College of Engineering
Course Title: Chemical Engineering Laboratory II **Fall 2019**

Course Prefix: CHEG	Course No.: 4011	Section No.: P03	Department of Chemical Engineering

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Office Hours: MWF 2:30 - 4:50 p.m; WF 10 – 10:50 am
Virtual Office Hours: By Appointment
Course Location: Agriculture and Business Bldg 214
Class Meeting Days & Times: M 5:00-7:50 PM

Catalog Description:
(0-3) Credit 1 semester hours. Continuation of CHEG 3011, but directed to sensors, reaction engineering and control systems. Study of reaction rates and equilibria in simple chemical systems. Emphasis is placed upon experimental data required for the scale-up to commercial scale equipment.

Pre-requisites: Senior Standing. Undergraduate level CHEG 3023 Minimum Grade of C and Undergraduate level CHEG 3043 Minimum Grade of C and (Undergraduate level SPCH 1003 Minimum Grade of C or Undergraduate level COMM 1003 Minimum Grade of C) and (Undergraduate level ENGL 1133 Minimum Grade of C or Undergraduate level ENGL 1143 Minimum Grade of C) and Undergraduate level PHYS 2511 Minimum Grade of C and Undergraduate level PHYS 2521 Minimum Grade of C and Undergraduate level CHEM 1021 Minimum Grade of C

Co-requisites: CHEG 4033

Required Text:
NONE
Recommended Text/Readings:
1. Holman, J. P., Experimental Methods for Engineers, 4th Ed., McGrawHill, New York, 1986.
2. Fahien, R. W., Fundamentals of Transport Phenomena, McGrawHill, New York, 1993.
3. N. de Nevers, Fluid Mechanics for Chemical Engineers. 3rd edition, McGraw-Hill, 2005, ISBN: 978-0-07-256608-6
4. McCabe, Smith and Harriott, Unit Operations of Chemical Engineers, 7th Edition, McGraw-Hill, 2005, ISBN: 0-07-284823-5
5. Geankoplis, C.J., Transport Processes and Separation Process Principles. 4th Edition, ISBN: 0-13-101367-X

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

Goals:
The goal of this course is to teach students laboratory skills on the areas of fluid-mechanics and chemical separations.

Outcomes:
The student will have demonstrated the ability to:
1. Demonstrate ability to perform quantitative physical measurements, operate, laboratory scale equipment.
2. Demonstrate ability to plan, design, and evaluate experiments.
3. Demonstrate ability to communicate effectively in oral and written formats.
4. Demonstrate familiarity with commercial scale equipment.

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 outcomes 3, 5 and 6 as summarized below:

ABET EAC OUTCOME 3

1. Ability to Organize, Plan, Design/Prepare and Use Appropriate Visual Aids for communication/Presentation to a range of audiences (executives, technical and non-technical).
2. Ability to Articulate Subject Knowledge (Technical Content)
3. Appearance and Ability to Provide Good Oral Delivery to a range of audiences

ABET EAC OUTCOME 5

1. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment
2. Establish goals, plan tasks, and meet objectives.

ABET EAC OUTCOME 6

1. Ability to develop experiments
2. Ability to conduct experiments
3. Ability to analyze and interpret experimental data
4. Demonstrate the use of engineering judgement to draw conclusions.

Laboratory Reports – written descriptions of lab. experiments including results, calculations, and conclusions.

Laboratory Oral Presentations – one or more oral assignments, often groups, designed to supplement and reinforce course material

Quizzes – announced or surprise in-class assignments to promote student accountability.

Design of One Experiment – one proposed experiment on the lab. subject areas. It will be evaluated through an oral presentation and a written report.

Participation – participation is evaluated based on attendance, preparation, and active participation in each laboratory experiment – which compulsory for each individual student. Failure to arrive on time or failure to pass pre-lab quizzes amounts to a "zero" participation grade for that week's lab experiment.

Grading Matrix

Item (Averages)	Weight %		Grade	Percentages
Quizzes	10		A	100-90
Lab Participation	10		B	89-80
Lab Reports	40		C	79-70
Final Presentation	20		D	69-60
Design of Experiments	20		F	59 or below
Total	100			

Course Procedures

Academic Calendar (Attached to end of syllabus - You should check online schedule for the accuracy of dates)

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, paper, calculator.

Submission of Assignments

All assignments are due by default one week after being given, unless otherwise stated. All written assignments are due directly to the Instructor, prior to the start of class or the assignment will not be accepted. All assignments 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 format will result in the assignment grade being reduced by 20%.

Exam Policy

Reports are due as scheduled. No makeup examinations will be allowed except under documented emergencies (See Student Handbook).

Course schedule

Week 1	Laboratory Safety and Loss Prevention (Video Presentation & Quiz) Syllabus & Experiments Overview
Week 2	No lab – Labor Day
Week 3	All Topics*. All groups will perform a lab every other week.
Week 4	Submit Report
Week 5	All Topics*. All groups will perform a lab every other week.
Week 6	Submit Report
Week 7	All Topics*. All groups will perform a lab every other week.
Week 8	Submit Report
Week 9	All Topics*. All groups will perform a lab every other week.
Week 10	Submit Report
Week 11	Design of Experiments
Week 12	Design of Experiments
Week 13	Design of Experiments
Week 14	Final Report & Presentation
Week 15	

*Topics

Topic 1 Overall Column Efficiency
Topic 2 Centrifugal Pump
Topic 3 Fluid Flow in a Packed Tower
Topic 4 Fluid Flow in Pipes

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.