



UNIVERSITY OF MINNESOTA
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University of Minnesota Duluth 2018-2020 Graduate Programs

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For current information, refer to:

- Program search: z.umn.edu/publicprogramsearch
- Course search: z.umn.edu/publiccoursecatalog
- University policies: policy.umn.edu

University of Minnesota Duluth
1049 University Drive
Duluth, MN
55812

Table of contents

*Indicates a free-standing minor

College of Liberal Arts	
English M.A.	1
English Minor	7
Geographical Information Science Post-baccalaureate Certificate	8
Liberal Studies M.Lib.Stu.	9
Liberal Studies Minor	11
Linguistics Minor*	12
Tribal Administration and Governance M.T.A.G.	13
Tribal Resource and Environmental Stewardship M.T.R.E.S.	15
College of Education and Human Service Professions	
Autism Spectrum Disorders Postbaccalaureate Certificate	17
Communication Sciences and Disorders M.A.	18
Community College Teaching Postbaccalaureate Certificate	20
Education Administration Specialist Ed S	21
Education M.Ed.	24
Education Computing and Technology Postbaccalaureate Certificate	26
Environmental Education M.E.Ed.	28
Environmental Education Postbaccalaureate Certificate	30
Psychological Science M.A.	31
Social Work M.S.W.	35
Social Work Minor	39
Teaching and Learning Ed.D.	40
Labovitz School of Business and Economics	

Business Administration M.B.A	42
School of Fine Arts	
Music M.M.	45
Music Minor	49
Swenson College of Science and Engineering	
Applied and Computational Mathematics Minor	50
Applied Materials Science M.S.	51
Chemical Engineering M.S.Ch.E	54
Chemistry M.S.	56
Chemistry Minor	58
Civil Engineering M.S.	59
Computer Science M.S.	62
Computer Science Minor	65
Electrical Engineering M.S.E.E.	66
Electrical Engineering Minor	69
Environmental Health and Safety M.Env.Hlth.Sa.	70
Geological Sciences M.S.	72
Geological Sciences Minor	75
Integrated Biosciences M.S.	76
Integrated Biosciences Minor	78
Master of Engineering M.Eng.	79
Mathematical Sciences M.S.	81
Mechanical Engineering M.S.M.E.	84
Physics M.S.	87
Physics Minor	89

University of Minnesota Duluth	
Integrated Biosciences Ph.D.	90
Water Resources Science M.S.	92
Water Resources Science Minor	97
Water Resources Science Ph.D.	99



Duluth Campus
English M.A.
English

College of Arts, Humanities and Social Sciences

Link to a [list of faculty](#) for this program.

Contact Information:

Department of English, 410 Humanities, 1201 Ordean Court, University of Minnesota Duluth, Duluth, MN 55812 (218-726-8228; fax: 218-726-7457)

Email: enql@d.umn.edu

Website: <http://www.d.umn.edu/enql/englishgrad/index.html>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 32
- This program does not require summer semesters for timely completion.
- Degree: Master of Arts

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master of arts program offers courses in English, Irish, and American literature; creative writing; linguistics; composition and rhetorical theory; book history; publishing; and English education. The program offers five emphases: Literary Studies, for concentrated study of literature; Literature, Language, and Culture for interdisciplinary study; Publishing and Print culture; Writing Studies; and Creative Writing.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

An undergraduate degree including at least 30 credits in English or a related humanities field.

Other requirements to be completed before admission:

Entering students should have completed 30 credits in English (these may include credits in literature, language, advanced composition and other humanities fields), including 20 upper-division English courses that offer broad coverage of English and American literature. Any deficiencies will be determined and considered by the director of graduate studies in consultation with the graduate committee. Certain course prerequisites may be taken concurrently with graduate work and may be applied toward degree requirements.

Special Application Requirements:

GRE scores are on Verbal and Analytical Writing portions.

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 100
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 600
- IELTS
 - Total Score: 7
- MELAB
 - Final score: 80

The preferred English language test is Test of English as Foreign Language

Key to [test abbreviations](#)(GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan B: Plan B requires 26 major credits and 0 to 6 credits outside the major. The final exam is written and oral. A capstone project is required.

Capstone Project: This degree requires two Plan B Projects totaling 120 hours of effort before taking the final exam. The projects normally are completed in connection with courses in English or in a related field. A completed project must be approved by a graduate faculty member.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

Language Requirement: Proficiency in an approved language.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 1 semester must be completed before filing a Degree Program Form.

1. Requires certification of a reading knowledge appropriate to the candidate's area of study, of Latin, Greek, French, Italian, Spanish, Russian, American Sign Language, or other approved language by the Graduate Education Committee or completion of at least 6 course credits beyond the required credits.
2. A minimum of two 8xxx level courses **MUST** be taken in addition to ENGL 8906. ENGL 8902 does not count towards this requirement except in the Writing Studies emphasis.
3. Courses at the 4000-level in English, writing studies and linguistics may not be included in degree in English.
4. Some 4xxx courses are permitted in the related field.

Required Seminar (4 cr)

[ENGL 8906](#) - Introduction to Critical Theory (4.0 cr)

Emphases Options

Literature, Language & Culture

At least 25 credits in the major, distributed in literature, linguistics, information design, or composition/rhetoric; and 2 Plan B projects.

Required English, Linguistics, and Writing Studies Courses

Take 20 or more credit(s) from the following:

- [ENGL 5116](#) - Advanced Writing of Fiction (4.0 cr)
- [ENGL 5122](#) - Advanced Writing of Poetry (4.0 cr)
- [ENGL 5222](#) - Shakespeare (4.0 cr)
- [ENGL 5270](#) - Digital Literature, Video Games and Online Culture (4.0 cr)
- [ENGL 5312](#) - Chaucer (4.0 cr)
- [ENGL 5375](#) - Modern Poetry (4.0 cr)
- [ENGL 5444](#) - Childhood in Literature, History and Culture (4.0 cr)
- [ENGL 5541](#) - Restoration and 18th-Century Literature (4.0 cr)
- [ENGL 5561](#) *{Inactive}* (4.0 cr)
- [ENGL 5562](#) - Studies in 19th-Century British Literature (4.0 cr)
- [ENGL 5572](#) - American Renaissance (4.0 cr)
- [ENGL 5574](#) - Studies in American Literature to 1914 (4.0 cr)
- [ENGL 5575](#) - Studies in American Literature after 1914 (4.0 cr)
- [ENGL 5577](#) - Major American Authors (4.0 cr)
- [ENGL 5584](#) - Mapping Postcolonial Literature (4.0 cr)
- [ENGL 5591](#) - Independent Study (1.0 - 4.0 cr)
- [ENGL 5595](#) - Special Topics in English (various titles to be assigned) (4.0 cr)
- [ENGL 5661](#) - Publishing the Middle Ages (4.0 cr)
- [ENGL 5662](#) - The Making of a Major Author: The Scholarly Edition in 17th- and 18th-Century England (4.0 cr)
- [ENGL 5663](#) - Readers and the History of Books (4.0 cr)
- [ENGL 5664](#) *{Inactive}* (4.0 cr)
- [ENGL 5665](#) - The American Literary Marketplace (4.0 cr)



- ENGL 5802 - English Language for Educators (4.0 cr)
- ENGL 5821 - History of the English Language (4.0 cr)
- ENGL 5902 - Teaching Writing (4.0 cr)
- ENGL 8171 - Seminar in Pre-1800 British Literature (4.0 cr)
- ENGL 8181 - Seminar in British Literature, Late 18th - 20th Century (4.0 cr)
- ENGL 8191 - Seminar: American Literature (4.0 cr)
- ENGL 8906 - Introduction to Critical Theory (4.0 cr)
- ENGL 8931 - Practicum in Teaching Literature (1.0 - 4.0 cr)
- LING 5103 *{Inactive}*(3.0 cr)
- LING 8591 - Independent Study in Linguistics (1.0 - 3.0 cr)
- WRIT 5100 - Introduction to Grant Writing and Project Planning (3.0 cr)
- WRIT 5197 - Internship in Writing (1.0 - 3.0 cr)
- WRIT 5230 - Web Design and Digital Culture (3.0 cr)
- WRIT 5250 - New Media Writing (3.0 cr)
- WRIT 5260 - Visual Narrative and Analytical Design (3.0 cr)
- WRIT 8994 - Directed Research in Writing Studies (1.0 - 3.0 cr)

Plan B Project

Take exactly 2 credit(s) from the following:

- ENGL 8094 - Plan B Research (DRS) (1.0 cr)
- WRIT 8094 - Plan B Research (DRS) (1.0 cr)

Related Field

In order to reach the minimum 32 credits, course(s) may be from ENGL coursework, another graduate program or approved language course(s). Credits in a related field are determined in consultation with the director of graduate studies.

-OR-

Literary Studies

At least 26 credits in the major and 2 Plan B projects.

Required English, Linguistics, and Writing Studies Courses

Take 20 - 26 credit(s) from the following:

- ENGL 5116 - Advanced Writing of Fiction (4.0 cr)
- ENGL 5122 - Advanced Writing of Poetry (4.0 cr)
- ENGL 5222 - Shakespeare (4.0 cr)
- ENGL 5270 - Digital Literature, Video Games and Online Culture (4.0 cr)
- ENGL 5312 - Chaucer (4.0 cr)
- ENGL 5375 - Modern Poetry (4.0 cr)
- ENGL 5444 - Childhood in Literature, History and Culture (4.0 cr)
- ENGL 5541 - Restoration and 18th-Century Literature (4.0 cr)
- ENGL 5561 *{Inactive}*(4.0 cr)
- ENGL 5562 - Studies in 19th-Century British Literature (4.0 cr)
- ENGL 5572 - American Renaissance (4.0 cr)
- ENGL 5574 - Studies in American Literature to 1914 (4.0 cr)
- ENGL 5575 - Studies in American Literature after 1914 (4.0 cr)
- ENGL 5577 - Major American Authors (4.0 cr)
- ENGL 5584 - Mapping Postcolonial Literature (4.0 cr)
- ENGL 5591 - Independent Study (1.0 - 4.0 cr)
- ENGL 5595 - Special Topics in English (various titles to be assigned) (4.0 cr)
- ENGL 5661 - Publishing the Middle Ages (4.0 cr)
- ENGL 5662 - The Making of a Major Author: The Scholarly Edition in 17th- and 18th-Century England (4.0 cr)
- ENGL 5663 - Readers and the History of Books (4.0 cr)
- ENGL 5664 *{Inactive}*(4.0 cr)
- ENGL 5665 - The American Literary Marketplace (4.0 cr)
- ENGL 5802 - English Language for Educators (4.0 cr)
- ENGL 5821 - History of the English Language (4.0 cr)
- ENGL 5902 - Teaching Writing (4.0 cr)
- ENGL 8171 - Seminar in Pre-1800 British Literature (4.0 cr)
- ENGL 8181 - Seminar in British Literature, Late 18th - 20th Century (4.0 cr)
- ENGL 8191 - Seminar: American Literature (4.0 cr)
- ENGL 8906 - Introduction to Critical Theory (4.0 cr)
- ENGL 8931 - Practicum in Teaching Literature (1.0 - 4.0 cr)

Plan B Project

Take exactly 2 credit(s) from the following:

- ENGL 8094 - Plan B Research (DRS) (1.0 cr)
- WRIT 8094 - Plan B Research (DRS) (1.0 cr)

Related Field

In order to reach the minimum 32 credits, course(s) may be from ENGL coursework, another graduate program or approved language course(s). Credits in a related field are determined in consultation with the director of graduate studies.

-OR-

Publishing & Print Culture

At least 27 credits within the major; distributed in literature, publishing information design, and print culture and 2 Plan B projects. Students must have a minimum of 33 credits between ENGL courses and related field courses.

Required English, Linguistics, and Writing Studies Courses

Take 21 or more credit(s) from the following:

- ENGL 5116 - Advanced Writing of Fiction (4.0 cr)
- ENGL 5122 - Advanced Writing of Poetry (4.0 cr)
- ENGL 5222 - Shakespeare (4.0 cr)
- ENGL 5270 - Digital Literature, Video Games and Online Culture (4.0 cr)
- ENGL 5312 - Chaucer (4.0 cr)
- ENGL 5375 - Modern Poetry (4.0 cr)
- ENGL 5444 - Childhood in Literature, History and Culture (4.0 cr)
- ENGL 5541 - Restoration and 18th-Century Literature (4.0 cr)
- ENGL 5561 *{Inactive}*(4.0 cr)
- ENGL 5562 - Studies in 19th-Century British Literature (4.0 cr)
- ENGL 5572 - American Renaissance (4.0 cr)
- ENGL 5574 - Studies in American Literature to 1914 (4.0 cr)
- ENGL 5575 - Studies in American Literature after 1914 (4.0 cr)
- ENGL 5577 - Major American Authors (4.0 cr)
- ENGL 5584 - Mapping Postcolonial Literature (4.0 cr)
- ENGL 5591 - Independent Study (1.0 - 4.0 cr)
- ENGL 5595 - Special Topics in English (various titles to be assigned) (4.0 cr)
- ENGL 5661 - Publishing the Middle Ages (4.0 cr)
- ENGL 5662 - The Making of a Major Author: The Scholarly Edition in 17th- and 18th-Century England (4.0 cr)
- ENGL 5663 - Readers and the History of Books (4.0 cr)
- ENGL 5664 *{Inactive}*(4.0 cr)
- ENGL 5665 - The American Literary Marketplace (4.0 cr)
- ENGL 5802 - English Language for Educators (4.0 cr)
- ENGL 5821 - History of the English Language (4.0 cr)
- ENGL 5902 - Teaching Writing (4.0 cr)
- ENGL 8171 - Seminar in Pre-1800 British Literature (4.0 cr)
- ENGL 8181 - Seminar in British Literature, Late 18th - 20th Century (4.0 cr)
- ENGL 8191 - Seminar: American Literature (4.0 cr)
- ENGL 8906 - Introduction to Critical Theory (4.0 cr)
- ENGL 8931 - Practicum in Teaching Literature (1.0 - 4.0 cr)
- LING 5103 *{Inactive}*(3.0 cr)
- LING 8591 - Independent Study in Linguistics (1.0 - 3.0 cr)
- WRIT 5100 - Introduction to Grant Writing and Project Planning (3.0 cr)
- WRIT 5197 - Internship in Writing (1.0 - 3.0 cr)
- WRIT 5230 - Web Design and Digital Culture (3.0 cr)
- WRIT 5250 - New Media Writing (3.0 cr)
- WRIT 5260 - Visual Narrative and Analytical Design (3.0 cr)
- WRIT 8994 - Directed Research in Writing Studies (1.0 - 3.0 cr)

Plan B Project

Take exactly 2 credit(s) from the following:

- ENGL 8094 - Plan B Research (DRS) (1.0 cr)
- WRIT 8094 - Plan B Research (DRS) (1.0 cr)

Related Field

In order to reach the minimum 33 credits, course(s) may be from ENGL coursework, another graduate program or approved language course(s). Credits in a related field are determined in consultation with the director of graduate studies.

-OR-

Writing Studies

At least 26 credits in the major, distributed in literature, linguistics, composition/rhetoric, information design and writing and 2 Plan B projects.

