**Course Title: Introduction to Chemical Engineering Laboratory SPRING 2019**
**Course Prefix: CHEG** **Course No.: 1021** **Section No.: P01**

**Department of | Chemical Engineering | College of | Engineering**


**Instructor Name:** ***Dr. Emmanuel Dada***
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P.O. Box | 519
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Prairie View, TX 77446-0519


**Office Hours: | T 11:00 A.M. – 12 Noon.**
**Virtual Office Hours: | None**

**Course Location:** | Sam R Collins Engr Tech Bldg 225
**Class Meeting Days & Times: | T 3:00 pm-5:50 pm**
**Catalog Description:** | **(0-1) Credit 1 semester hour. Introduction to the field of engineering, industries, careers, and the curriculum. Basic engineering terms, concepts, calculations, problem solving skills, ethics, and computer applications.**

**Prerequisites:**
**Co-requisites:** | **CHEG 1011**

**Required Text:** | **"Studying Engineering – A Road Map to a Rewarding Career" by Raymond B. Landis, 3rd Edition (2007), Discovery Press, ISBN 13:978-0-9646969-2-1, ISBN 10: 0-9646969-2-4**

**Recommended Text/Readings:**

**1. "Spreadsheet Tools for Engineers Using Excel Including Excel 2002" by Byron S. Gottfried, McGraw Hill (Boston, 2003), ISBN 0-07-248068-8**
**2. "Basic Principles and Calculations in Chemical Engineering" by David Himmelblau, 7th Edition (2003), Prentice Hall, ISBN 978-0-131-40634-6**

**3. Engineering Your Future, William Oakes et al., 3rd Edition, Great Lakes Press www.glpbooks.com (ISBN 188101890-3)**
**4. Hand-outs**

**Access to Learning Resources:**

PVAMU Library:
phone: (936) 261-1500;
web: http://www.tamu.edu/pvamu/library/
University Bookstore:
phone: (936) 261-1990;
web: https://www.bkstr.com/Home/10001-10734-1?demoKey=d

**Course Goals or Overview:**

To introduce freshmen to chemical engineering as a field of study and professional practice and explore the role of chemical engineers in society and the importance of chemical engineering in our daily life. To provide freshmen an understanding of the basics of engineering activities and become familiar with engineering terminology, methods, and tools used by engineers and engineering companies in accordance with ABET.

**Course Outcomes/Objectives**
**At the end of this course, the student will have achieved and demonstrated the following outcomes.**

1 | Be able to present the role of engineers in society, career opportunities, career paths, job environment, and performance expectations.

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| 2 | Be able to state academic performance expectations for chemical engineering students and discuss (a) curriculum synergy and how it applies to their professional careers, (b) computer facilities, tutoring, student professional societies, and other campus resources, and (c) successful studying habits to help students get the most out of a course. |
| 3 | Be able to solve engineering problems using engineering problem solving strategies and computer applications software. |
| 4 | Be able to work in a teamwork to solve engineering problems |
| 5 | Be able to effectively communicate ideas using both oral and written communications |
| 6 | Be able to discuss the importance of continuing education and the process for becoming a |
| 7 | professional engineer. |
| 8 | Be able to assist advisor in academic and career planning. |
| 9 | Be able to design experiments, and collect and analyze data |
| 10 | Be able to understand their ethical and professional responsibility as an engineer |
| 11 | |

## Course Requirements & Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course. The course has been designed to ensure that students acquire a solid grounding in ABET 2000 outcomes *h. j and k*. Continuous assessment of students' homework assignments and exams will be used to evaluate their competence in the ABET 2000 outcomes *h*, *j* and *k* as presented below.

**Exams** – written tests designed to measure knowledge of presented course material
**Homework Exercises** – written assignments designed to supplement and reinforce course material.
**Presentation** – class presentation of projects by project teams
**Class Participation** – daily attendance and participation in class discussions

**Grading Matrix**

| **Instrument** | **Total** |
|---|---|
| Homework Assignments | 20% |
| Mid Term Exam | 30% |
| Final Exam/Presentation | 50% |
| **Total** | **100%** |
| Discount for lack of participation | -10% |
| *Extra credit (as assigned by instructor)* | |

**Grade Determination:**
A = 100 – 90pts;
B = 89 – 80pts;
C = 70 – 79pts;
D = 60 – 69pts;
F = 59pts or below

## Course Procedures

### Textbook Policy

Students must acquire the textbook that is listed as "required" on the course syllabus. The textbook must be acquired by the 10th class day. Students are not allowed to share textbooks with other students who are currently registered in the same class. Failure to acquire (or show proof of purchase) the required textbook by the 10th class day will result in the student being administratively dropped from the course. The University will assess financial obligations for the course to the student as with any other dropped class according to the fee schedule. In addition, your financial aid may be affected by the subsequent registration action(s).
Go to http://www.pvamu.edu/pages/195.asp for the Roy G. Perry College of Engineering Textbook Policy.

