

North Central Michigan College

NCMC MASTER COURSE SYLLABUS

Last Date Revised: 2/7/05

DIVISION/AREA: Liberal Arts

DEPARTMENT:

DIVISION DIRECTOR: Mark Gaylord, Ph.D.

ORIGINATOR: Ralph Christensen

DEAN OF INSTRUCTION: Tim Dykstra, Ph.D.

HOURS OF INSTRUCTION:

Credit hours: 4
Lecture: 3
Lab: 3
Contact hours: 105.6

COURSE TITLE: Quantitative Analysis

COURSE ALPHA: CEM **COURSE NUMBER:** 212

CATALOG DESCRIPTION:

Gravimetric, volumetric, spectroscopic, and electroanalytical methods of analysis.

PREREQUISITE(S): CEM 122

COREQUISITE(S): N/A

GENERAL EDUCATION/PROGRAM OUTCOMES:

1. Think critically and analytically
2. Select and use mathematical tools for problem solving and decision making

COURSE OBJECTIVES AND OUTCOMES:

Correctly use statistical tests and error analysis, understand various sample treatments, interferences, and standards develop skills in gravimetric, volumetric, spectroscopic and electroanalytical methods.

METHODS OF INSTRUCTION: Lecture, demonstrations, group projects

METHODS OF EVALUATION: Tests, quizzes, homework, group reports, lab technique, results presentations

REQUIRED TEXT AT TIME OF COURSE ADOPTION/REVISION:

TEXTS: Possible choices are Contemporary Chemical Analysis, Analytical Chemistry, Fundamentals of Chemical Analysis

OPTIONAL SUPPLEMENTARY MATERIALS:

Reasonable accommodations may be provided for students with documented physical, sensory, cognitive, systemic, and/or psychiatric disabilities. Please contact the Learning Support Services (LSS) at (231) 348-6682 to arrange services for this course.

SUGGESTED TIME ALLOWANCE AND SEQUENCE OF INSTRUCTION:

(List general content description of what is being covered each week)

WEEK 1	Statistics
WEEK 2	Sampling
WEEK 3	Gravimetric Analysis
WEEK 4	Gravimetric Analysis
WEEK 5	Acid-base titrations
WEEK 6	Acid-base titrations
WEEK 7	Oxidation-reduction titrations
WEEK 8	Oxidation-reduction titrations
WEEK 9	Complexometric titrations
WEEK 10	Complexometric titrations
WEEK 11	Electrochem fundamentals
WEEK 12	Electroanalytical techniques
WEEK 13	Spectroscopy
WEEK 14	Spectroscopy
WEEK 15	Spectroscopy
WEEK 16	Group presentations and final

APPROVED FOR ADOPTION/REVISION BY THE CRD/AP COMMITTEE ON : 2/21/05