

# **Chemistry 491 Capstone Experience I and II**

**Spring/Fall 2017**

**M-F hours by agreement**

**Byrd Biotechnology Center Room 107**

Instructor: Michael Norton

Office: Science 478 and BBSC 241K

Phone: 304-696-6627

E-Mail: [Norton@Marshall.edu](mailto:Norton@Marshall.edu)

Office Hours: Th 11 - 12 or other hours by appointment

## **Course Description**

491 Capstone Experience. 2-4 hrs. I, II.

## **Required Text, Additional Reading, and Other Materials**

Literature as required by the research project.

## **Recommended Materials**

Laboratory Notebook

## **Computer Requirements**

None

## **Program's Student Learning Outcomes**

Upon completion of the BS in chemistry students will be prepared to achieve success in their chosen profession.

## **Course Student Learning Outcomes and Assessment Measures**

<b>Upon completion of this course, students will be able to</b>	<b>Each student learning outcome will be assessed in the following manner:</b>
Design and perform experiments	Presentation to small group and evaluation by faculty member
Interpret experimental data	Presentation to small group and evaluation by faculty member
Communicate experimental results and their interpretation	Presentation to small group and evaluation by faculty member
Summarize a research project	Presentation to the full faculty or professional group of a capstone presentation and a capstone paper.

## **Course Requirements and Grading**

Research summaries = 50 % of grade, experimental design – 25% of grade and experimental results and interpretation = 25% of grade.

The grading scale is

90	–	100%	=	A
80	–	89	=	B
70	–	79	=	C
60	–	69	=	D
59	or lower		=	F

**Safety Issues:** This course is an experimental chemistry class that requires laboratory bench top work with both solid and liquid chemicals and their solutions. These include crystalline and powdery materials, some of which represent toxic substances, as well as strong acids and bases. All laboratory chemicals are considered to be hazardous materials. Therefore, constant and extreme caution as well as common sense should be exercised all the time during lab sessions. Application of general lab safety rules is a must in this class. All generated wastes should be appropriately segregated in specialized containers and then disposed accordingly. If you are pregnant or become pregnant during the semester, you should discuss the laboratory with your physician, possibly considering dropping the course because many substances used in the course are of unknown/undetermined toxicity or teratogenicity.

**Safety goggles (or safety glasses if appropriate), shoes which are closed at the toes (preferably waterproof) and appropriate clothing (lab coats are suggested) must be worn during the lab sessions at all times. Some vapors pose hazards for contact lens wearers. If you wear contacts, consider removing them before lab or using extreme precautions when using solvents/reagents which irritate eyes or interact with contact lens materials.**

University Policies are listed completely on this page: [http://www.marshall.edu/wpmu/academic-affairs/?page\\_id=802](http://www.marshall.edu/wpmu/academic-affairs/?page_id=802)

**Dropping a class:** It is your responsibility to understand the University's procedure for dropping a class. If you stop attending this class but do not follow proper procedure for dropping, you will receive a failing grade and may be financially obligated to pay for the class.

**Statement of nondiscrimination:** MU is an equal opportunity/affirmative action institution, and maintains a grievance procedure incorporating due process available to any person who believes he or she has been discriminated against. At all times, it is your right to address inquiries or concerns about possible discrimination to the Equal Opportunity Officer, Office of Human Resources. Concerns about discrimination can also be brought directly to your instructor's attention, and/or to the attention of your instructor's Department Chairman .

**Attendance Policy** A minimum of 90 hours of laboratory effort is expected per semester for a 3 credit capstone project.

**Academic Dishonesty Policy:** All students should be familiar with the university's policy concerning academic dishonesty

**Policy for Students with Disabilities:** Marshall University is committed to equal opportunity in education for all students, including those with physical, learning and psychological disabilities. University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117, phone 304 696-2271 to provide documentation of their disability. Following this, the DSS Coordinator will send a letter to each of the student's instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignment, testing and grading. The instructor and student will meet to discuss how the accommodation(s) requested will be provided. For more information, please visit <http://www.marshall.edu/disabled> or contact Disabled Student Services Office at Prichard Hall 11, phone 304-696-2271.

**University Computing Services' Acceptable Use Policy:** All students are responsible for knowing this policy, which can be found on the web at <http://www.marshall.edu/ucs/CS/acceptuse.asp>.

**Affirmative Action Policy:** Specifically, all students will be afforded equal opportunity without regard to race, color, sex, religion, age, disability, national origin, or sexual orientation.

**Inclement Weather Policy:** Students can find information concerning Marshall's policy regarding inclement weather at this link: [http://www.marshall.edu/assessment/Syllabus%20Information/University\\_Policies.doc](http://www.marshall.edu/assessment/Syllabus%20Information/University_Policies.doc).

A summary of all MU Academic policies can be found at:  
[http://www.marshall.edu/academic-affairs/?page\\_id=802](http://www.marshall.edu/academic-affairs/?page_id=802)

If any part of this syllabus is unclear, please ask me for clarification immediately.