Required English, Linguistics, and Writing Studies Courses

Take 24 or more credit(s) from the following:

- ENGL 5116 - Advanced Writing of Fiction (4.0 cr)
- ENGL 5122 - Advanced Writing of Poetry (4.0 cr)
- ENGL 5222 - Shakespeare (4.0 cr)
- ENGL 5270 - Digital Literature, Video Games and Online Culture (4.0 cr)
- ENGL 5312 - Chaucer (4.0 cr)
- ENGL 5375 - Modern Poetry (4.0 cr)
- ENGL 5444 - Childhood in Literature, History and Culture (4.0 cr)



- ENGL 5541 - Restoration and 18th-Century Literature (4.0 cr)
- ENGL 5561 *{Inactive}*(4.0 cr)
- ENGL 5562 - Studies in 19th-Century British Literature (4.0 cr)
- ENGL 5572 - American Renaissance (4.0 cr)
- ENGL 5574 - Studies in American Literature to 1914 (4.0 cr)
- ENGL 5575 - Studies in American Literature after 1914 (4.0 cr)
- ENGL 5577 - Major American Authors (4.0 cr)
- ENGL 5584 - Mapping Postcolonial Literature (4.0 cr)
- ENGL 5591 - Independent Study (1.0 - 4.0 cr)
- ENGL 5595 - Special Topics in English (various titles to be assigned) (4.0 cr)
- ENGL 5661 - Publishing the Middle Ages (4.0 cr)
- ENGL 5662 - The Making of a Major Author: The Scholarly Edition in 17th- and 18th-Century England (4.0 cr)
- ENGL 5663 - Readers and the History of Books (4.0 cr)
- ENGL 5664 *{Inactive}*(4.0 cr)
- ENGL 5665 - The American Literary Marketplace (4.0 cr)
- ENGL 5802 - English Language for Educators (4.0 cr)
- ENGL 5821 - History of the English Language (4.0 cr)
- ENGL 5902 - Teaching Writing (4.0 cr)
- ENGL 8171 - Seminar in Pre-1800 British Literature (4.0 cr)
- ENGL 8181 - Seminar in British Literature, Late 18th - 20th Century (4.0 cr)
- ENGL 8191 - Seminar: American Literature (4.0 cr)
- ENGL 8906 - Introduction to Critical Theory (4.0 cr)
- ENGL 8931 - Practicum in Teaching Literature (1.0 - 4.0 cr)
- LING 5103 *{Inactive}*(3.0 cr)
- LING 8591 - Independent Study in Linguistics (1.0 - 3.0 cr)
- WRIT 5100 - Introduction to Grant Writing and Project Planning (3.0 cr)
- WRIT 5197 - Internship in Writing (1.0 - 3.0 cr)
- WRIT 5230 - Web Design and Digital Culture (3.0 cr)
- WRIT 5250 - New Media Writing (3.0 cr)
- WRIT 5260 - Visual Narrative and Analytical Design (3.0 cr)
- WRIT 8902 - Teaching College Writing (3.0 cr)
- WRIT 8910 - Practicum in Teaching Writing (1.0 - 4.0 cr)
- WRIT 8994 - Directed Research in Writing Studies (1.0 - 3.0 cr)

Plan B Project

Take 2 - 3 credit(s) from the following:

- ENGL 8094 - Plan B Research (DRS) (1.0 cr)
- WRIT 8094 - Plan B Research (DRS) (1.0 cr)

Related Field

In order to reach the minimum 32 credits, course(s) may be from ENGL coursework, another graduate program or approved language course(s). Credits in a related field are determined in consultation with the director of graduate studies.

-OR-

Creative Writing

At least 26 credits in the major, distributed in writing and literature; and 2 Plan B projects.

Required English, Linguistics, and Writing Studies Courses

Take 20 or more credit(s) from the following:

Creative Writing

A course in related field as approved by advisor and DGS may be substituted.

Take 1 or more course(s) from the following:

- ENGL 5116 - Advanced Writing of Fiction (4.0 cr)
- ENGL 5122 - Advanced Writing of Poetry (4.0 cr)
- ENGL 5591 - Independent Study (1.0 - 4.0 cr)
- WRIT 5250 - New Media Writing (3.0 cr)

Literature and Context Courses

Take 3 or more course(s) from the following:

Contemporary Literatures

Take 1 or more course(s) from the following:

- ENGL 5270 - Digital Literature, Video Games and Online Culture (4.0 cr)
- ENGL 5375 - Modern Poetry (4.0 cr)
- ENGL 5444 - Childhood in Literature, History and Culture (4.0 cr)
- ENGL 5564 - Studies in British Literature after 1900 (4.0 cr)
- ENGL 5575 - Studies in American Literature after 1914 (4.0 cr)
- ENGL 5577 - Major American Authors (4.0 cr)
- ENGL 5584 - Mapping Postcolonial Literature (4.0 cr)
- ENGL 5591 - Independent Study (1.0 - 4.0 cr)
- ENGL 8191 - Seminar: American Literature (4.0 cr)



•**Historical and Material Context of Creative Writing**

Take 1 or more course(s) from the following:

- ENGL 5561 (*Inactive*) (4.0 cr)
- ENGL 5562 - Studies in 19th-Century British Literature (4.0 cr)
- ENGL 5564 - Studies in British Literature after 1900 (4.0 cr)
- ENGL 5572 - American Renaissance (4.0 cr)
- ENGL 5574 - Studies in American Literature to 1914 (4.0 cr)
- ENGL 5591 - Independent Study (1.0 - 4.0 cr)
- ENGL 5661 - Publishing the Middle Ages (4.0 cr)
- ENGL 5662 - The Making of a Major Author: The Scholarly Edition in 17th- and 18th-Century England (4.0 cr)
- ENGL 5663 - Readers and the History of Books (4.0 cr)
- ENGL 5665 - The American Literary Marketplace (4.0 cr)
- ENGL 5821 - History of the English Language (4.0 cr)
- ENGL 5902 - Teaching Writing (4.0 cr)
- ENGL 8171 - Seminar in Pre-1800 British Literature (4.0 cr)
- ENGL 8181 - Seminar in British Literature, Late 18th - 20th Century (4.0 cr)
- ENGL 8191 - Seminar: American Literature (4.0 cr)
- WRIT 5230 - Web Design and Digital Culture (3.0 cr)
- WRIT 5260 - Visual Narrative and Analytical Design (3.0 cr)

Project B

Take exactly 2 credit(s) from the following:

- ENGL 8094 - Plan B Research (DRS) (1.0 cr)
- WRIT 8094 - Plan B Research (DRS) (1.0 cr)



Duluth Campus

English Minor

English

College of Arts, Humanities and Social Sciences

Link to a [list of faculty](#) for this program.

Contact Information:

Department of English, 410 Humanities, 1201 Ordean Court, University of Minnesota Duluth, Duluth, MN 55812 (218-726-8228; fax: 218-726-7457)

Email: enql@d.umn.edu

Website: <http://www.d.umn.edu/enql>

- Program Type: Graduate minor related to major
- Requirements for this program are current for Fall 2018
- Length of program in credits (Masters): 8
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master's minor program offers courses in English, Irish, and American literature; creative writing; linguistics; composition and rhetorical theory; book history; publishing; and English education. The program has three emphases: a literary studies emphasis for concentrated study of literature, an interdisciplinary emphasis in English studies, and an emphasis in publishing and print culture.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

Required Courses (8 cr)

Take 8 or more credit(s) from the following:

- ENGL 5xxx
- ENGL 8xxx



Duluth Campus

Geographical Information Science Post-baccalaureate Certificate

Geography & Philosophy

College of Arts, Humanities and Social Sciences

Link to a [list of faculty](#) for this program.

- Program Type: Post-baccalaureate credit certificate/licensure/endorsement
- Requirements for this program are current for Fall 2018
- Length of program in credits: 16
- This program does not require summer semesters for timely completion.
- Degree: Geographic Information Science Certificate

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The post baccalaureate certificate in GIS is a 16-credit program designed for graduate students or professionals seeking to acquire advanced skills in geographical information analysis to complement their main area of expertise.

Certificate students are required to take one fundamental class on GIS principles, methods and techniques and choose three elective courses that cover various applications of GIS. Electives can be selected based on each student specific interests and/or schedule. It should be noted that a sequence of 3 electives are offered as night classes, allowing students who can take only night classes to complete the certificate in two years.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 2.50.

Applicants must have completed a bachelor's degree and have a preferred undergraduate GPA of at least 2.50 or a graduate GPA of at least 2.70

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

Required Core (4 cr)

GIS 4565 *{Inactive}*(4.0 cr)

or GIS 4xxx or 5xxx (4 cr) if GIS 3564 has already been completed

Electives (12 cr)

Take 3 or more course(s) totaling 12 or more credit(s) from the following:

Take at most 4 credit(s) from the following:

- GIS 4xxx
- Take 2 or more course(s) totaling 8 or more credit(s) from the following:
 - GIS 5xxx

Duluth Campus

Liberal Studies M.Lib.Stu.

College of Liberal Arts - Adm

College of Arts, Humanities and Social Sciences

Link to a [list of faculty](#) for this program.

Contact Information:

College of Liberal Arts, MLS Program, University of Minnesota Duluth, 494 Humanities, 1201 Ordean Court, Duluth, MN 55812 (218-726-8437)

Website: <http://cla.d.umn.edu/departments/women-gender-and-sexuality-studies/umdmls>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 30
- This program does not require summer semesters for timely completion.
- Degree: Master of Liberal Studies

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The interdisciplinary master of liberal studies (MLS) offers students an opportunity to engage in advanced studies in the social sciences, the humanities, or a blend of these two. This program prioritizes degree programs that adopt multiple disciplinary approaches to their subject matter and fosters cross-disciplinary skills at the service of a focused research question. To complete the MLS degree, at least one to three papers or alternative projects with an in-depth exploration of an interdisciplinary topic are required.

Program Delivery

This program is available:

- partially online (between 50% to 80% of instruction is online)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Entering MLS students should have a bachelor's degree or equivalent.

Other requirements to be completed before admission:

For information about the application process, refer to www.d.umn.edu/grad/applicationinstructions.php.

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan B: Plan B requires 12 to 30 major credits and 0 to 18 credits outside the major. The final exam is oral. A capstone project is required.

Capstone Project: The Plan B project is an expansion of work done in a course or another topic of special interest. Plan B papers and projects are submitted to the examining committee before the student's final oral presentation and examination and represent 120 hours



of independent research.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

The MLS is offered only under Plan B. One to three Plan B papers or creative projects are required. Inclusion of 4xxx courses on degree program forms is subject to advisor and director of Graduate Studies approval.

Required Courses (12 cr)

[MPS 8001](#) - Theories, Methods and Applications of Graduate Study (4.0 cr)

[MPS 8501](#) - Seminar: Community Engagement (4.0 cr)

[MPS 8502](#) - Seminar: International Perspectives (4.0 cr)

Elective (18 cr)

In order to reach the 30 minimum required credits, elective credits can be from elective coursework, another graduate program or programs.



Duluth Campus

Liberal Studies Minor

Justice Culture Social Change

College of Arts, Humanities and Social Sciences

Link to a [list of faculty](#) for this program.

Contact Information:

College of Liberal Arts, M.L.S. Program, University of Minnesota Duluth, 104 Darland Administration Building, 1049 University Drive, Duluth, MN 55812 (218-726-8437)

- Program Type: Graduate minor related to major
- Requirements for this program are current for Fall 2018
- Length of program in credits (Masters): 6
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

A minor in liberal studies allows current graduates to broaden their intellectual horizons through in depth exploration of a variety of interdisciplinary topics.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses towards program requirements is not permitted.

A master's-level minor in liberal studies requires 6 credits of courses approved by the director of graduate studies.

Required Coursework (6 cr)

Take 6 or more credit(s) from the following:

- MLS 8xxx



Duluth Campus

Linguistics Minor

English Linguistics and Writing Studies

College of Arts, Humanities and Social Sciences

Link to a [list of faculty](#) for this program.

Contact Information:

Program in Linguistics, University of Minnesota Duluth, 435 Humanities Building, 1201 Ordean Court, Duluth, MN 55812 (218-726-8131; fax 218-726-6882)

Email: mlinn@d.umn.edu

Website: <http://www.d.umn.edu/writ>

- Program Type: Graduate free-standing minor
- Requirements for this program are current for Fall 2018
- Length of program in credits (Masters): 6
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

Graduate students may elect linguistics--which is offered interdepartmentally and through the Program in Linguistics--as a related field, or, with approval of the director of graduate studies of the major, as a designated minor.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses towards program requirements is not permitted.

Required Courses (6 cr)

Take 6 or more credit(s) from the following:

- ENGL 5802 - English Language for Educators (4.0 cr)
- ENGL 5821 - History of the English Language (4.0 cr)
- LING 5195 *{Inactive}*(1.0 - 4.0 cr)
- LING 5811 *{Inactive}*(4.0 cr)
- LING 5852 - Practicum in Teaching Linguistics (3.0 cr)
- LING 8591 - Independent Study in Linguistics (1.0 - 3.0 cr)

Duluth Campus

Tribal Administration and Governance M.T.A.G.

American Indian Studies

College of Arts, Humanities and Social Sciences

Link to a [list of faculty](#) for this program.

Contact Information:

Department of American Indian Studies, University of Minnesota Duluth, Cina Hall 106, 1123 University Drive, Duluth, MN 55812 (218-726-7332)

Email: umdmtag@d.umn.edu

Website: <http://www.umdmtag.org>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 38
- This program does not require summer semesters for timely completion.
- Degree: Master of Tribal Admin and Governance

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master's of tribal administration and governance (MTAG) is an applied professional development degree designed to develop the knowledge and skills needed to work as an administrator in a tribal government. Students in the program may already serve as tribal administrators, council members, or tribal leaders. Students who currently work or aspire to work professionally in tribal governments or management positions will benefit from this program, which emphasizes both the acquisition of academic knowledge and the application of practical skills.

The curriculum is based on the roles that tribal administrators, leaders, and professionals play in formal and informal situations that support tribal sovereignty and self-determination. Program delivery is designed to accommodate working professionals and support existing commitments to families and home communities. A combination of online delivery and several weekend meetings per semester provides face-to-face interaction with experts in each area of the curriculum including faculty, staff, special guests, and students. Weekend sessions meet four times per semester on Friday evenings and all day Saturday, or students may choose to participate entirely by remote connection.

Program Delivery

This program is available:

- completely online (all program coursework can be completed online)
- partially online (between 50% to 80% of instruction is online)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

A bachelor's degree from a regionally accredited institution in the US or a comparable degree from an officially recognized college or university outside the US may apply for admission.

Special Application Requirements:

Each cohort capacity is 20 students. The program is open until filled, with an August 15th deadline. Unofficial transcripts or academic records, two letters of recommendation, and a personal statement must be uploaded directly to the online application. The personal statement should include what the student intends to get out of the MTAG program and accomplish in tribal administration and governance. Official transcripts or academic records will be required only if the applicant is admitted to the program.

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80



Key to [test abbreviations](#)(TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan C: Plan C requires 38 major credits and up to null credits outside the major. There is no final exam.

This program may not be completed with a minor.

Use of 4xxx courses towards program requirements is not permitted.

A minimum GPA of 2.80 is required for students to remain in good standing.

Semester One (Fall, Year One 9 cr)

[MTAG 5110](#) - Principles of Tribal Sovereignty I (3.0 cr)

[MTAG 5210](#) - Administration Governance I (Strategic) (3.0 cr)

[MTAG 5310](#) - Foundations of Leadership and Ethics in Indigenous Community Life and Organizations (3.0 cr)

Semester Two (Spring, Year One 9 cr)

[MTAG 5120](#) - Principles of Tribal Sovereignty II (3.0 cr)

[MTAG 5220](#) - Administration and Governance II (Operations) (3.0 cr)

[MTAG 5320](#) - Applied Leadership and Ethics in an Indigenous Organizational Context (3.0 cr)

Semester Three (Fall, Year Two 11 cr)

[MTAG 5230](#) - Advanced Tribal Administration and Governance I (Human Resources) (3.0 cr)

[MTAG 5430](#) - Tribal Finance, Accounting and Budgets I (3.0 cr)

[MTAG 5530](#) - Federal Indian Law I (3.0 cr)

[MTAG 5997](#) - Tribal Administration and Governance Directed Project (2.0 cr)

Semester Four (Spring, Year Two 9 cr)

[MTAG 5240](#) - Advanced Tribal Administration and Governance II (Project) (3.0 cr)

[MTAG 5440](#) - Tribal Finance, Accounting and Budgets II (3.0 cr)

[MTAG 5540](#) - Federal Indian Law II (3.0 cr)

Duluth Campus

Tribal Resource and Environmental Stewardship M.T.R.E.S.

