Chemical/Materials Science Engineering Syllabus

Dr. Cody

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Chemical engineering is a field that applies the principles of chemistry to large-scale production of a variety of materials, as well as research and production on a nano scale. The goal for this class is to provide the opportunity to problem solve and apply chemical principles learned in previous classes to engineering scenarios.

# Course Breakdown

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| --- | --- | --- |
| **Unit** | **Title** | **Chapters** |
| 1 | Intro to Chemical Engineering | EPCP 1, 2, 3 |
| 2 | Material Balances | EPCP 4, 5, 6 |
| 3 | Energy Balances | EPCP 7, 8, 9 |
| 4 | Ligand Field Theory | OTHER |
| 5 | MS: MO Theory, Semiconductors | OTHER |
| 6 | MS: Solid State, Alloys | MSE 1-15 |

Course Requirements and Rules:

1. **Homework.** You must do the homework assigned to be successful. This class will be treated as a college-level class, and as such, homework will never be checked for a grade. You will often have the opportunity to start homework in class as we encourage you to collaborate with one another on the most challenging problems.
2. **Tests.** All Chemical Engineering tests will be open book and open notes. Do not let this fool you. The tests will be very challenging even though you are able to use your book and notes. It is VITAL that you keep up with the material throughout the semester. The Materials Science tests will be conducted without books or notes available.
3. **Lab safety is very important!!** We will conduct a variety of labs throughout the semester, many of which use equipment that will be brand new to you. It is very important that you take the appropriate safety precautions for all labs that we will be completing. The equipment is VERY expensive and needs to be handled with care. Lab Safety is mandatory!!!!!
4. **Calculator!** You will NEED a calculator for this course, as there is a great deal of math involved, especially early in the course. A graphing calculator is recommended, but a scientific calculator should get you through. You need to bring your calculator to class EVERDAY!!!!

# Grading Scale

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| --- | --- |
| Tests | 40% |
| Labs | 20% |
| Journal Club | 15% |
| Case Study | 10% |
| Final | 15% |

If you have any problems, concerns, or questions, please do not hesitate to ask. We are here to help!!! The success of ALL our students is a priority for us. We look forward to a great semester.

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