**Conduct:**

1. Students will conduct themselves in a manner that is respectful to their fellow classmates and the instructor at all times.

2. **Cell phones MUST** be turned off during class time. Students are **NOT** allowed to leave class to answer cell phones.
3. Students are **NOT** allowed to wear caps/hats in class
4. Arrive to class prepared to discuss lesson.
5. Always bring essential tools: Textbook , calculator and paper,
6. Students are **NOT** allowed to use programmable calculators in this class.

**Submission of Assignments:**
*All homework assignments are due directly to the Instructor, prior to the start of class or the assignment will not be accepted. All homework assignments and exams should be written on one side of the page only, and should use the appropriate cover sheet, with the name, assignment title and date. All pages should be numbered. Failure to use the correct cover sheet will result in the assignment grade being reduced by 20%.*
**Formatting Documents:**
Microsoft Word is the standard word processing tool used at PVAMU. If you're using other word processors, be sure to use the "save as" tool and save the document in either the Microsoft Word, Rich-Text, or plain text format.
**Exam Policy**
Exams should be taken as scheduled. No makeup examinations will be allowed except under documented emergencies (See Student Handbook).

## Professional Organizations and Journals
*As directed by instructor.*

## References
*As directed by instructor.*

| 16 WEEK CALENDAR | |
|---|---|
| | |
| **Week One:** Topic | Introduction; Meet and greet; discuss syllabus. |
| Chapter (s): | |
| Assignment (s): | Homework 1 Start with email |
| **Week Two:** Topic | Using Excel 1 |
| Chapter (s): | |
| Assignment (s): | Homework 2: GPA Calculations |
| **Week Three:** Topic | Creating a course binder |
| Chapter (s):<br>Assignment (s): | 5 (5.1)<br>Homework 3: Course binder |
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| **Week Four:** Topic | Using Excel 2 |
| Chapter (s):<br>Assignment (s): | Homework 4: Tabulating, averaging, and plotting |
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| **Week Five:** Topic | MATLAB 1 |
| Chapter (s):<br>Assignment (s): | Homework 5: Plotting graphs with MATLAB |
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| **Week Six:** Topic | MATLAB 2 |
| Chapter (s):<br>Assignment (s): | Homework 6: Finding roots of equatio<br>ns |
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| **Week Seven:** Topic | Visio |
| Chapter (s):<br>Assignment (s): | Homework 7: Drawing diagrams with Visio |
| **Week Eight:** Topic | Teaming 1: Cooperative learning; team formation |

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|---|---|
| Chapter (s):<br>Assignment (s): | Chapter 4 (4.2)<br>**Mid Term** |
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| **Week Nine:** Topic | Chemical Processes: Introduction to Chemical Processes and Chemical Process Industries 1 |
| Chapter (s):<br>Assignment (s): | Reading: Chemical Process Industries |
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| **Week Ten**: Topic | Presentations 1: Intro to oral presentations and Powerpoint |
| Chapter (s):<br>Assignment (s): | Chapter 9 (9.1)<br>Homework 8: Preparation of Powerpoint slides |
| **Week Eleven:** Topic | Chemical Processes: Introduction to Chemical Processes and Chemical Process Industries 2 |
| Chapter (s):<br>Assignment (s): | Reading (Internet research): Process selection |
| | |
| **Week Twelve:** Topic | Presentations 2: Team presentations |
| Chapter (s):<br>Assignment (s): | Chapter 9 (9.1)<br>Presentations on selected processes using Powerpoint and Visio |
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| **Week Thirteen:** Topic | Process calculations: Units and Dimensions, rounding; significant figures etc |
| Chapter (s):<br>Assignment (s): | Dimensions, SI units, Engineering units; significant figures etc |
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| **Week Fourteen:** Topic | Teaming 2 and Learning styles |
| Chapter (s):<br>Assignment (s): | Chapter 4 (4.1-4.2)<br>Evaluation of Team functioning; Personal assessment of leaning style |
| | |
| **Week Fifteen:** Topic | Course Review |
| Chapter (s):<br>Assignment (s): | All chapters listed above |

**Week Sixteen** **Final Exam**

# University Rules and Procedures

**Disability statement (See Student Handbook):**
Students with disabilities, including learning disabilities, who wish to request accommodations in class should register with the Services for Students with Disabilities (SSD) early in the semester so that appropriate arrangements may be made. In accordance with federal laws, a student requesting special accommodations must provide documentation of their disability to the SSD coordinator.