American Indian Studies

College of Arts, Humanities and Social Sciences

Link to a [list of faculty](#) for this program.

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 36
- This program does not require summer semesters for timely completion.
- Degree: Master of Tribal Res and Env Stewardship M T R E S

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The Master of Tribal Resource and Environmental Stewardship is an applied degree designed to meet the professional and leadership needs of tribal natural resources and environmental programs. Students will develop fundamental knowledge and skills for natural resources careers responsive to community needs and aspirations. Those who currently work or aspire to work in natural resources programs in tribal governance and related contexts will benefit from this program's emphasis on integrated approaches to the stewardship and protection of natural resources based upon Indigenous environmental systems and worldviews. The curriculum is based upon the interrelationship of biological, physical, and cultural systems. Required courses address program operations, sustainability, and integrated ecosystems studies. Elective course and the capstone project provide opportunity for personalized areas of focus.

Program delivery is designed to accommodate working professionals and support existing commitments to families and home communities. Partially online course delivery including several face-to-face meetings each semester provides interaction with experts in each area of the curriculum including faculty, staff, special guests, and students.

Program Delivery

This program is available:

- partially online (between 50% to 80% of instruction is online)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Other requirements to be completed before admission:

Program is designed to meet the needs of tribal natural resource management. Natural resource professionals have a wide variety of expertise ranging across the sciences, liberal arts, and business and economics. Students entering the program will have Bachelor's degree but no specific disciplinary requirements are necessary.

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan C: Plan C requires 36 major credits and 0 credits outside the major. There is no final exam. A capstone project is required.

Capstone Project: The directed project is the capstone experience of the MTRES program, and is based on the plan previously approved in the seminar course. There will be flexibility to do wide range of projects: internships, service projects, research projects, or other activities. Students will be required to choose a project related to tribal natural resource stewardship that engages the community and involves communication with others.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

Course Requirements

Take the following courses for a total of 28 credits:

[TRES 5100](#) - Foundations of Indigenous Environmental Systems and Worldviews (Bioregionalism) (3.0 cr)

[TRES 5101](#) - Tribal Natural Resource Program Management 1 (3.0 cr)

[TRES 5102](#) - Tribal Natural Resource Program Management 2 (3.0 cr)



[TRES 5201](#) - Integrated Ecosystems Stewardship 1 (3.0 cr)
[TRES 5202](#) - Integrated Ecosystems Stewardship 2 (3.0 cr)
[TRES 5301](#) - Tribal Natural Resource Economics (3.0 cr)
[TRES 5400](#) - Directed Project Seminar (1.0 cr)
[TRES 5994](#) - Tribal Natural Resource Stewardship Directed Project (3.0 cr)
[MTAG 5110](#) - Principles of Tribal Sovereignty I (3.0 cr)
Register for 3 credits of the following:
[EDUC 5230](#) - Indigenous Peoples and the Environment (3.0 cr)

Elective Coursework

Take at least 2 courses, selected in consultation with the director of graduate studies, for a minimum of 8 credits. One 4-level course, up to 4 credits, may be applied as an elective.



Duluth Campus

Autism Spectrum Disorders Postbaccalaureate Certificate

Education

College of Education and Human Service Professions

Link to a [list of faculty](#) for this program.

Contact Information:

Continuing Education, University of Minnesota Duluth, 403 Darland Administration Building, 1049 University Drive, Duluth, MN 55812
(218-726-8113; 800-627-3529; fax: 218-726-7888)

Email: educ@d.umn.edu

Website: <http://www.d.umn.edu/educ>

- Program Type: Post-baccalaureate credit certificate/licensure/endorsement
- Requirements for this program are current for Fall 2018
- Length of program in credits: 12
- This program requires summer semesters for timely completion.
- Degree: Autism Spectrum Disorder Certificate

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

This certificate program is intended for students who are interested in training in autism spectrum disorders (ASD). The program is designed for special education teachers, prospective teachers, paraprofessionals, and other related professionals who work with children and youth with autism spectrum disorders.

The three-course, online series offers the opportunity for students to expand their knowledge and expertise in the area of ASD. Participants in the 12-credit certificate will learn research-based best practices in the field of ASD, consistent with Minnesota Department of Education competencies. The certificate is designed to be completed in one year.

Program Delivery

This program is available:

- completely online (all program coursework can be completed online)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 2.50.

Applicants must have completed a bachelor's degree and have a preferred undergraduate GPA of at least 2.50 or a graduate GPA of at least 2.70.

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses towards program requirements is not permitted.

A minimum GPA of 2.50 is required for students to remain in good standing.

Required Coursework (12 cr)

[SPED 5250](#) - Foundations of Autism Spectrum Disorders (3.0 cr)

[SPED 5270](#) *{Inactive}*(4.0 cr)

[SPED 5260](#) - Language and Social Skills for Children and Youth with Autism Spectrum Disorders (4.0 cr)

Duluth Campus

Communication Sciences and Disorders M.A.

Communication Sciences & Disorders

College of Education and Human Service Professions

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Communication Sciences and Disorders, 174 Chester Park, 31 West College Street, Duluth, MN, 55812 (218-726-7974; fax: 218-726-8693)

Email: cd@d.umn.edu

Website: <http://www.d.umn.edu/csd>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 62
- This program requires summer semesters for timely completion.
- Degree: Master of Arts

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The graduate program in communication sciences and disorders (CSD) effectively combines academic and clinical endeavors to prepare students to become speech-language pathologists. The program places a major emphasis on the development of clinical skills, although students have the opportunity to engage in a wide variety of academic and research activities as well. The curriculum, which is based on five semesters of study, is accredited by the Council of Academic Accreditation (CAA) in speech-language pathology and also by the American Speech-Language Hearing Association (ASHA).

Accreditation

This program is accredited by the Council on Academic Accreditation of the American Speech Language Hearing Association.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Applicants must have the equivalent of a four-year American university baccalaureate degree in communication disorders with a cumulative undergraduate GPA of 3.00 or higher.

Other requirements to be completed before admission:

Applicants must have a bachelor's degree in communication sciences and disorders.

Special Application Requirements:

Applicants must provide at least three letters of recommendation, two of which should be from academic staff familiar with the applicant and a personal statement is also required.

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan B: Plan B requires 47 major credits and up to null credits outside the major. The final exam is oral.

This program may not be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 2 semesters must be completed before filing a Degree Program Form.

All Plan B projects must be pre-approved by the student's examining committee, which also grants final approval.

In addition to the 47 credits required for the MA, at least 15 credits of clinical internship, externship, and practicum must be taken to meet accreditation standards of the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association (ASHA), and to ensure qualification for ASHA certification. Beyond the internship required for the MA (CDS 8397), the department offers internship courses to fulfill CAA requirements. All courses are chosen in consultation with the advisor and the clinical director, and are subject to approval by the director of graduate studies.

Required Courses (47 cr)

Take the following courses to meet the 47-credit minimum for the MA. Complete CSD 5100 for a total of 3 credits, CSD 8099 for a total of 3 credits and CSD 8397 for a total of 4 credits.

- CSD 5100 - Research Methods in Communication Disorders (1.0 - 3.0 cr)
- CSD 5142 - Introduction to Diagnosis of Communication Disorders (3.0 cr)
- CSD 5200 - Dysphagia (3.0 cr)
- CSD 5205 - Pediatric Dysphagia (1.0 cr)
- CSD 5230 - Advanced Applications in Communication Modalities (4.0 cr)
- CSD 5250 - Seminar in Augmentative and Alternative Communication (1.0 cr)
- CSD 5260 - Seminars in Orofacial Disorders (2.0 cr)
- CSD 5301 - Language Disorders in Infants, Toddlers, and Preschoolers (3.0 cr)
- CSD 5302 - Language Disorders in School-Age Children (2.0 cr)
- CSD 5500 - Voice Disorders (3.0 cr)
- CSD 8099 - Projects in Communication Disorders (1.0 cr)
- CSD 8205 - Advanced Fluency Disorders (2.0 cr)
- CSD 8211 - Professional Issues in Communication Disorders I (1.0 cr)
- CSD 8212 - Professional Issues in Communication Disorders II (1.0 cr)
- CSD 8230 - Neurogenic Language Disorders (4.0 cr)
- CSD 8231 - Neurogenic Speech Disorders (3.0 cr)
- CSD 8232 - Mgmt of Communication Disorders in Persons with Tracheostomy, Ventilator Dependency, & Laryngectomy (1.0 cr)
- CSD 8235 - Counseling Applications in Communication Disorders (2.0 cr)
- CSD 8350 - Applied Clinical Methods in CSD (1.0 cr)
- CSD 8397 - On-Campus Graduate Internship in Communication Disorders I (1.0 - 4.0 cr)

Additional CSD Internship/Externship Courses (15 cr)

All courses are chosen in consultation with the advisor and the clinical director, and are subject to approval by the director of graduate studies.

Take 15 or more credit(s) from the following:

- CSD 8497 - On-Campus Graduate Internship in CSD II (1.0 - 5.0 cr)
- CSD 8597 - Part-Time CSD Graduate Internship in Education Settings (5.0 cr)
- CSD 8697 - Part-Time CSD Graduate Internship in Medical Setting (5.0 cr)
- CSD 8797 - Full-Time CSD Graduate Externship in Education Settings (6.0 cr)
- CSD 8897 - Full-Time CSD Graduate Externship in Medical Settings (6.0 cr)
- CSD 8997 - Graduate Practicum in Communication Disorders (1.0 cr)

Duluth Campus

Community College Teaching Postbaccalaureate Certificate

Education

College of Education and Human Service Professions

Link to a [list of faculty](#) for this program.

Contact Information:

UMD Education
150 EduE
412 Library Dr
Duluth, MN 55812
218-726-7233

- Program Type: Post-baccalaureate credit certificate/licensure/endorsement
- Requirements for this program are current for Fall 2018
- Length of program in credits: 14 to 16
- This program does not require summer semesters for timely completion.
- Degree: Community College Teaching PBacc Certificate

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The Community College Teaching Certificate program will provide opportunity for science related discipline students to learn how to be an effective teacher in a college setting and provide the foundation for those who wish to pursue a Minnesota teaching licensure.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

Required Courses

[EDSE 4204](#) - Designing Learning Environments and Lessons (3.0 cr)
or [EDSE 5204](#) - Designing Learning Environments (3.0 cr)
[EDSE 4501](#) - Adolescent/Adult Development and Learning Theory (3.0 cr)
or [EDSE 5501](#) - Adolescent/Adult Development and Learning Theory (3.0 cr)
[EDSE 4525](#) - Assessment for Secondary Education (3.0 cr)
or [EDSE 5525](#) - Assessment for Secondary Education (3.0 cr)
[EDSE 5000](#) - Introduction to Post-Secondary Teaching (2.0 cr)
EDSE 5xxx - 3 - 5 credits, adviser prior approval required.

Duluth Campus

Education Administration Specialist Ed S

Education

College of Education and Human Service Professions

Link to a [list of faculty](#) for this program.

Contact Information:

UMD Education
150 EduE
412 Library Dr
Duluth, MN 55812
218/726-8547

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 35 to 50
- This program requires summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The Education Administration Specialist is a degree program approved by the Board of School Administrators (BOSA) for the licensing of principals and superintendents. The mission of the program is to produce scholarly practitioners who can critically engage with the important questions in educational administration today. Our graduates articulate a clear vision of successful leadership and actively demonstrate a commitment to ensuring quality educational experiences for all teachers and students.

This degree is committed to strengthening ties with area schools as well as providing experiences which prepare administrators for lifelong learning, globally engaged citizenship, and success. Experienced professors are not only steeped in theory, but they also have professional experience to add to their instruction. In addition to an internship, students will have the opportunity to participate in a field experience that can take them abroad or visit one of the eleven tribal nations in our region.

The focus is on innovation, which promotes research and creative practices that leverage our human and cultural resources. Attention is paid to our indigenous and rural education and we discover best practices to share in a collaborative systematic approach. In addition, our students are experienced with collaborative web-based online programs and develop a broad scope of technology skills to enhance student-based learning in the schools they will lead.

Our program fosters a positive and inclusive climate which values equity, diversity, and social justice. Diversity leadership, community relations, and field experiences in alternative placements and non-public schools assist in developing culturally competent administrators to be sensitive to the needs of all learners. We aim to serve the educational needs of Indigenous peoples as well as the economic growth, cultural preservation, and sovereignty of the American Indian nations of the region and state.

University of Minnesota Duluth (UMD) is a center of excellence for graduate studies in the upper Midwest. When our actions are rooted in integrity and respect, we, as educators, can change the world for the better. Our goal is to prepare graduates who are sought after by employers because of their cultural, global, and professional competencies, as well as their strong curricular leadership steeped in assessment and instruction.

Accreditation

This program is accredited by Minnesota Board of School Administrators MNBOSA

Program Delivery

This program is available:

- primarily online (at least 80% of the instruction for the program is online with short, intensive periods of face-to-face coursework)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Must have a minimum of a masters degree or equivalent, plus at least 3 years of teaching experience, or EdAd6990, or documentation of equivalent hours as approved by the director of Graduate Studies.

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

This program may not be completed with a minor.

Use of 4xxx courses towards program requirements is not permitted.

The administrative licensure program offers courses specifically designed to address the competencies required by the state of Minnesota for each license. Courses are hybrid offerings with three face-to-face sessions per semester on a Saturday, with the rest online, in addition to field experience and portfolio development.

Core Courses (22 cr)

- EDUC 5911 - Educational Organization and Leadership (3.0 cr)
- EDAD 5912 - Supervision of Teachers and School Staff (3.0 cr)
- EDAD 5913 - Communication and Community Relations (3.0 cr)
- EDAD 5914 - Education Policy (3.0 cr)
- EDAD 5915 - Operations Resource Management and Scheduling in Education (3.0 cr)
- EDAD 5916 - Curriculum and Instruction and Assessment (3.0 cr)
- EDAD 5917 - EdAd Technology Seminar (1.0 cr)
- EDAD 5918 - Continuous Improvement Processes for Schools (3.0 cr)

Licensure Specific Coursework (13 - 15 cr)

Students may complete both principal- and superintendent-specific coursework.

Principal Coursework (13 cr)

- EDAD 5920 - Problem Solving for Principals: Student Discipline and Behavior Management (3.0 cr)
- EDAD 5921 - Principalship (3.0 cr)
- EDAD 5997 - Professional Competency Assessment: Principals (1.0 cr)
- EDAD 6997 - Internship: Principals (6.0 cr)

or Superintendent Coursework (15 cr)

- EDAD 5919 - Superintendency (3.0 cr)
- EDAD 5922 - Problem Solving for Superintendents (3.0 cr)
- EDAD 5923 - Field Exploration (2.0 cr)
- EDAD 5998 - Professional Competency Assessment: Superintendents (1.0 cr)
- EDAD 6998 - Internship: Superintendents (6.0 cr)

Program Sub-plans

A sub-plan is not required for this program.

Students may complete the program with more than one sub-plan.

