Course Description: This course for non-science majors will enable these students to comprehend the fundamental concepts of chemistry, and apply them to their respective disciplines. An intermediate algebra level math proficiency is assumed.

Text and Materials:
1. Text: Chemical Separations: Principles, Techniques and Experiments (Techniques in Analytical Chemistry) by Clifton E. Meloan
2. Lab Manual: Sample Preparation – (Custom) by Thomas Ready

Course Goals/ Objectives: After successful completion of this course, a student will be competent in both theory and application of standard chemical purification techniques used in industry. Students will be able to identify, select, & implement purification techniques for the isolation of the target molecules from crude starting materials.

Class Policies: It is the student's responsibility to initiate the drop process if he/she decides not to complete the class. If this class is not dropped, then a letter grade will be assigned for the work completed.

The last day to drop this semester is November 16, 2010.

Class attendance will be monitored. Students who miss three consecutive classes or a total of six classes will be reported to the Office of Student Services and a written warning or a course withdrawal notification will be sent to the student.

If for some reason you must miss an exam, please contact the instructor before the class period in which the exam is scheduled. No individual make-up exams will be given during the semester. A grade of “Zero” will be assigned for any exams missed. The lowest exam grade will be dropped at the end of the semester.

Midland College does not tolerate scholastic dishonesty or academic misconduct in any form. Please read the MC Student Handbook on this subject.
Evaluation of Students:

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<tbody>
<tr>
<td>Exams</td>
<td>20%</td>
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<tr>
<td>Homework / In-Class and Online Quizzes</td>
<td>10%</td>
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<tr>
<td>Lab Grade</td>
<td>70%</td>
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Guaranteed Grades:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>90%</td>
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<tr>
<td>B</td>
<td>80%</td>
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<tr>
<td>C</td>
<td>70%</td>
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<tr>
<td>D</td>
<td>60%</td>
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Course Schedule:

1. Distillation
2. Sublimation
3. Solubility
4. Extraction
5. Ion Exchange
6. Chromatography
7. Electrophoresis
8. Density Gradients & Centrifugation
9. s;ikajsdfw

Intellectual Competencies:

1. **Reading**- Understanding the material incorporated in the text used in this course will require the student to analyze and interpret various chemical concepts.

2. **Listening**- The primary teaching methods used in this course are discussion and lecture. Understanding the oral presentation of material will require the student to analyze and interpret various chemical concepts.

3. **Critical Thinking**- Critical thinking, as exemplified by problem solving, is inherent in the study of any scientific discipline. Chemical problems will be considered, discussed, and analyzed in this course.

ADA Statement:

Any student who, because of a disabling condition, may require some special arrangements in order to meet course requirements should contact the instructor as soon as possible. These conditions may include documented physical or educational disabilities. Please be aware that services or accommodations are not automatic. Each student must request them and secure the proper authorizations.

Exemplary Objectives:

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<tr>
<th>Competency</th>
<th>Course No.</th>
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<td>1 2 3 4 5</td>
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<td>X X X X X</td>
<td>CTEC 2371</td>
<td>Sample Preparation</td>
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Competencies:

1. To understand and apply method and appropriate technology to the study of the natural sciences.

2. To recognize scientific and quantitative methods and the differences between these approaches and the other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.

3. To identify and recognize the differences among competing scientific theories.

4. To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.

5. To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

Safety:

Students are expected to adhere to the following guidelines during Laboratory sessions:

1) Closed-toed shoes.

2) Sleeved shirt that covers midriff (or lab coat)

3) Pants

4) ACS regulation safety goggles (contact lenses are STRONGLY DISCOURAGED)

5) No food or drink containers in the laboratory

6) Safety equipment is not to be moved (unless in use).

7) No horseplay – conduct which jeopardizes the health and well-being of any individuals will result in an automatic failure of the laboratory course.

Students will not be allowed to participate in the laboratory if these rules are not followed.
Instructor Information:

Name: Thomas Ready, Ph.D.

Office: Fox Science Building - Room 201

Office Phone: 685-6748

E-Mail: tready@midland.edu

Office Hours: Tu (8:00a.m. - 9:30a.m.; 11:00a.m. – 12:00p.m.; 1:00p.m.-3:00p.m.)
Th (8:00a.m. - 9:30a.m.; 11:00a.m. – 12:00p.m.; 2:00p.m.-3:00p.m.)
F (8:00a.m. - 10:00a.m.)


Division Dean: Dr. Margaret Wade, 125 SF, 685-4615

Division Secretary: Norma Duran, 124 SF, 685-4612
Brenda Smith, 124 SF, 685-6413