R 10/24

Departmental Honors in Chemistry
University of Mary Washington
Department of Chemistry and Physics

I. Objectives

Departmental Honors in chemistry is designed to provide a student with the opportunity to develop their academic abilities through completion of a chemical or biochemical research project. A student participating in the program will work independently under the direction of a faculty advisor, and they will devote significant time to intensive, creative study of a research problem. The student will be expected to take maximum advantage of the research opportunity, and success in the program will be determined by evaluation of the product of the research with due consideration for the student's intellectual development and growth. A student who successfully completes the Departmental Honors will be recognized at Graduation with the awarding of Departmental Honors in Chemistry.

II. Program Summary

A student who qualifies (Sections III. A and III. B) for Departmental Honors in Chemistry will pursue independent study (CHEM 491, at least six total credits over two semesters) throughout their final two semesters at UMW. The six credits will be distributed over the two semesters, either 3 and 3 per semester or 4 and 2, depending on discussion with faculty advisor. The subject of the research is selected by the student in consultation with his or her advisor (III. C), and it must be presented in the form of a research proposal (III. D) to the student's honors committee (III. C) for approval. The committee will review the proposal and,

acting on behalf of the department, will decide whether the work is suitable for departmental honors.

The honors project must involve extensive laboratory investigation, which may include rigorous computer programming and/or calculations, culminating in a thesis (IV. A), a public presentation to the community (IV. B), and an oral examination (IV. C) by the student's honors committee. The student must demonstrate a thorough understanding of the background and results of the project and show evidence of intellectual growth as a result of participation in the departmental honors project. If the quality of the work done by the student, as determined by the faculty advisor, merits a grade of "B+" or higher each semester and if at least three members of the student's honors committee find the thesis, the seminar, and the oral examination acceptable, the student will be awarded Departmental Honors in Chemistry at Graduation, provided all other requirements for graduation are met.

A suggested timetable for the honors student is given in Appendix A.

III. Eligibility for Departmental Honors in Chemistry

A. GPA Requirement

In order to qualify for Departmental Honors in Chemistry, a student must have junior or senior status, be a declared major in Chemistry or Biochemistry, and have at least a 3.25 major GPA and a 3.25 overall GPA.

B. Independent Study Course Requirements/Experience

By the conclusion of the Departmental Honors Project, the student must complete at least 6 credits of CHEM 491 in their final two semesters at UMW. The student will

complete the departmental honors work over the course of two semesters (either fall – spring or spring-fall, depending on intended date of graduation).

C. Faculty Advisor

A student who is considering applying for departmental Honors should begin discussions with a faculty advisor during their junior year. The faculty advisor may be any full-time member of the chemistry faculty whose area of expertise best matches the interests of the student. The advisor will confer with the prospective departmental honors student to plan a program of background reading in preparation for the student's work during the senior year. The student is encouraged to participate in URES 197 or CHEM 491 readings during the junior year to begin to prepare the proposal for the research project.

The advisor will be responsible for monitoring the student's progress throughout the honors project and for assigning the grades for courses, CHEM 491, and he or she will serve as the chair of the departmental honors committee (consisting of the advisor and three additional full-time members of the chemistry program), which will give final approval for the awarding of Departmental Honors in Chemistry.

D. Research Proposal

By the end of the first week of class in the first term for completion of departmental honors, the student must submit to the faculty advisor a three-page research proposal with references. This document will outline the scope of the research problem and the nature of the experiments planned. No results are expected at this point, but a clear plan of research should be apparent. The advisor will assemble the student's departmental

honors committee, which will review the proposal and give its approval to commence the program. The committee will make its decision before the end of the third week of class.

E. Mid-year Evaluation

By the last day of classes in the first semester of the departmental honors project, the student must submit a draft of the Introduction section of the thesis to the faculty advisor. Based on this draft and the advisor's evaluation of the student's progress in the research, the advisor will assign a grade for CHEM 491. If the assigned grade is less than B+ or if the advisor believes that the final results of the research are likely to be inadequate, the student will be advised to discontinue the pursuit of departmental honors. At the discretion of the advisor, the student may continue the research as an independent study in the subsequent semester.

IV. Requirements

A. Thesis

The culmination of each honors project is a thesis presented as evidence of achievement in the work. The thesis should be an organized, comprehensive account of the background and results of the research written in accordance with accepted standards of literary style. A student continuing work on a project of a previous student should remember that each thesis is an individual effort and should be written in their own style and should not copy the previous thesis. The authority for all stylistic questions will be current version of *The ACS Style Guide,*

The student must provide draft copies of the thesis for each member of the departmental honors committee. The student should provide the copy in the preferred

format (either electronic or hardcopy) for each member of the committee. After acceptance by the examination committee and final editing, electronic copies of the thesis are provided to the university archives, the department, and the advisor. Additional copies of the thesis are the prerogative of the student and advisor.

For more information regarding the format for the thesis, see Appendix B.

B. Public Presentation

A seminar presenting the departmental honors work to the community will be scheduled for the last week of class or during the final exam period, depending on the schedules of the departmental honors committee members and the student. This presentation is separate from any seminars the student is required to present for any other course.