Principal Licensure

Core Courses (22 cr)

- EDUC 5911 - Educational Organization and Leadership (3.0 cr)
- EDAD 5912 - Supervision of Teachers and School Staff (3.0 cr)
- EDAD 5913 - Communication and Community Relations (3.0 cr)
- EDAD 5914 - Education Policy (3.0 cr)
- EDAD 5915 - Operations Resource Management and Scheduling in Education (3.0 cr)
- EDAD 5916 - Curriculum and Instruction and Assessment (3.0 cr)
- EDAD 5917 - EdAd Technology Seminar (1.0 cr)
- EDAD 5918 - Continuous Improvement Processes for Schools (3.0 cr)

Principal Licensure Specific Coursework (13 cr)

- EDAD 5920 - Problem Solving for Principals: Student Discipline and Behavior Management (3.0 cr)
- EDAD 5921 - Principalship (3.0 cr)
- EDAD 5997 - Professional Competency Assessment: Principals (1.0 cr)
- EDAD 6997 - Internship: Principals (6.0 cr)

Superintendent Licensure

Core Courses (22 cr)

- EDUC 5911 - Educational Organization and Leadership (3.0 cr)
- EDAD 5912 - Supervision of Teachers and School Staff (3.0 cr)
- EDAD 5913 - Communication and Community Relations (3.0 cr)



- EDAD 5914 - Education Policy (3.0 cr)
- EDAD 5915 - Operations Resource Management and Scheduling in Education (3.0 cr)
- EDAD 5916 - Curriculum and Instruction and Assessment (3.0 cr)
- EDAD 5917 - EdAd Technology Seminar (1.0 cr)
- EDAD 5918 - Continuous Improvement Processes for Schools (3.0 cr)
- Superintendent Licensure Specific Coursework (15 cr)**
- EDAD 5919 - Superintendency (3.0 cr)
- EDAD 5922 - Problem Solving for Superintendents (3.0 cr)
- EDAD 5923 - Field Exploration (2.0 cr)
- EDAD 5998 - Professional Competency Assessment: Superintendents (1.0 cr)
- EDAD 6998 - Internship: Superintendents (6.0 cr)

Duluth Campus

Education M.Ed.

Education

College of Education and Human Service Professions

Link to a [list of faculty](#) for this program.

Contact Information:

College of Education and Human Service Professions, 125 Bohannon Hall, 1207 Ordean Court, Duluth, MN 55812 (218-726-7156; fax: 218-726-7073)

Email: cehsp@d.umn.edu

Website: <http://cehsp.d.umn.edu/departments-centers/department-education/programs/master>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 30
- This program does not require summer semesters for timely completion.
- Degree: Master of Education

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master of education (MEd) is a professional development degree for educational scholars, including teachers and professionals with leadership or training roles in the health sciences, social services, community education, and business or industry. Professional development is achieved through critical reflection, theoretical investigation, and application of theory and research to practice in communities. The curriculum is based on the roles that educational scholars play as teachers, leaders, and change agents in formal, non-formal, and community-based settings.

Learners will develop skills in:

Critical reflection
Investigation and application of educational theory to practice
Evaluation, execution, and effective communication of educational research
Intercultural competence
The creation of, and participation in, communities of learners as professionals
Leadership for educational reform

Core courses are delivered primarily online with one face-to-face weekend session during the first month of each semester. The required core courses are delivered over two years for professionals who wish to earn the graduate degree while maintaining full-time employment. Students are admitted to an identified cohort and register for two years of core curriculum with the same cohort.

Program Delivery

This program is available:

- primarily online (at least 80% of the instruction for the program is online with short, intensive periods of face-to-face coursework)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 2.80.

A bachelor's degree is required for admission.

Other requirements to be completed before admission:

Preferred candidates will have a GPA of 2.80 or higher and two years professional experience or demonstrated experience working with learners.

Special Application Requirements:

Please see the MEd application information found at: <https://cehsp.d.umn.edu/departments-centers/department-education/programs/master-education-med/application>

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19



- Paper Based - Total Score: 550

Key to [test abbreviations](#)(TOEFL).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan C: Plan C requires 24 major credits and 6 credits outside the major. There is no final exam. A capstone project is required.

Capstone Project: Students work throughout the program to develop, research, and complete a final capstone project.

This program may not be completed with a minor.

Use of 4xxx courses towards program requirements is not permitted.

A minimum GPA of 3.0 is required for students to remain in good standing.

The MEd cohort program has a 24-credit core curriculum; remaining credits are electives. The sequence of core courses is designed so that they build and rely on each other in a way that integrates content from one semester to the next. The research component of the program builds through the two years and is structured to help cohort members complete the final project in that time. Specific products at the end of each term lead to a completed project.

Each semester, students will be expected to complete the following.

By the end of:

Semester 1: Select a topic and complete a "mini" literature review.

Semester 2: Write the question to be researched and complete literature review.

Semester 3: Determine research method and write a proposal and submit IRB application.

Semester 4: Gather and analyze data, and complete a final capstone project.

All policies relating to degree requirements are detailed in the student handbook.

Required Courses (24 cr)

[EDUC 5990](#) - Research Project (1.0 - 6.0 cr)

[EDUC 7001](#) - Foundations of Education and Research (3.0 cr)

[EDUC 7002](#) - Diversity and Social Justice (3.0 cr)

[EDUC 7004](#) - Foundations of Educational Research (3.0 cr)

[EDUC 7006](#) - Ethics and Professionalism in Education (3.0 cr)

[EDUC 7008](#) - Curriculum Theory and Design (3.0 cr)

[EDUC 7009](#) - Assessment of Learning (3.0 cr)

[EDUC 7011](#) - Integrated Research in Practice (3.0 cr)

Electives (6 cr)

Electives are determined in consultation with the director of Graduate Studies first year) and the graduate advisor (second year).



Duluth Campus

Educational Computing and Technology Postbaccalaureate Certificate

Education

College of Education and Human Service Professions

Link to a [list of faculty](#) for this program.

Contact Information:

Email: educ@d.umn.edu

Website: <http://www.d.umn.edu/educ>

- Program Type: Post-baccalaureate credit certificate/licensure/endorsement
- Requirements for this program are current for Fall 2018
- Length of program in credits: 16
- This program does not require summer semesters for timely completion.
- Degree: Certificate in Educational Computing/Technology

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

This certificate is designed for students who are interested in expanding their knowledge and skills in educational computing and technology. The certificate provides basic through advanced training in computer and related technologies. The hands-on program builds upon basic computer literacy skills such as micro computing, word processing, spreadsheets, databases, graphics, desktop publishing, and the use of peripherals such as CD-ROM, scanners, digital cameras, digital video cameras, and web cams. Students will expand their knowledge and skills in additional technologies including Power Point, Hyper Studio, the Internet/World Wide Web, electronic mail, web quests, video conferencing, digital video editing, and a variety of teacher administrative software focusing on the further development of technology skills and their infusion into the P-12 classrooms.

The program is designed for professionals, paraprofessionals, and others who wish to concentrate in educational computing and technology. Student projects are tailored to personal interests and emphasize practical application for use in school classroom settings. Students can earn the certificate at one of three levels: undergraduate, graduate, or noncredit.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 2.50.

Applicants must have completed a bachelor's degree and have a preferred undergraduate GPA of at least 2.50 or a graduate GPA of at least 2.70.

Other requirements to be completed before admission:

Students should submit a Certificate Application before completing the required certificate coursework. However, students have one year from the time they complete the required coursework to submit the Certificate Application.

After one year, students are no longer eligible for admission to the certificate program without the consent of the certificate faculty liaison. In some cases, additional coursework may be required. Admission to the certificate program after one year is not guaranteed, but is granted on a case-by-case basis. Instructions for the Certificate Application can be found at: <http://www.d.umn.edu/ce/learningopportunities/certificates/applprocess.html>.

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550

Key to [test abbreviations](#)(TOEFL).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.



Program Requirements

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 2.00 is required for students to remain in good standing.

Required Coursework

[EDUC 5412](#) - The Computer in Education (4.0 cr)

[EDUC 5413](#) - Teaching With Technology (4.0 cr)

[EDUC 5414](#) - Using Technology for the Administrative Tasks of Teaching (4.0 cr)

[EDUC 5415](#) - Teaching Online and Hybrid Courses (4.0 cr)

Duluth Campus

Environmental Education M.E.Ed.

D Applied Human Sciences, Education

College of Education and Human Service Professions

Link to a [list of faculty](#) for this program.

Contact Information:

Center for Environmental Education, 122 Sports and Health Center, 1216 Ordean Court, Duluth, Minnesota 55812-3032 (218-726-7554)

Email: immcgraw@d.umn.edu or ceed@d.umn.edu

Website: <http://www.d.umn.edu/ceed/mastersdegree-overview.html>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 34
- This program does not require summer semesters for timely completion.
- Degree: Master of Environmental Education

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The purpose of the master's in environmental education is to develop advanced practitioners in environmental education (EE) who will take on leadership roles through positions such as EE specialists and directors at nature centers, outdoor and EE centers, natural resource agencies, conservation groups, park and recreation programs, and in P-16 school settings. A minimum of 34 credits is required for the degree. Core requirements include teaching methodology in formal and non-formal settings; program development, management, and evaluation; theory; and research. Elective courses are used for supporting final project and/or specific areas of interest. Final project options include a research-based thesis, research-based journal article, field project, or curriculum project.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

A bachelor's degree from an accredited US college or university or an equivalent degree from a recognized college or university in another country.

Special Application Requirements:

Applications are due February 1, with admission for the following fall semester. (Under extenuating circumstances, applications may be considered past the deadline for admission.)

All application materials should be submitted directly into the ApplyYourself application system. Your application will not be reviewed until all of the required materials are submitted successfully. Incomplete applications cannot be considered for admission.

Required materials include the following:

- Transcripts
- Writing sample that demonstrates suitability for graduate-level study and/or formal academic writing ability
- Resume
- Two work samples that communicate suitability for graduate-level study in EE, such as a lesson plan, grant proposal, article, capstone project, etc.
- Three letters of recommendation that speak to the applicant's potential as a graduate student and EE professional.

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5

- MELAB
 - Final score: 80

Key to [test abbreviations](#)(TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan B: Plan B requires 34 major credits and 0 credits outside the major. The final exam is oral. A capstone project is required.

Capstone Project: Final project options include a research-based thesis, research-based journal article, field project, or curriculum project.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

The degree is intended to be completed in two years, and a minimum of 34 credits is required. Coursework is offered primarily on-campus (in person); some electives are available online. Summer coursework is limited, and most students spend summers away from campus gaining relevant experience.

Credits taken before the award of a baccalaureate degree cannot be applied toward MEd requirements.

Electives must be at the 4000-level or higher; 4000-level electives must be approved for graduate credit.

Foundations (2 cr)

[ENED 5165](#) - Theories and Models in Outdoor Education (2.0 cr)

Instruction (5 cr)

[ENED 5163](#) - Outdoor Education Methods (3.0 cr)

[ENED 5850](#) - Classroom Applications (2.0 cr)

Program Development, Implementation, and Evaluation (10 cr)

[ENED 4315](#) - Operations and Management (4.0 cr)

[ENED 5625](#) - Program Development and Evaluation (3.0 cr)

[ENED 5855](#) - Programming for School Systems (3.0 cr)

Research (13 cr)

Take the following courses for 7 credits and 6 research project credits for a total of 13 credits:

[ENED 5100](#) - Research Design and Methods in the Social Sciences (3.0 cr)

[ENED 5560](#) - Current Research and Issues (3.0 cr)

[ENED 5998](#) - Outdoor Education Seminar (1.0 cr)

Research Project

Must be taken for a total of 6 credits.

[EDUC 5990](#) - Research Project (1.0 - 6.0 cr)

or [ENED 5990](#) - Research Project (1.0 - 6.0 cr)

Electives (4 cr)

Courses supporting research area or career goals.

Duluth Campus

Environmental Education Postbaccalaureate Certificate

D Applied Human Sciences, Education

College of Education and Human Service Professions

Link to a [list of faculty](#) for this program.

Contact Information:

Email: ceed@d.umn.edu

Website: <http://www.d.umn.edu/ceed/ee-certificate-overview.html>

- Program Type: Post-baccalaureate credit certificate/licensure/endorsement
- Requirements for this program are current for Fall 2018
- Length of program in credits: 12
- This program requires summer semesters for timely completion.
- Degree: Certificate in Environmental Education

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

This program is designed primarily for teachers and interpretive naturalists, but is open to anyone with a bachelor's degree and an interest in pursuing a career as an environmental educator.

The program emphasizes interpretive skills in the natural sciences, education on environmental issues, and helping people recognize and solve potential environmental problems. Three main areas of concentration are education, social sciences, and natural sciences.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 2.50.

Admission to the program is generally approved for students who have successfully completed a bachelor's degree and have satisfactorily completed at least 70 percent of college courses attempted.

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses towards program requirements is not permitted.

A minimum GPA of 2.70 is required for students to remain in good standing.

Required Coursework (12 cr)

- [ENED 5163](#) - Outdoor Education Methods (3.0 cr)
- [ENED 5165](#) - Theories and Models in Outdoor Education (2.0 cr)
- [ENED 5325](#) - Sustainability Issues Investigation (2.0 cr)
- [ENED 5850](#) - Classroom Applications (2.0 cr)
- [ENED 5343](#) - Advanced Field Interpretive Techniques (3.0 cr)

Duluth Campus

Psychological Science M.A.

Psychology

College of Education and Human Service Professions

Link to a [list of faculty](#) for this program.

Contact Information:

UMD Psychology

320 BohH D147A

1207 Ordean Court

Duluth, MN 55812

218/726-7808

Email: maps@d.umn.edu

Website: <http://cehsp.d.umn.edu/departments-centers/departments-psychology/programs/graduate>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 36 to 50
- This program requires summer semesters for timely completion.
- Degree: Master of Arts

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master of arts in psychological science program prepares graduate students with research-based knowledge and skills essential to successful careers in organizational, educational, clinical, and counseling settings. The program has three integrated tracks: 1) clinical/counseling psychology; 2) experimental psychology; and 3) industrial-organizational psychology. All three tracks include the same basic core courses in statistics, research methodology, and introduction to graduate studies. All three tracks have a 6-credit Plan B requirement (clinical/counseling track also has Plan C as an option). In addition, a number of courses in main topics of psychology are required of every student enrolled in the program.

For all three tracks, the degree and research-based preparation should also facilitate graduates' admission into PhD and PsyD programs in psychology.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

A psychology baccalaureate degree from an accredited US institution/foreign equivalent; other majors will be considered if comparable coursework in statistics and research methods has been completed

Other requirements to be completed before admission:

In addition to the general admission requirements for all applicants to our program, the final pool of clinical/counseling (CC) track applicants will be invited to an on-campus or technology-assisted interview before the admission decision. Applicants to the CC track must also demonstrate successful completion of an undergraduate abnormal psychology course. Students applying to the CC track should also know, per university policy, criminal background checks will be required before enrolling in internships. We recommend applicants to the I/O track have passed an introductory I/O psychology or similar course prior to their entrance into the program.

Special Application Requirements:

Applicants must supply:

1. Official transcripts from all colleges and universities attended
2. A brief personal statement indicating why an advanced degree in Psychology is of interest and their choice of track
3. Three letters of recommendation
4. Graduate Record Examination verbal and quantitative test scores
5. Scores from the TOEFL examination (for international students whose native language is not English)
6. Work sample
7. Resume or CV

Departmental deadline for admission is February 15 of the year of admission. Pending available space, applications submitted after the deadline may be considered. Admission to the program will be for fall semester only.

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL

The preferred English language test is Test of English as Foreign Language

Key to [test abbreviations](#)(GRE, TOEFL).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan B: Plan B requires 36 to 50 major credits and up to null credits outside the major. The final exam is oral. A capstone project is required.

