covered during their absences, and it is the student’s responsibility to consult with instructors for make-up assignments. Class attendance is checked daily by instructors. Although it is the responsibility of the student to drop a course for non-attendance, the instructor has full authority to drop a student for excessive absences. A student may be dropped from a course for excessive absences after the student has accumulated absences in excess of 12.5% of the hours of instruction (including lecture and laboratory time).”

If circumstances significantly prevent you from attending classes, please inform me. I realize that sometimes outside circumstances can interfere with school, and I will try to be as accommodating as possible, but please be aware of the attendance policy.

Policy Regarding Multiple Repeats of a Course

“NOTICE: Students who repeat a course three or more times may soon face significant tuition/fee increases at HCC and other Texas public colleges and universities. 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.”

Last Day for Administrative and Student Withdrawals

For 16-week Fall ’13 classes, this date is November 1, 4:30 PM. Any student who is contemplating withdrawing from the class is urged to see me first! You may be doing better than you think. Either way, I want to be accessible and supportive. I do not believe in "weed out" classes, and I consider you to be much more than just a name or number! Note my office hours above; if you need assistance, I'm here to help.

Policy Regarding Withdrawals

Students desiring to withdraw from a class must do so by the above withdrawal date by filling out a withdrawal form at the registrar’s office. After this date, instructors can no longer enter a grade of “W” for the course for any reason.

How to Drop a Class

- If a student decides to withdraw from a class upon careful review of other options, the student can withdraw online prior to the deadline through their HCC Student Center.
- HCC and/or professors may withdraw students for excessive absences without notification (see Class Attendance below).
- Students should check HCC’s Academic Calendar by Term for withdrawal dates and deadlines. Classes of other duration (flex-entry, 8-weeks, etc.) may have different final withdrawal deadlines. Please contact the HCC Registrar’s Office at 713.718.8500 to determine mini-term class withdrawal deadlines.

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 by 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 action.

For these and other policies please refer to your Student Handbook.

**Early Alert Program**

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.

### Distance Education and/or Continuing Education Policies


Access CE Policies on their Web site: [http://hccs.edu/CE-student-guidelines](http://hccs.edu/CE-student-guidelines)

### Test Bank

N/A

### Scoring Rubrics

Homework sets will consist of multiple-choice and show-your-work questions. These are graded in the standard manner.

### Sample Assignments

N/A

### Sample Instructional Methods/Activities

See the PowerPoint presentations on Eagle Online for an overview of the content of each chapter:

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**Other Information:**

**Evaluation for Greater Learning Student Survey System (EGLS3)**

“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.”