**Academic misconduct (See Student Handbook):**
You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to university disciplinary procedures.

**Forms of academic dishonesty:**

1. Cheating: deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered; giving or receiving aid unauthorized by the instructor on assignments or examinations.

2. Academic misconduct: tampering with grades or taking part in obtaining or distributing any part of a scheduled test.

3. Fabrication: use of invented information or falsified research.

4. Plagiarism: unacknowledged quotation and/or paraphrase of someone else's words, ideas, or data as one's own in work submitted for credit. Failure to identify information or essays from the Internet and submitting them as one's own work also constitutes plagiarism.

**Nonacademic misconduct (See Student Handbook)**
The university respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either (1) the instructor's ability to conduct the class, (2) the inability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. Such incidents will be adjudicated by the Dean of Students under nonacademic procedures.

**Sexual misconduct (See Student Handbook):**
Sexual harassment of students and employers at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.

**Attendance Policy:**
Prairie View A&M University requires regular class attendance. Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student's course grade being reduced or in assignment of a grade of "F". Absences are accumulated beginning with the first day of class.

**Student Academic Appeals Process**
Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

# Technical Considerations for Online and Web-Assist Courses

**Minimum Hardware and Software Requirements:**

-Pentium with Windows XP or PowerMac with OS 9
-56K modem or network access
-Internet provider with SLIP or PPP
-8X or greater CD-ROM
-64MB RAM
-Hard drive with 40MB available space
-15" monitor, 800x600, color or 16 bit
-Sound card w/speakers
-Microphone and recording software
-Keyboard & mouse
-Netscape Communicator ver. 4.61 or Microsoft Internet Explorer ver. 5.0 /plug-ins
-Participants should have a basic proficiency of the following computer skills:
  - ·Sending and receiving email
  - ·A working knowledge of the Internet
  - ·Proficiency in Microsoft Word
  - ·Proficiency in the Acrobat PDF Reader
  - ·Basic knowledge of Windows or Mac O.S.

**Netiquette (online etiquette):** students are expected to participate in all discussions and virtual classroom chats when directed to do so. Students are to be respectful and courteous to others in the discussions. Foul or abusive language will not be tolerated. When referring to information from books, websites or articles, please use APA standards to reference sources.

**Technical Support:** Students should call the Prairie View A&M University Helpdesk at 936-261-2525 for technical issues with accessing your online course. The helpdesk is available 24 hours a day/7 days a week. For other technical questions regarding your online course, call the Office of Distance Learning at 936-261-3290 or 936-261-3282

**Communication Expectations and Standards:**

All emails or discussion postings will receive a response from the instructor within 48 hours.

You can send email anytime that is convenient to you, but I check my email messages continuously during the day throughout the work-week (Monday through Friday). I will respond to email messages during the work-week by the close of business (5:00 pm) on the day following ***my receipt*** of them. Emails that I receive on Friday will be responded to by the close of business on the following Monday.

**Submission of Assignments:**
Assignments, Papers, Exercises, and Projects will distributed and submitted through your online course. Directions for accessing your online course will be provided. Additional assistance can be obtained from the Office of Distance Learning.

**Discussion Requirement:**
Because this is an online course, there will be no required face to face meetings on campus. However, we will participate in conversations about the readings, lectures, materials, and other aspects of the course in a true seminar fashion. We will accomplish this by use of the discussion board.

Students are required to log-on to the course website often to participate in discussion. It is strongly advised that you check the discussion area daily to keep abreast of discussions. When a topic is posted, everyone is required to participate. The exact use of discussion will be determined by the instructor.

**It is strongly suggested** that students type their discussion postings in a word processing application and save it to their PC or a removable drive before posting to the discussion board. This is important for two reasons: 1) If for some reason your discussion responses are lost in your online course, you will have another copy; 2) Grammatical errors can be greatly minimized by the use of the spell-and-grammar check functions in word processing applications. Once the post(s) have been typed and corrected in the word processing application, it should be copied and pasted to the discussion board.