Capstone Project: Students completing Plan B are expected to conduct an empirical research project, meta-analysis, or applied project under the direction of a faculty advisor. Serving as the capstone of the MAPS education, the Plan B project documents the students abilities in scientific inquiry, analysis, and writing. Furthermore, it contributes to knowledge in the field of psychology and related areas, or in the case of applied projects, addresses applied concerns or resolves applied problems. Students must receive approval from their examination committee prior to conducting the research. The Final Plan B project includes a written paper and an oral defense with the students examination committee. The Plan B is taken for 6 credits.

Plan C: Plan C requires 36 to 50 major credits and up to null credits outside the major. There is no final exam.

This program may not be completed with a minor.

Use of 4xxx courses towards program requirements is not permitted.

All 3 tracks have a 6 credit Plan B research project in psychology requirement; the clinical/counseling track students may choose to do a Plan C and complete 6 additional credits instead of the research project. Students must maintain a GPA of 3.0 or better and must earn a grade of B or better for each course. Furthermore, students must not have more than 8 credits or 2 courses with an incomplete for longer than 2 semesters. The director of the MAPS program will advise newly admitted students during their first semester in the program. Before mid-term of the second semester in which the student is enrolled in the program, the director of graduate studies will be responsible for assuring that all students select a faculty advisor and establish an examination committee, and will also be the instructor of record for the introduction to graduate studies course. A final oral examination covering the Plan B project will be given at the end of the student's academic program. The oral examination will be conducted by the student's advising/examining committee. The examination will require the student to demonstrate an understanding of the theories, methods, and analyses employed in his or her research project.

For the Experimental and Industrial Organizational tracks, at least 27 graduate-level coursework credits must be earned at the University while enrolled as a degree-seeking student in this program. For the clinical counseling track, at least 41 graduate-level coursework credits must be earned at the University while enrolled as a degree-seeking student in this program. A maximum of 9 credits can be transferred from another institution.

Program Sub-plans

Students are required to complete one of the following sub-plans.

Students may not complete the program with more than one sub-plan.

Clinical/Counseling

The clinical-counseling track follows the scientist-practitioner model of training through its emphasis on current, empirically-based diagnostic and intervention methods and opportunities for students to conduct independent projects. Students will be prepared to work as successful mental health service providers with diverse populations in a variety of settings, or continue on to doctoral-level graduate studies. The curriculum is designed to provide the required coursework and skills training for graduates to be eligible for licensure as Licensed Professional Clinical-Counselors through the Minnesota Board of Behavioral Health and Therapy.

At least 41 graduate-level coursework credits must be earned at the University while enrolled as a degree-seeking student in this program. A maximum of 9 credits can be transferred from another institution.

Clinical/Counseling Track (50 cr)

- PSY 5021 - Advanced Developmental Psychology (3.0 cr)
- PSY 5052 - Advanced Statistics I (3.0 cr)
- PSY 5120 - Career and Lifestyle Development (2.0 cr)
- PSY 5121 - Psychopathology Over the Lifespan (3.0 cr)
- PSY 8021 - Research Methods and Evaluation (3.0 cr)
- PSY 8097 - Clinical-Counseling Practicum (3.0 cr)
- PSY 8103 - Introduction to Graduate Studies (0.0 cr)
- PSY 8221 - Individual Adult and Group Therapy/Counseling (3.0 cr)
- PSY 8223 - Child, Adolescent, and Family Therapy (3.0 cr)
- PSY 8224 - Clinical Treatment Planning (3.0 cr)
- PSY 8231 - Assessment I: Foundations and Cognitive Assessment (3.0 cr)
- PSY 8232 - Assessment II (3.0 cr)
- PSY 8301 - Multicultural Foundations in Clinical/Counseling Psychology (3.0 cr)
- PSY 8302 - Ethical and Legal Issues in Therapy and Counseling (3.0 cr)
- PSY 8197 - Clinical Counseling Internship (3.0 cr)

Plan B

- PSY 8099 - Research Project in Psychology (1.0 - 3.0 cr)

or **Plan C**

- Electives (6 cr)

Experimental

Experimental psychology encompasses a variety of experimental research areas within psychology. Our faculty have background and current research interest in:

- Biopsychology
- Cognition
- Social psychology
- Evolutionary psychology
- Perception and action
- Psycho-linguistics

Graduate students are prepared for doctoral-level programs in various areas of psychology, as well as careers in research and academic instruction.

At least 27 graduate-level coursework credits must be earned at the University while enrolled as a degree-seeking student in this program. A maximum of 9 credits can be transferred from another institution.

Required Courses (36 cr)

- PSY 5021 - Advanced Developmental Psychology (3.0 cr)
- PSY 5052 - Advanced Statistics I (3.0 cr)
- PSY 5401 - Advanced Social Psychology (3.0 cr)
- PSY 5621 - Cognition and Emotion (3.0 cr)
- PSY 5631 - Biological Bases of Behavior (3.0 cr)
- PSY 8021 - Research Methods and Evaluation (3.0 cr)
- PSY 8052 - Advanced Statistics II (3.0 cr)
- PSY 8099 - Research Project in Psychology (1.0 - 3.0 cr)
- PSY 8103 - Introduction to Graduate Studies (0.0 cr)

Must be approved by advisor.

Take 9 or more credit(s) from the following:

- Elective credit

Industrial Organizational

Industrial-organizational psychology trains students to apply theory and methods of psychology in order to solve workplace issues using a scientist-practitioner approach. Students will be immersed in classic and contemporary research in order to acquire skills in areas of personnel selection, employee motivation, training and development, performance management and evaluation, and organizational change and development. Our program prepares students for doctoral-level training, as well as employment in a variety of organizational settings.

At least 27 graduate-level coursework credits must be earned at the University while enrolled as a degree-seeking student in this program. A maximum of 9 credits can be transferred from another institution.

Required Courses (36 cr)

- PSY 5052 - Advanced Statistics I (3.0 cr)
- PSY 5701 - Advanced Personnel Psychology (3.0 cr)



- PSY 5702 - Advanced Organizational Psychology (3.0 cr)
- PSY 8021 - Research Methods and Evaluation (3.0 cr)
- PSY 8052 - Advanced Statistics II (3.0 cr)
- PSY 8099 - Research Project in Psychology (1.0 - 3.0 cr)
- PSY 8103 - Introduction to Graduate Studies (0.0 cr)
- PSY 8701 - Performance Evaluation and Management (3.0 cr)
- PSY 8705 - Organizational Systems & Development (3.0 cr)
- PSY 8706 - Personnel Training & Development (3.0 cr)

Must be approved by advisor.

Take 6 or more credit(s) from the following:

- Elective credit



Duluth Campus

Social Work M.S.W.

Social Work

College of Education and Human Service Professions

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Social Work, 220 Bohannon Hall, 1207 Ordean Court, Duluth, MN 55812 (218-726-7245; fax: 218-726-7185)

Email: umdsww@d.umn.edu

Website: <http://www.d.umn.edu/sw>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 34 to 51
- This program does not require summer semesters for timely completion.
- Degree: Master of Social Work

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master's of social work (M.S.W.) program offers an advanced generalist practice curriculum that prepares students to practice in a variety of human service settings. Graduates undertake a variety of professional social work roles ranging from counselor and case manager to community organizer and administrator. The curriculum has a special focus on services to American Indians and their communities. In addition to the 51-credit standard program, a 34-credit advanced standing program is available to applicants with a bachelor of social work degree from a program accredited by the Council of Social Work Education. Students can complete additional coursework towards optional emphases in child welfare practice and clinical social work. Completion of the M.S.W. can satisfy all or a majority of clinical content hours for licensure.

Accreditation

This program is accredited by the Council of Social Work Education (CSWE).

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Applicants should have a bachelor's degree with a solid background in the liberal arts, including courses in cultural studies, and behavioral and social sciences.

Other requirements to be completed before admission:

Completion of at least 6 semester credits in two or more social science disciplines, such as sociology, psychology, economics, anthropology, or political science is required. Admitted applicants must complete a college-level biology course with content on human anatomical and physiological development and a college-level statistics course. The biology course must be completed before registering for the first semester in the M.S.W. program, and the statistics course must be completed before registering for the first research course. Interested persons can apply and be admitted before completing the enrollment prerequisites.

Special Application Requirements:

Applicants should be knowledgeable about diverse cultures; social problems; social conditions; and the social, psychological, and biological determinants of human behavior. Applicants with undergraduate degree majors in social work or a related field or discipline are given preference over applicants with other majors. Applicants should show potential to contribute to the social work profession. Preference is given to applicants with professional experience in human service settings, particularly when this experience involves working with underrepresented and protected classes. Course credits are not awarded for non-academic or professional "life experience."

Applicants with a Bachelor of Social Work degree from a program accredited by the Council of Social Work Education are eligible for the Advanced Standing Program.

The following must be submitted through the online application: the Department's Supplemental Application form, a personal statement,

a writing sample, and a resume. Three letters of recommendation are required on department's recommendation form. Standard Program students are admitted in the fall semester only. Advanced Standing Program students have the option of starting either in the summer or fall semester.

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan C: Plan C requires 34 to 51 major credits and 0 to 6 credits outside the major. There is no final exam.

This program may not be completed with a minor.

Use of 4xxx courses towards program requirements is not permitted.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 1 semester must be completed before filing a Degree Program Form.

The UMD Department of Social Work was designed to help students meaningfully integrate, on an ongoing basis, the knowledge and skills they acquire throughout the master's curriculum. Specialized papers on: professional competencies, social justice, ethical practice, and effective practice in working with diverse communities are integrated into specific course assignments. All MSW graduates must demonstrate competence in those learning areas believed to be key to quality master's-level social work practice, and in conjunction with standards identified by the Council on Social Work Education.

The Standard Program requires two field placements in human service agencies; the Advanced Standing Program requires one field placement. A level of personal and professional competencies is demonstrated by proficiency in social work courses and field placement evaluations.

Advanced or Standard Curriculum

Advanced Curriculum -Required (28 Credits)

Applicants with a bachelor of social work degree from a program accredited by the Council of Social Work Education may apply for the Advanced Standing Program.

Advanced Generalist Concentration Courses (23 Credits)

SW 8802 must be taken for a total of 8 credits.

[SW 8100](#) - Social Work with Diverse Populations (3.0 cr)

[SW 8102](#) - Advanced Research (3.0 cr)

[SW 8235](#) - American Indians and Social Policy (3.0 cr)

[SW 8331](#) - Organization and Community Practice II (3.0 cr)

[SW 8441](#) - Individual, Family and Group Practice II (3.0 cr)

[SW 8802](#) - Field Placement II (3.0 - 8.0 cr)

Advanced Practice Course (3 Credits)

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

• [SW 8031](#) - Advanced Practice in Child Welfare (3.0 cr)

• [SW 8332](#) - Advanced Practice in Administration and Community Development (3.0 cr)

• [SW 8443](#) - Advanced Practice in Mental Health (3.0 cr)

Advanced American Indian Content Course (2 Credits)

Take 1 or more course(s) totaling 2 or more credit(s) from the following:

• [SW 8771](#) - Health in American Indian Communities (2.0 cr)

• [SW 8881](#) - Dynamics of American Indian Families (2.0 cr)

or **Standard Foundation Curriculum - Required (48 Credits)**



Foundation Courses (20 Credits)

SW 8801 must be taken for 6 credits.

[SW 5101](#) - Human Behavior in the Social Environment (3.0 cr)

[SW 5201](#) - Social Welfare Policy (3.0 cr)

[SW 5990](#) *{Inactive}*(0.0 cr)

[SW 8101](#) - Introduction to Research (2.0 cr)

[SW 8111](#) - Individual, Family and Group Practice I (3.0 cr)

[SW 8112](#) - Organization and Community Practice I (3.0 cr)

[SW 8801](#) - Field Placement I (3.0 - 6.0 cr)

Advanced Generalist Concentration Courses (23 Credits)

SW 8802 must be taken for 8 credits.

[SW 8100](#) - Social Work with Diverse Populations (3.0 cr)

[SW 8102](#) - Advanced Research (3.0 cr)

[SW 8235](#) - American Indians and Social Policy (3.0 cr)

[SW 8331](#) - Organization and Community Practice II (3.0 cr)

[SW 8441](#) - Individual, Family and Group Practice II (3.0 cr)

[SW 8802](#) - Field Placement II (3.0 - 8.0 cr)

Advanced Practice Course (3 Credits)

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

•[SW 8031](#) - Advanced Practice in Child Welfare (3.0 cr)

•[SW 8332](#) - Advanced Practice in Administration and Community Development (3.0 cr)

•[SW 8443](#) - Advanced Practice in Mental Health (3.0 cr)

Advanced American Indian Content Course (2 Credits)

Take 1 or more course(s) totaling 2 or more credit(s) from the following:

•[SW 8771](#) - Health in American Indian Communities (2.0 cr)

•[SW 8881](#) - Dynamics of American Indian Families (2.0 cr)

Emphases

Only students with a bachelor of social work degree from a program accredited by the Council of Social Work Education who completed the Advanced Standing Required courses listed above may apply for the Advance Standing Program. They may also apply for the Clinical Scholars, Child Welfare or ICWA Scholars Program. Students who complete the Standard requirements listed above may apply for the Standard Program, Child Welfare or ICWA Scholars Program.

Advanced Standing Program (6 cr)

With advisor approval students may take courses outside the Social Work department.

Electives

Take 6 or more credit(s) from the following:

•SW 5xxx

•SW 8xxx

-OR-

Standard Program (3 cr)

With advisor approval students may take courses outside the Social Work department.

Elective

Take 3 or more credit(s) from the following:

•SW 5xxx

•SW 8xxx

-OR-

Child Welfare Program (9 cr)

Students choosing this option complete SW 8031 for the Advance Practice Course.

[SW 5032](#) - Child Welfare and the Law (2.0 cr)

[SW 5215](#) - Trauma Informed Social Work Practice with Children and Adolescents (3.0 cr)

[SW 8031](#) - Advanced Practice in Child Welfare (3.0 cr)

[SW 8771](#) - Health in American Indian Communities (2.0 cr)

or [SW 8881](#) - Dynamics of American Indian Families (2.0 cr)

-OR-

Mental Health/Clinical Plan (9 cr)

Students choosing this option are advised to complete SW 8443 for the Advance Practice Course and SW 8070, Evidenced-Based Practice in Clinical Social Work.

[SW 8070](#) - Evidence-Based Practice in Clinical Social Work (3.0 cr)

[SW 8443](#) - Advanced Practice in Mental Health (3.0 cr)

[SW 5144](#) - Grief, Loss and Coping in Social Work Practice (3.0 cr)

or [SW 5280](#) - Substance Use Trends and Interventions in Social Work (3.0 cr)



SW 8771 - Health in American Indian Communities (2.0 cr)
or SW 8881 - Dynamics of American Indian Families (2.0 cr)



Duluth Campus

Social Work Minor

Social Work

College of Education and Human Service Professions

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Social Work, 220 Bohannon Hall, 1207 Ordean Court, Duluth, MN 55812 (218-726-7245; fax: 218-726-7185)

Email: sw@d.umn.edu

Website: <http://www.d.umn.edu/sw>

- Program Type: Graduate minor related to major
- Requirements for this program are current for Fall 2018
- Length of program in credits (Masters): 6
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master of social work (M.S.W.) program offers a concentration in advanced generalist practice that prepares students to practice in a variety of human service settings. Graduates undertake a variety of professional social work roles ranging from counselor and case manager to community organizer and administrator. The curriculum has a special focus on services to American Indians and their communities. Coursework is also available in the area of child welfare practice.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses towards program requirements is not permitted.

Required Electives (6 cr)

Courses should be chosen in consultation with advisor.