C. Oral Examination

If the faculty advisor has assigned a grade of B+ or better to the student's work in CHEM 491 each semester, the honors candidate will undergo a final oral examination on the honors project conducted by the departmental honors committee. Following the public presentation and before the end of the final examination period, the student will meet in closed session with the departmental honors committee to answer questions about the work. A copy of the thesis must be made available to each committee member at least one week before the scheduled oral examination. If at least three of the committee members find the thesis, the seminar, and the oral examination acceptable, the student will be awarded Departmental Honors in Chemistry at Graduation, provided all other requirements for graduation are met.

Appendix A

Suggested Timetable for the Departmental Honors in Chemistry

Note: Semester 1 is the first semester in which a student is completing departmental honors. For a student graduating in December, this would be a spring semester. For a student graduating in May or July, this would be a fall semester. Semester 2 would be the subsequent semester (i.e. Fall for December graduate, Spring for May graduate).

Junior year	Recommendation (not required): participate in URES 197, CHEM 491 Readings, or Summer Science
Pre-registration advising period for Semester 1	Select a subject and advisor for the departmental honors project
Course registration for semester 1	Register for 3-4 credits of CHEM 491 for semester 1
Semester break recommendation	Complete background reading and work on draft of proposal
Semester 1, end of week one	Submit the research proposal and select the examination committee
Semester 1, end of week three	Deadline for the examination committee to review and approve the research proposal
Semester 2 course registration	Register for 2-3 credits of CHEM 491 for semester 2
Last day of semester 1	Submit a draft of the Introduction section of the thesis to the faculty advisor
Week 10 of semester 2	Submit the first draft of the completed thesis to the faculty advisor (subsequent drafts as necessary must be completed prior to submission to the examination committee)

By week 11 of semester 2	Schedule the public presentation and the oral examination
One week prior to the oral examination	Submit the thesis to the examination committee
Last week of class	Public presentation
Last week of classes or Final exam week	Oral examination
Last day of final exams	Submit corrected copies of the thesis to UMW archives, to the department, and to the advisor

Appendix B
Format of the Thesis

The format of the thesis may be determined by the student and his or her advisor, but certain matters of style as outlined in *The ACS Style Guide,* should be followed. It is important to keep in mind the purpose of the thesis and its intended audience. The final document must adhere to the highest professional standards since it represents a permanent record of the work.

The manuscript must be double-spaced with 1-inch margins on the top, right, and bottom edges and a 1.5-inch margin on the left edge to leave room for binding. The text should be done in 12-pt font. The pages should be numbered on the bottom of each page. Figures and tables should be numbered consecutively and should be placed in the manuscript as close as possible to the point of reference in the text unless they are so numerous that they would hinder the reader. In that case, or if they present only supporting data, they should appear in an appendix. *The ACS Style Guide* should be consulted for the correct format for references.

Copyright permission must be obtained from the publisher or copyright holder if a student intends to reproduce a published figure, including figures obtained from the Internet. It is imperative that the student request copyright permission early in the rare case it is denied so that another figure may be substituted. When requesting permission, the student should include in the request his or her name and contact information; the date(s) when copies will be made; the number of copies to be made; the purpose of use (thesis for undergraduate honors project and/or presentation); the particular figure or piece of work to be copied; the author or editor of the book or journal; and the title of the article, journal, or book including the edition, the publisher's name, the copyright year,
and ISBN or ISSN if available.

Acceptable references for the thesis are journals and other periodicals (including electronic journals), books, government documents, patents, and other permanent materials. Internet sites are not acceptable as thesis references since they frequently contain incorrect information, may change without warning or record, are often anonymous, and are generally

not subject to peer review. If accurate when compared with other acceptable references, figures from Internet sites may be used in the thesis.

Each member of the departmental honors committee must be provided with a copy of the thesis at least one week before the oral examination. Upon acceptance of the thesis and final editing, the student must submit an electronic copy of their thesis to the UMW archive; . Students must also submit a final, edited and approved electronic copy of the thesis to their faculty advisor.

Order of Pages

Approval sheet (see sample)	not numbered
Title Page (see sample)	not numbered
Abstract (approximately 200 words)	i
Acknowledgements	ii
Table of Contents (see sample)	iii
List of Tables	iv
List of Figures	v
Text	1
References	
Selected Bibliography	
Appendices	
Vita (see sample)	not numbered

SAMPLE APPROVAL FORM

Title:

Name of Candidate: (full name, no initials)

Approved by Examination Committee:

_____

A. B. Cee
Associate Professor Chemistry
Sponsor

_____

D. E. Eff
Rank

_____

G. H. Eye
Rank

_____

J. K. Ell
Rank

Date Approved: _____

SAMPLE TITLE PAGE

Title

By
(name of candidate)

Thesis submitted to the faculty of the University of Mary Washington in partial fulfillment of the requirements for graduation with
Honors in Chemistry
(year of graduation)

SAMPLE TABLE OF CONTENTS

Table of Contents

etc.

SAMPLE VITA

Name of Candidate:	full name, no initials
Permanent Address:	street city, state, zip
Date of Birth:	month, date, year
Place of Birth:	city, state
Secondary Education:	name of school city, state
Major Subject(s):	Chemistry
UMW Year of Graduation:	
Honors:	list all honors, include dates if appropriate
Professional Positions:	list with dates
Publications:	full citation with title
Presentations:	full citation with title