Take 6 or more credit(s) from the following:

- SW 5xxx
- SW 8xxx

Duluth Campus

Teaching and Learning Ed.D.

Education

College of Education and Human Service Professions

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Education, 412 Library Drive, 150 EduE, Duluth, MN 55812 (218-726-6525; fax: 218-726-7008)

Website: <http://cehsp.d.umn.edu/departments-centers/department-education/programs/edd>

- Program Type: Doctorate
- Requirements for this program are current for Fall 2018
- Length of program in credits: 76
- This program requires summer semesters for timely completion.
- Degree: Doctor of Education

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

Students are currently not being accepted into this program.

The doctor of education degree (EdD) with a major in teaching and learning is an applied degree for the professional development of P-12, community college, and university faculty and administrators; professionals in other human service professions such as coaching, athletic training, criminal justice, social work, extension, community agency administration, university student personnel; as well as business professionals involved in education and training activities. The mission of the program is to produce scholarly practitioners. The goals of doctoral study in this program are to help students 1) acquire greater content knowledge in teaching and learning; 2) develop abilities for research in the field of teaching and learning; 3) evolve a broadened professional background in areas related to teaching and learning, such as systems and system interactions, and methods for program improvement; and 4) increase levels of cultural competence. Students will be immersed in research on best practices in teaching and learning, and will acquire the skills needed to apply best practices in their own schools and organizations.

Program Delivery

This program is available:

- partially online (between 50% to 80% of instruction is online)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

A master's or comparable foreign degree in education or a related field (special education, curriculum and instruction, human development, psychology, social work, management science, criminology).

Other requirements to be completed before admission:

The application must also include three letters of recommendation, a minimum of three work samples (e.g., written reports, articles, presentations, curricula, or other professional artifacts), a personal statement of career objectives, and a personal interview with the EdD teaching and learning admissions committee. The statement of career objectives will be used to 1) evaluate how well this program will meet the needs of the applicant, 2) determine if appropriate concentration courses are available, and 3) conduct an initial evaluation of writing skills. GRE scores will be considered as part of a holistic evaluation of the application. Results of the survey will also be used as part of a holistic evaluation of the application.

Applicants must submit their test score(s) from the following:

- GRE
 - General Test - Verbal Reasoning: 500
 - General Test - Quantitative Reasoning: 500

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550



The preferred English language test is Test of English as Foreign Language

Key to [test abbreviations](#)(GRE, TOEFL).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

37 credits are required in the major.

15 credits are required outside the major.

24 thesis credits are required.

This program may not be completed with a minor.

Use of 4xxx courses towards program requirements is not permitted.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 4 semesters must be completed before filing a Degree Program Form.

Preliminary written and oral exam--preliminary written and oral examinations are required and will be administered after completion of all research and major coursework.

Project--A project designed to build a knowledge base relevant to problems in schools and organizations.

Final Exam--An oral defense of the project is required.

Required Coursework

EDUC 8015 *{Inactive}*(3.0 cr)

[EDUC 8016](#) - Theory and Practice of Qualitative Research Methods (3.0 cr)

EDUC 8017 *{Inactive}*(3.0 cr)

EDUC 8018 *{Inactive}*(3.0 cr)

[EDUC 8020](#) - Doctoral Seminar (1.0 cr)

[EDUC 8001](#) - Historical, Social, and Philosophical Foundations of Education (3.0 cr)

EDUC 8003 *{Inactive}*(3.0 cr)

EDUC 8005 *{Inactive}*(3.0 cr)

EDUC 8007 *{Inactive}*(3.0 cr)

EDUC 7005 *{Inactive}*(3.0 cr)

EDUC 8009 *{Inactive}*(3.0 cr)

EDUC 8021 *{Inactive}*(3.0 cr)

[EDUC 8888](#) - Thesis Credit: Doctoral (1.0 - 24.0 cr)

Duluth Campus

Business Administration M.B.A.

Labovitz School of Business & Economics - Adm

Labovitz School of Business and Economics

Link to a [list of faculty](#) for this program.

Contact Information:

Labovitz School of Business and Economics, 219 LSBE, 1318 Kirby Drive, Duluth, MN 55812 (218-726-7440; fax: 218-726-6936)

Email: LaboMBA@d.umn.edu

Website: <http://lsbe.d.umn.edu/mba>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 32
- This program requires summer semesters for timely completion.
- Degree: Master of Business Administration

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The Labovitz master of business administration (MBA) program in Duluth is designed to meet the needs of those who would like to pursue a graduate management education either full-time or part-time. Part-time students can complete all program requirements in two to three years by taking evening courses (6:00 - 8:40 p.m.). Full-time students can finish the program in 12 months by taking a mix of day and evening courses.

The MBA program in Rochester is designed primarily to meet the needs of those who are currently employed full-time in professional managerial careers and who would like to pursue a graduate management education while continuing to work. Most courses offered in Rochester meet from 3:00-9:30 p.m. on Fridays, and 8:00 a.m.-12:30 p.m. on Saturdays every other week over a period of 7 weeks. It is possible to enroll in the program on a full-time basis by registering for 6 or more credits per semester.

The Labovitz MBA is one of six in the entire state and the only Associate to Advance Collegiate Schools of Business International (AACSB) accredited program in Northern Minnesota. This accreditation means a rigorous review process and ongoing evaluations of faculty qualifications, curriculum, continuous improvement processes, assessment practices, and student and faculty resources. Only five percent of business schools worldwide are able to achieve this accreditation, which guarantees the MBA meets the highest criteria established by the management education community.

Accreditation

This program is accredited by the Association to Advance Collegiate Schools of Business International (AACSB).

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

All applicants must have an earned bachelor's degree from a regionally or nationally accredited college or university. Waivers of this requirement will only be permitted under special circumstances.

Special Application Requirements:

The earned bachelors degree required may be waived only for students who are currently undergraduates in the Labovitz School and applying through the Integrated Undergraduate/Graduate (IUG) Option.

The preferred undergraduate GPA for admittance to the program is 3.0 (on a 4-point scale). Students who are currently undergraduates in the Labovitz School must have a minimum 3.3 GPA in order to be accepted into the IUG Option.

A GRE or GMAT score is required for all applicants except:

*Applicants who have successfully passed the CPA exam;

*Applicants to the PharmD/MBA Dual Career Program who have completed the PCAT with percentile scores at or above the 50th percentile in the three sections of PCAT related to quantitative ability, verbal ability, and reading comprehension;



*Applicants with an earned undergraduate degree from the Labovitz School or those who have been accepted into the program through the IUG Option;

*Applicants with a prior graduate degree from an accredited institution (see college for specific details).

A holistic review of GPA, GRE/GMAT score, prior work experience and other relevant factors is undertaken to determine admission eligibility. Other requirements to be completed before admission:

Students need to demonstrate competency in mathematics as well as the business foundation areas of Accounting, Economics, Financial Management, Human Resource Management, Marketing, Operations Management, Organizational Management, and Statistics through BUS or PMBA courses, other undergraduate business coursework, or competency tests. Students must consult with the MBA Director to determine competency fulfillment.

Applicants must submit their test score(s) from the following:

- GRE
- GMAT
- PCAT (only for PharmD/MBA Dual Career students)

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Listening Score: 19
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Internet Based - Speaking Score: 20
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(GRE, GMAT, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan C: Plan C requires 32 major credits and up to null credits outside the major. There is no final exam.

This program may not be completed with a minor.

Use of 4xxx courses towards program requirements is not permitted.

A minimum GPA of 2.80 is required for students to remain in good standing.

The MBA program requires completion of 32 MBA credits. The graduate-level coursework consists of 20 semester credits in the functional areas of business and its supporting areas, plus a 3-credit capstone strategic management course. In addition, all students must complete 9 credits of electives. The MBA program expects students to maintain a 2.8 GPA through completion of the program. A cumulative GPA of 2.8 is required for graduation.

Core Coursework (20 cr)

- [MBA 8111](#) - Business Ethics (2.0 cr)
- [MBA 8211](#) - Data Analysis and Statistics for Managers (2.0 cr)
- [MBA 8311](#) - Decision Making in Operations (3.0 cr)
- [MBA 8412](#) - Accounting for Decision Making and Control (3.0 cr)
- [MBA 8511](#) - Managerial Economics (2.0 cr)
- [MBA 8611](#) - Financial Management and Decision Making (3.0 cr)
- [MBA 8711](#) - Strategic Marketing Management (3.0 cr)
- [MBA 8811](#) - Human Resource Challenges (2.0 cr)

Capstone Requirement (3 cr)



Can only be taken after MBA 8311, 8501, 8611, 8711 and 8811 are taken.
[MBA 8911](#) - Strategic Management (3.0 cr)

Electives (9 cr)

These are normally fulfilled by taking designated 1 - 3 credit electives at the 5xxx, or 8xxx level. Students can also choose from the following:

[MBA 8994](#) - Directed Research (1.0 - 6.0 cr)

[MBA 8995](#) - Special Topics: (Various Titles to be Assigned) (1.0 - 3.0 cr)

Program Sub-plans

A sub-plan is not required for this program.

Students may not complete the program with more than one sub-plan.

Rochester

UMD Rochester

Duluth Campus

Music M.M.

Music

School of Fine Arts

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Music, University of Minnesota Duluth, 1201 Ordean Court, Duluth, MN, 55812 (218-726-7890; fax: 218-726-8210)

Email: umdmumm@d.umn.edu

Website: <http://sfa.d.umn.edu/about/departments/department-music/majors-minors/graduate-programs>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 30 to 31
- This program does not require summer semesters for timely completion.
- Degree: Master of Music

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master of music program offers students an opportunity to acquire advanced understanding and skills in music education, theory, and practice or in musical performance. Students in music education and performance undertake essential core courses in musicianship, theory, history, research, and education/pedagogy. Additional courses in the area of specialization are tailored relative to the interests and objectives of the student.

Accreditation

This program is accredited by the National Association of Schools of Music.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Applicants must have an undergraduate degree in music.

Other requirements to be completed before admission:

In addition, the following must be submitted for review by the music graduate committee: a completed Department of Music Graduate Study application available from www.d.umn.edu/music, which includes a sample of professional writing (a three- to five-page paper addressing current issues in music education or music performance), and a CD or DVD of recent performances, teaching demonstrations, or rehearsals. An entrance performance audition on the major instrument is required for those seeking admission to the MM in music performance. Candidates seeking admission as vocal performers, choral conductors, and collaborative pianists must demonstrate foreign language proficiency or enroll in remedial courses upon acceptance.

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.



Program Requirements

Plan B: Plan B requires 30 to 31 major credits and up to null credits outside the major. The final exam is written and oral. A capstone project is required.

Capstone Project: For the MM in music education, the Plan B project is a directed paper. This paper is a comprehensive research analysis and study in the field of music education in the standard five-chapter thesis format. This Plan B project paper constitutes 3 credits of the degree program and is generally begun in the third semester of study. A comprehensive oral examination covers the research methodology and content of the directed project paper. For the MM in music performance, the student's graduate recital fulfills the directed project requirements.

This program may not be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 2.80 is required for students to remain in good standing.

At least 2 semesters must be completed before filing a Degree Program Form.

Core Courses (10 cr)

[MU 5201](#) - Advanced Music History (2.0 cr)

[MU 8101](#) - Graduate Music Theory (2.0 cr)

[MU 8222](#) - Music Bibliography and Research (3.0 cr)

[MU 8900](#) - Psychology of Music (3.0 cr)

Program Sub-plans

Students are required to complete one of the following sub-plans.

Students may not complete the program with more than one sub-plan.

Applied Conducting

Applied Conducting (20 cr)

Applied Music

Take 8 or more credit(s) from the following:

- [MU 8701](#) - Graduate Applied Conducting (1.0 - 2.0 cr)

Ensembles

Take 2 or more credit(s) from the following courses:

MU 4xxx Performance Ensembles

[MU 5510](#) - Opera Studio (1.0 cr)

Graduate Recital

[MU 8300](#) - Graduate Recital (1.0 cr)

Literature Courses

Instrumental

Students must take MU 5204 twice for a total of 4 credits, or MU 5207 twice, plus MU 5204, for a total of 4 credits.

[MU 5204](#) - Instrumental Ensemble Literature (2.0 cr)

[MU 5207](#) - Instrumental Chamber Music Literature (1.0 cr)

Take 4 or more credit(s) from the following:

- [MU 5203](#) - Advanced Choral Literature (2.0 cr)
- [MU 5206](#) - Vocal Solo Literature (1.0 - 2.0 cr)
- [MU 5208](#) - Vocal Chamber Literature (1.0 cr)

Pedagogy

[MU 8401](#) - Graduate Music Pedagogy (1.0 cr)

Electives

MU 8302 may be repeated for a maximum of 4 credits. MU 8991 may be repeated for a maximum of 2 credits

Take 4 or more credit(s) from the following:

- [MU 8302](#) - Graduate Applied Music: Secondary Instrument (1.0 cr)
- [MU 8991](#) - Independent Study (1.0 - 2.0 cr)

Collaborative Piano

Collaborative Piano (21 cr)

Language prerequisites must be met either through diagnostic screening or remedial coursework. Students without two semesters of diction on their transcript are required to complete the undergraduate diction sequence MU 1411 and MU 1412/13.

Applied Music

Take for 8 credits.

[MU 8301](#) - Graduate Applied Music: Major Instrument (2.0 cr)

Collaborative Literature

[MU 5627](#) - Art of Accompanying: Vocal Music (2.0 cr)

[MU 5628](#) - Art of Accompanying: Instrumental Music (2.0 cr)

Graduate Recital

Take MU 8300 twice for a total of 2 credits.

[MU 8300](#) - Graduate Recital (1.0 cr)

Pedagogy

[MU 8401](#) - Graduate Music Pedagogy (1.0 cr)

Ensembles

Take 2 or more credit(s) from the following:

MU 4xxx Performance Ensembles

[MU 5510](#) - Opera Studio (1.0 cr)

Take 4 or more credit(s) from the following:

- [MU 4541](#) - Chamber Music (1.0 cr)
- [MU 4621](#) - Piano Pedagogy and Practicum I (2.0 cr)
- [MU 4622](#) - Piano Pedagogy and Practicum II (2.0 cr)
- [MU 5205](#) - Instrumental Solo Literature (1.0 cr)
- [MU 5206](#) - Vocal Solo Literature (1.0 - 2.0 cr)
- [MU 5207](#) - Instrumental Chamber Music Literature (1.0 cr)
- [MU 8302](#) - Graduate Applied Music: Secondary Instrument (1.0 cr)
- [MU 8991](#) - Independent Study (1.0 - 2.0 cr)

Music Education**Music Education (21)****Applied Music**

[MU 8302](#) - Graduate Applied Music: Secondary Instrument (1.0 cr)

Education Electives

Take 3 or more credit(s) from the following:

- [EDUC 5911](#) - Educational Organization and Leadership (3.0 cr)
- [EDAD 5913](#) - Communication and Community Relations (3.0 cr)
- [EDAD 5914](#) - Education Policy (3.0 cr)
- [EDAD 5918](#) - Continuous Improvement Processes for Schools (3.0 cr)
- [EDUC 7008](#) - Curriculum Theory and Design (3.0 cr)
- [EDUC 7009](#) - Assessment of Learning (3.0 cr)

Ensembles

Take 2 or more credit(s) from the following courses:

MU 4xxx Performance Ensembles

[MU 5510](#) - Opera Studio (1.0 cr)

Music Education

[MU 8601](#) - Foundations of Music Education (3.0 cr)

[MU 8600](#) - Methods of Research in Music Education (3.0 cr)

[MU 8605](#) - Curricular Trends in Music Education (3.0 cr)

Music Electives

Take 3 or more credit(s) from the following:

- [MU 5203](#) - Advanced Choral Literature (2.0 cr)
- [MU 5204](#) - Instrumental Ensemble Literature (2.0 cr)
- [MU 5205](#) - Instrumental Solo Literature (1.0 cr)
- [MU 5206](#) - Vocal Solo Literature (1.0 - 2.0 cr)
- [MU 5207](#) - Instrumental Chamber Music Literature (1.0 cr)
- [MU 5208](#) - Vocal Chamber Literature (1.0 cr)
- [MU 8302](#) - Graduate Applied Music: Secondary Instrument (1.0 cr)
- [MU 8701](#) - Graduate Applied Conducting (1.0 - 2.0 cr)
- [MU 8991](#) - Independent Study (1.0 - 2.0 cr)

Plan B Project

Take 3 or more credit(s) from the following:

- [MU 8899](#) - Directed Project in Music Education (1.0 - 12.0 cr)

Performance**Performance (20 cr)**

Student must complete a minimum of 20 credits; additional ensemble or electives may be taken to reach 20 credits.

Applied Music

[MU 8301](#) - Graduate Applied Music: Major Instrument (2.0 cr)

Ensemble



Take 2 or more credit(s) from the following:

MU 4xxx Performance Ensembles

MU 5510 - Opera Studio (1.0 cr)

Graduate Recital

MU 8300 - Graduate Recital (1.0 cr)

Literature Courses

Instrumental and Piano Performance and Pedagogy

MU 5204 - Instrumental Ensemble Literature (2.0 cr)

MU 5207 - Instrumental Chamber Music Literature (1.0 cr)

MU 5205 - Instrumental Solo Literature (1.0 cr)

or **Vocal**

MU 5203 - Advanced Choral Literature (2.0 cr)

MU 5208 - Vocal Chamber Literature (1.0 cr)

MU 5206 - Vocal Solo Literature (1.0 - 2.0 cr)

Pedagogy

MU 8401 - Graduate Music Pedagogy (1.0 cr)

Electives

MU 8302 may be repeated for a maximum of 4 credits. MU 8991 may be repeated for a maximum of 2 credits.

Instrumental and Vocal Electives

Take 4 or more credit(s) from the following:

•MU 8302 - Graduate Applied Music: Secondary Instrument (1.0 cr)

•MU 8701 - Graduate Applied Conducting (1.0 - 2.0 cr)

•MU 8991 - Independent Study (1.0 - 2.0 cr)

or **Piano Performance and Pedagogy Electives**

Take 4 or more credit(s) from the following:

•MU 8991 - Independent Study (1.0 - 2.0 cr)



Duluth Campus

Music Minor

Music

School of Fine Arts

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Music, University of Minnesota Duluth, 1201 Ordean Court, Duluth, MN, 55812 (218-728-8208; fax: 218-726-8210)
Email: mu@d.umn.edu

- Program Type: Graduate minor related to major
- Requirements for this program are current for Fall 2018
- Length of program in credits (Masters): 6
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The music program offers students an opportunity to acquire advanced understandings and skills in music education, theory, and practice; or in musical performance. Through a comprehensive curriculum, students may take courses in musicianship, theory, history, research, and education/pedagogy.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses towards program requirements is not permitted.

Required Coursework (6 cr)

Take 6 or more credit(s) from the following:

- MU 5xxx
- MU 8xxx

Duluth Campus

Applied and Computational Mathematics Minor

Mathematics & Statistics

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Mathematics and Statistics, 140 Solon Campus Center, 1117 University Drive, Duluth, MN 55812 (218-726-8747; fax: 218-726-8399)

Email: math.dgs@d.umn.edu

Website: <http://www.d.umn.edu/math/index>

- Program Type: Graduate minor related to major
- Requirements for this program are current for Fall 2018
- Length of program in credits (Masters): 6
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

This program is for those wishing to pursue careers in other fields that use applied and computational mathematics and statistics.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Enrollment in any MS or MA program at UMD and sufficiently strong background in mathematics and/or statistics.

Other requirements to be completed before admission:

Other requirements include the following:

- Scores from the General Test of the Graduate Record Examination, which must be mailed to the Department of Mathematics and Statistics directly
- Letters of recommendation from three people who are familiar with the applicant's educational/professional background (Request forms for these letters are part of the online application.)
- Statement on career objectives and motivation (also a part of the online application)

Students applying for financial aid should have all application materials submitted by February 15; late applications will be considered if resources are available. Applicants seeking to enroll during the fall semester must submit all materials by July 15. For initial enrollment in the spring semester, the deadline is November 1. Students can be admitted any term. Students whose native language is not English must submit TOEFL scores.

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minor for the master's degree requires 6 credits in approved MATH or STAT courses.

Required Coursework (6 cr)

Take 6 or more credit(s) from the following:

- MATH 5xxx
- MATH 8xxx
- STAT 5xxx
- STAT 8xxx

Duluth Campus

Applied Materials Science M.S.

Chemical Engineering

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 30
- This program does not require summer semesters for timely completion.
- Degree: Master of Science

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

Materials science and engineering (MSE) is a field that studies the structure, property, processing and performance of materials. The MS program in applied materials science (AMS) aims to train students to handle, lead and excel at research and development projects in the field of materials science and technology. Through unique interdisciplinary and practice oriented teaching, students will be trained for careers in wide variety of fields such as aerospace, biomedical, and energy. Collaboration with regional industry partners combined with the expertise of instructors will ensure a program that will help our graduates to succeed in their respective careers. Completion of the MS AMS program requires a minimum of 30 credit hours, which include 12 hours of required courses, 10 thesis credit hours, and at least 8 hours of elective courses.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

BA or BS degree in engineering, chemistry, physics, or similar fields; other undergraduate degrees may be accepted with additional coursework required prior to beginning the program.

Other requirements to be completed before admission:

Applicants whose native language is not English must submit score(s) from one of the following tests: TOEFL, IELTS or MELAB.

Applicants must submit their test score(s) from the following:

- GRE
 - General Test - Verbal Reasoning: 550
 - General Test - Quantitative Reasoning: 600

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
 - Reading Score: 6.5
 - Writing Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan A: Plan A requires 22 major credits, 0 credits outside the major, and 10 thesis credits. The final exam is oral.

Plan B: Plan B requires 30 major credits and 0 credits outside the major. The final exam is oral. A capstone project is required.

Capstone Project: Master's of applied science project work as determined by faculty advisor and student with approval by the program director of graduate studies.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

Core Requirements (12 cr)

AMS 5101 - Materials Analysis & Design I (4.0 cr)

AMS 5102 - Materials Analysis and Design Lab I (2.0 cr)

Plan A or Plan B

Plan A

Electives

Only 6 elective credits may be taken at the 4xxx level.

Take 8 or more credit(s) from the following:

- CE 5027 - Advanced Concrete Materials and Repair (3.0 cr)
- CHE 4141 - Material and Minerals Processing (3.0 cr)
- CHE 4142 - Extractive Metallurgy: An Introduction to metals' extraction (3.0 cr)
- CHE 5131 - Polymer Engineering (3.0 cr)
- CHE 5711 - Biomedical Engineering (3.0 cr)
- CHEM 4373 - Physical Biochemistry: Statistical Bio-Thermodynamics (3.0 cr)
- CHEM 4374 - Physical Biochemistry Laboratory (2.0 cr)
- CHEM 5510 - Polymer Chemistry (3.0 cr)
- CHEM 5650 - Computational Chemistry (3.0 cr)
- CHEM 5714 - Applications of Spectroscopy (4.0 cr)
- EE 4611 - Introduction to Solid-State Semiconductors (3.0 cr)
- EE 5621 - Microelectronics Technology (3.0 cr)
- EES 5321 - Theory, Practice of Scanning Electron Microscopy and X-Ray Microanalysis in Lectures (3.0 cr)
- IE 5325 - Advanced Engineering Economics (3.0 cr)
- ME 5220 - Advanced Mechanics of Materials (3.0 cr)
- ME 5315 - Nondestructive Evaluation of Engineering Materials (3.0 cr)
- ME 5345 - Smart Materials and Structures (3.0 cr)
- PHYS 5041 - Optics (3.0 cr)
- PHYS 5531 - Introduction to Solid State Physics (3.0 cr)

Thesis credits

AMS 8777 - Thesis Credits: Master's (1.0 - 10.0 cr)

or Plan B

Only 6 elective credits may be taken at the 4xxx level.

Take 15 or more credit(s) from the following:

- CE 5027 - Advanced Concrete Materials and Repair (3.0 cr)
- CHE 4141 - Material and Minerals Processing (3.0 cr)
- CHE 4142 - Extractive Metallurgy: An Introduction to metals' extraction (3.0 cr)
- CHE 5131 - Polymer Engineering (3.0 cr)
- CHE 5711 - Biomedical Engineering (3.0 cr)
- CHEM 4373 - Physical Biochemistry: Statistical Bio-Thermodynamics (3.0 cr)
- CHEM 4374 - Physical Biochemistry Laboratory (2.0 cr)
- CHEM 5510 - Polymer Chemistry (3.0 cr)
- CHEM 5650 - Computational Chemistry (3.0 cr)
- CHEM 5714 - Applications of Spectroscopy (4.0 cr)
- EE 4611 - Introduction to Solid-State Semiconductors (3.0 cr)
- EE 5621 - Microelectronics Technology (3.0 cr)
- EES 5321 - Theory, Practice of Scanning Electron Microscopy and X-Ray Microanalysis in Lectures (3.0 cr)
- IE 5325 - Advanced Engineering Economics (3.0 cr)
- ME 5220 - Advanced Mechanics of Materials (3.0 cr)
- ME 5315 - Nondestructive Evaluation of Engineering Materials (3.0 cr)
- ME 5345 - Smart Materials and Structures (3.0 cr)
- PHYS 5041 - Optics (3.0 cr)
- PHYS 5531 - Introduction to Solid State Physics (3.0 cr)

Capstone Project

AMS 5555 - Applied Materials Science Project Credits (3.0 - 6.0 cr)



Duluth Campus

Chemical Engineering M.S.Ch.E

Chemical Engineering

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

176 Engineering, 1303 Ordean Court, Duluth, MN 55812

218-726-7126

Email: umdche@d.umn.edu

Website: <http://www.d.umn.edu/che/>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 30
- This program does not require summer semesters for timely completion.
- Degree: Master of Chemical Engineering

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The MSChE degree combines scholarship and research in a program oriented towards students and engineering practitioners in the private and public sectors who are interested in advanced coursework and applied research. The program requires 30 credits of coursework and applied research focusing on core departmental strengths of process modeling and simulation, environmental monitoring and remediation, and transport phenomena. There are two options for completing an MSChE degree: Plan A (thesis option), and Plan B (project option). Plan A involves writing and defending a thesis which requires in-depth research equivalent to 10 credits out of total 30 credits. Plan B involves a capstone project equivalent to 3 credits (out of 30 total credits) and targets those students or practicing engineers who wish to have a hands-on learning experience solving technical problems preferably teaming up with an industrial counterpart.

Undergraduate students in the Chemical Engineering program who are interested in pursuing the Master of Chemical Engineering at UMD may apply for admission to the Integrated Undergraduate/Graduate (IUG) Program. Students in the IUG Program start their graduate coursework prior to the completion of their undergraduate degree and may apply up to 9 credits of coursework to both their undergraduate B.S.Ch.E. and graduate M.S.Ch.E. degrees. Admission to the IU Program is limited to highly qualified upper division undergraduates.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Preferred minimum GPA is 3.00 in engineering and 3.25 in science.

Other requirements to be completed before admission:

B.S. in ChE or other Engineering from an ABET accredited institution or admission to the integrated undergraduate/graduate option.

Other undergraduate degrees may be accepted with additional coursework in ChE required prior to beginning the program requirements for the MS degree. Additional course work may include, ChE 2111 Material and Energy Balances, ChE 2121 Thermodynamics, ChE 3111 Fluid Mechanics, ChE 3112 Heat and Mass Transfer, ChE 4111 Separations, ChE 4301 Reaction Engineering.

Examples of such degree programs include B.S. in Biology, Biochemistry, Chemistry, Geology, or Physics.

The GRE (Graduate Record Exam) is required. Preferred minimum scores are Verbal=153 (550-old scoring system), Quantitative=160 (650-old scoring system).

For international applicants whose native language is not English, a TOEFL score preferred performance minimum is 213 on the computer-based test

Special Application Requirements:

The earned bachelors degree required may be waived only for current students in the B.S.Ch.E. program and who are applying through the Integrated Undergraduate/Graduate (IUG) option.

Applicants must submit their test score(s) from the following:

- GRE
 - General Test - Verbal Reasoning: 153
 - General Test - Quantitative Reasoning: 160

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 213

Key to [test abbreviations](#)(GRE, TOEFL).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan A: Plan A requires 14 to 20 major credits, 0 to 6 credits outside the major, and 10 thesis credits. The final exam is oral.

Plan B: Plan B requires 24 to 30 major credits and 0 to 6 credits outside the major. The final exam is oral. A capstone project is required.

Capstone Project: TBD

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.0 is required for students to remain in good standing.

Students with a BS in the sciences are expected to have knowledge of material and energy balances, heat and mass transfer, fluid mechanics, thermodynamics, chemical reaction engineering, and process control. Proficiency will be determined by the completion of at least three undergraduate courses as determined by the Major Advisor and Program of Study Committee.

Only 6 elective credits may be taken at the 4xxx level. All other courses must be taken at the 5xxx level or higher.

Core Requirements (11 cr)

Must take CHE 8150 for a total of 2 credits.

[CHE 8150](#) - Seminar (1.0 cr)

Take 3 or more course(s) totaling 9 or more credit(s) from the following:

- [CHE 5021](#) - Transport Phenomena (3.0 cr)
- [CHE 5031](#) - Chemical Engineering Analysis (3.0 cr)
- [CHE 5121](#) - Advanced Thermodynamics (3.0 cr)
- [CHE 5301](#) - Advanced Chemical Reactor Design (3.0 cr)

Plan A or Plan B**Plan A Requirements****Electives**

Take at least 9 credits of electives, in consultation with the advisor.

Thesis Credits

Take at least 10 master's thesis credits

[CHE 8777](#) - Thesis Credits: Master's (1.0 - 10.0 cr)

or Plan B Requirements**Required Course**

Take 3 credits of CHE 5555.

[CHE 5555](#) - Project Credits: MEng - Chemical Engineering (3.0 - 6.0 cr)

Additional Courses

Take at least 7 additional credits, selected in consultation with the advisor.

Electives

Take at least 9 credits of electives, in consultation with the advisor.

Duluth Campus

Chemistry M.S.

Chemistry and Biochemistry

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Chemistry and Biochemistry, 246 Chemistry Building, 1039 University Drive, Duluth MN 55812 (218-726-7212; fax: 218-726-7394)

Email: chem.@d.umn.edu

Website: <http://www.d.umn.edu/chem/graduates/>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 31
- This program requires summer semesters for timely completion.
- Degree: Master of Science

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master of science program offers a broad-based education in chemistry that is well suited for students going on to doctoral programs, careers in industry, or professional schools. Both Plan A (with thesis) and Plan B (without thesis) are available. For Plan A, emphases include analytical, biological, inorganic, organic, and physical chemistry. The faculty includes members from the departments of Chemistry and Biochemistry, Chemical Engineering, and Mechanical and Industrial Engineering in the Swenson College of Science and Engineering; the departments of Biochemistry and Molecular Biology, and Medical Microbiology and Immunology in the Medical School; as well as members from the Natural Resources Research Institute, and the College of Pharmacy.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Applicants must have completed an undergraduate chemistry or biochemistry major. Coursework should include inorganic chemistry, physical chemistry, calculus, and physics.

General GRE is strongly encouraged, but not required.

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan A: Plan A requires 15 major credits, 6 credits outside the major, and 10 thesis credits. The final exam is oral.

Plan B: Plan B requires 25 major credits and 6 credits outside the major. The final exam is oral. A capstone project is required.
Capstone Project: The Plan B requires writing three papers in the major and related fields.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.0 is required for students to remain in good standing.

All students must complete 31 credits. All students must complete at least 15 credits in the major field and at least 6 credits in a related field or minor. In addition, Plan A students must register for 10 thesis credits; Plan B students must complete an additional 10 course credits and write three papers. Attendance and presentation at the chemistry seminar are required. Individual programs are designed to best serve the interests of the student. 4xxx courses must be approved by the director of Graduate Studies.

Major Field (14 cr)

At least 14 credits in course credits have to be taken for both Plan A or Plan B programs. Other courses may be approved by the director of Graduate Studies.

Take 14 or more credit(s) from the following:

- CHEM 5xxx
- CHEM 8xxx

Chemistry Seminar (1 cr)

[CHEM 8184](#) - Seminar (1.0 cr)

Related Field (6 cr)

At least 6 credits be taken outside the major for both Plan A and Plan B programs. These credits outside the major must be taken from approved related fields.

Plan A or Plan B

Plan A

Students must take 10 thesis credits, and write and defend a thesis on original research as part of the final oral examination.

[CHEM 8777](#) - Thesis Credits: Master's (1.0 - 18.0 cr)

or **Plan B**

Additional 10 course credits

Duluth Campus

Chemistry Minor

Chemistry and Biochemistry

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Chemistry and Biochemistry, 246 Chemistry Building, 1039 University Drive, Duluth, MN 55812 (218-726-7212; fax: 218-726-7394)

Email: chem@d.umn.edu

Website: <http://www.d.umn.edu/chem/grad>

- Program Type: Graduate minor related to major
- Requirements for this program are current for Fall 2018
- Length of program in credits (Masters): 6
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The graduate chemistry program offers a broad-based education in chemistry that is well suited for students going on to doctoral programs, careers in industry, or professional schools. The faculty includes members from the Departments of Chemistry and Biochemistry, Chemical Engineering, and Mechanical and Industrial Engineering in the Swenson College of Science and Engineering; the Departments of Biochemistry and Molecular Biology and Medical Microbiology and Immunology in the Medical School; as well as members from the Natural Resources Research Institute, and the College of Pharmacy.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

Required Coursework (6 cr)

Take 6 or more credit(s) from the following:

- CHEM 5xxx
- CHEM 8xxx
- MDBC 5xxx
- MDBC 8xxx

Duluth Campus

Civil Engineering M.S.

UMD-Civil Engineering, Dept of

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

221 Swenson Civil Engineering, 1405 University Drive, Duluth, Minnesota, MN 55812 (218-726-6444; fax: 218-726-6445)

Email: civileng@d.umn.edu.

Website: <http://www.d.umn.edu/civileng/grad/index.html>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 30
- This program does not require summer semesters for timely completion.
- Degree: Master of Science

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

Along with the program-specific requirements listed below, please read the General Information section of this website for requirements that apply to all major fields.

The Civil Engineering Department offers graduate degrees in civil engineering. The master's of science (MS) in civil engineering is intended for students pursuing a research emphasis and seeking in-depth knowledge in an area within civil engineering. Undergraduate students who are admitted into the Integrated Undergraduate/Graduate (IUG) Program can apply up to 9 credits of approved coursework to both their undergraduate (BSCE) and graduate (MSCE) degrees. Students must be admitted to the IUG program prior to taking courses in order to count toward graduate credits.

IUG application deadline:

December 15th for Spring admission

July 15th for Fall admission

IUG application requirements:

Letters of recommendation from two Civil Engineering faculty members

Minimum GPA of 3.35

Students must apply to IUG program at least two semesters before completing BSCE degree

Admission preference will be given to students committed to completing a thesis-based (Plan A) MS degree

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Applicants must have earned a BS degree in engineering (e.g., civil, mechanical, chemical, environmental) or the sciences (e.g., chemistry, physics, mathematics).

Other requirements to be completed before admission:

For students from disciplines other than civil engineering, some remedial coursework may be needed. Students requiring a substantial amount of remedial coursework (e.g., more than 3 courses) may be recommended to complete a few courses prior to entry into the program, but for most students the additional coursework could be completed while a graduate student in the program. Students should consult with the CE director of graduate studies or a faculty member in their area of interest for a review and assessment of their academic background and coursework needs.

Special Application Requirements:

Applicants should submit the following supplemental materials with their application:

-Applicant Statement Number 1 (Educational and Career Goals, limit one page)

-Applicant Statement Number 2 (Statement of Purpose, limit one page)

-Program form for Civil Engineering



- CV or resume (list technical publications and conference presentations)
- Unofficial transcripts

- Two letters of recommendation (waived for current UMD CE undergraduate students, unless applying to the IUG program)
 - Letters should be requested from persons familiar with the student's performance in an academic or non-academic (i.e. work) setting and who can comment on potential for success in graduate school. Preference is for recommenders from academia.
 - Recommenders should address the following points: (i) the capacity in which they know the student--as a teacher, research adviser, work supervisor, etc., and for how long; (ii) academic (or work) record and accomplishments; and (iii) their assessment of the student's ability to succeed in graduate-level coursework and research.
 - Letters of recommendation should be submitted online through the existing application. When recommenders use the online process, there is an optional student rating form. It is important that each recommender submit a narrative letter, regardless of whether or not they use the optional rating form.
 - While online recommendations are preferred, paper copies are acceptable. Paper copies should be directly mailed to the department in sealed envelopes.

Applications are due December 15 for consideration for the following fall semester and March 31 for consideration for the following spring semester. Domestic applicants applying for a part-time study who do not require financial support are able to apply as late as March 15 for fall and September 15 for spring semester respectively, but are still encouraged to apply by the above mentioned CE deadlines.

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan A: Plan A requires 6 to 20 major credits, 0 to 14 credits outside the major, and 10 thesis credits. The final exam is oral.

Plan B: Plan B requires 12 to 30 major credits and 0 to 18 credits outside the major. The final exam is oral. A capstone project is required.

Capstone Project: Courses and a project are arranged by the student and department adviser.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.0 is required for students to remain in good standing.

The MS Plan A is intended for students pursuing a research emphasis and seeking in-depth knowledge in an area within civil engineering. The MS requires completion of an original body of work resulting from research conducted by the student under the supervision of an advisory committee of graduate faculty members. The MS requires 20 credits of coursework and 10 thesis credits (approximately 375 hours of work including writing of the report), usually completed within two years.

The M.S. Plan B is designed to provide additional training in civil engineering to prepare students for a higher level of engineering design work. The M.S. Plan B requires 24 credits of coursework and 6 project credits (approximately 225 hours of work, including writing of the report), usually completed within one to two years.

Successful completion of CE 8094 is required prior to graduation.



Plan A or Plan B

Plan A

Course Work

Student may use up to 6 approved 4xxx credits towards program requirements. CE 4126 and CE 4255 cannot be counted toward an MS degree.

Take 6 or more credit(s) from the following:

- CE 4xxx
- CE 5xxx
- CE 8xxx

Graduate Seminar

[CE 8020](#) - Graduate Seminar (1.0 cr)

Thesis credits

Students must take CE 8777 for a minimum of 10 credits.

[CE 8777](#) - Thesis Credits: Master's (1.0 - 12.0 cr)

or **Plan B**

Course Work

Student may use up to 6 approved 4xxx credits towards program requirements. CE 4126 and CE 4255 cannot be counted toward an MS degree.

Take 6 or more credit(s) from the following:

- CE 4xxx
- CE 5xxx
- CE 8xxx

Graduate Seminar

[CE 8020](#) - Graduate Seminar (1.0 cr)

Project credits (6 cr)

Students must take CE 8094 for a minimum of 6 credits.

[CE 8094](#) - Civil Engineering Master's Project (1.0 - 6.0 cr)

Duluth Campus

Computer Science M.S.

Computer Science

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Computer Science, University of Minnesota Duluth, 1114 Kirby Drive, 320 Heller Hall, Duluth, MN 55812 (218-726-7607; fax: 218-726-8240)

Email: cs@d.umn.edu

Website: <http://www.d.umn.edu/cs/degrees/grad/>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 33
- This program does not require summer semesters for timely completion.
- Degree: Master of Science

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

Computer science is a discipline that involves understanding the design of computers and computational processes. Study in the field ranges from the theoretical study of algorithms to the design and implementation of software at the systems and applications levels.

The master of science is a two-year program that provides the necessary foundational studies for graduates planning to pursue either a doctorate in computer science or a career as a computer scientist in business or industry. It is designed for students with undergraduate degrees in computer science or computer engineering. These students should be able to enroll immediately in 8xxx computer science courses.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

The program is designed for students with undergraduate degrees in computer science or computer engineering.

Other requirements to be completed before admission:

Students with undergraduate degrees in fields other than computer science or computer engineering may be considered for admittance if they have completed the following courses or their equivalents: CS 1511-1521 - Computer Science I-II; CS 2511 - Software Analysis and Design; CS 2521 - Computer Organization and Architecture; CS 3511 - Computer Science Theory; CS 5621 - Computer Architecture or CS 5651 - Computer Networks; and CS 5631 - Operating Systems. The appropriate math prerequisites, namely MATH 1296-1297 - Calculus I-II and STAT 3611 - Introduction to Probability and Statistics, are also required.

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

The preferred English language test is Test of English as Foreign Language

Key to [test abbreviations](#)(GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan A: Plan A requires 17 to 23 major credits, 0 to 6 credits outside the major, and 10 thesis credits. The final exam is oral.

Plan B: Plan B requires 27 to 33 major credits and 0 to 6 credits outside the major. The final exam is oral.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

The master of science degree is offered under Plan A (thesis) and Plan B (non-thesis). At least 33 credits are required, including 16 credits from 8xxx courses in computer science, 1 credit of CS 8993 - Seminar, and 6 credits of electives (either CS 5xxx courses or from a minor or related field). Plan A also requires 10 thesis credits; Plan B requires at least 10 credits in additional courses, 5xxx or above. Except in very rare instances, these must be computer science courses. All courses are chosen in consultation with the student's adviser, subject to approval by the director of graduate studies. Normally 4xxx computer science courses may not be included in degree programs for the master of science in computer science.

Computer Science requirement (17 cr)

Take 16 or more credit(s) from the following:

- CS 5652 *{Inactive}*(4.0 cr)
- CS 8631 *{Inactive}*(4.0 cr)
- CS 5612 *{Inactive}*(4.0 cr)
- CS 8751 *{Inactive}*(4.0 cr)
- CS 8761 *{Inactive}*(4.0 cr)
- CS 8771 *{Inactive}*(4.0 cr)
- CS 5732 - Advanced Computer Security (4.0 cr)

Graduate Seminar

- CS 8993 - Seminar (1.0 cr)

Electives outside of Computer Science (6 cr)

The purpose of this requirement is to provide coursework that will support your degree program without duplicating or overlapping courses available within the graduate CS curriculum. Such courses may be chosen from mathematics, statistics, electrical engineering and CS 5xxx courses subject to the approval of the director of graduate studies.

Plan A or Plan B (10 cr)

Plan A

Students must register for 10 credits.

- CS 8777 - Thesis Credits: Master's (1.0 - 24.0 cr)

or Plan B

Take 10 or more credit(s) from the following:

- CS 5511 *{Inactive}*(4.0 cr)
- CS 5521 *{Inactive}*(4.0 cr)
- CS 5222 - Artificial Intelligence (4.0 cr)
- CS 5551 *{Inactive}*(4.0 cr)
- CS 5571 *{Inactive}*(4.0 cr)
- CS 5621 *{Inactive}*(4.0 cr)
- CS 5312 - Operating Systems (4.0 cr)
- CS 5342 - Compiler Design (4.0 cr)
- CS 5422 - Computer Networks (4.0 cr)
- CS 5212 - Computer Graphics (4.0 cr)
- CS 5232 - Introduction to Machine Learning and Data Mining (4.0 cr)
- CS 5242 - Natural Language Processing (4.0 cr)
- CS 5991 - Independent Study (1.0 - 4.0 cr)
- CS 5994 - Advanced Topics in Computer Science (4.0 cr)
- CS 5652 *{Inactive}*(4.0 cr)
- CS 8631 *{Inactive}*(4.0 cr)
- CS 5612 *{Inactive}*(4.0 cr)



- CS 8751 *{Inactive}*(4.0 cr)
- CS 8761 *{Inactive}*(4.0 cr)
- CS 8771 *{Inactive}*(4.0 cr)
- CS 5732 - Advanced Computer Security (4.0 cr)



Duluth Campus

Computer Science Minor

Computer Science

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Computer Science, 1114 Kirby Drive, 320 Heller Hall, Duluth, MN 55812 (218-726-7607; fax: 218-726-8240)

Email: cs@d.umn.edu

Website: <http://www.d.umn.edu/cs/degrees/grad>

- Program Type: Graduate minor related to major
- Requirements for this program are current for Fall 2018
- Length of program in credits (Masters): 8
- Length of program in credits (Doctorate): 8
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

Computer science is a discipline that involves understanding the design of computers and computational processes. Study in the field ranges from the theoretical study of algorithms to the design and implementation of software at the systems and applications levels.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

Required Coursework (8 cr)

Take 8 or more credit(s) from the following:

- CS 5xxx
- CS 8xxx

Duluth Campus

Electrical Engineering M.S.E.E.

Electrical Engineering

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

EE Graduate Program, 271 MWAH, 1023 University Drive, Duluth, MN 55812 (218-726-6830; fax: 218-726-7267)

Email: umnee@d.umn.edu

Website: <http://www.d.umn.edu/ee/>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 31
- This program does not require summer semesters for timely completion.
- Degree: Master of Science in Electrical Engineering

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master of science in electrical engineering (MSEE) combines scholarship and research in a program oriented toward students and engineering practitioners in the private and public sectors who are interested in advanced coursework and applied research. The program requires 31 credits of graduate coursework and research with focus on the departmental faculty's research areas of control systems, communications, signal processing, VLSI, nanoscale optoelectronics and photovoltaics, biomedical engineering, and intelligent transportation systems.

Undergraduate students in the Electrical Engineering program who are interested in pursuing the Master of Electrical Engineering at UMD may apply for admission to the Integrated Undergraduate/Graduate (IUG) Program. Students in the IUG Program start their graduate coursework prior to the completion of their undergraduate degree and may apply up to 9 credits of coursework to both their undergraduate B.S.E.E. and graduate M.S.E.E. degrees. Admission to the IU Program is limited to highly qualified upper division undergraduates.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

An undergraduate degree in electrical engineering, computer engineering, or computer science. Applicants from related majors may apply but may be required to take additional undergraduate courses.

Special Application Requirements:

The earned bachelors degree required may be waived only for current students in the Electrical Engineering B.S.E.E. program and who are applying through the Integrated Undergraduate/Graduate (IUG) option.

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

The preferred English language test is Test of English as Foreign Language

Key to [test abbreviations](#)(TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan A: Plan A requires 15 to 21 major credits, 0 to 6 credits outside the major, and 10 thesis credits. The final exam is oral.

Plan B: Plan B requires 25 to 31 major credits and 0 to 6 credits outside the major. The final exam is oral. A capstone project is required.

Capstone Project: The Plan B project is for those students or practicing engineers who wish to have a hands-on learning experience solving technical problems, preferably by teaming up with an industrial counterpart. Plan B students are required to take a minimum of 1 and a maximum of 3 project credits.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 1 semester must be completed before filing a Degree Program Form.

The master of science in electrical engineering (MSEE) degree requires 31 semester credits. The program offers two degree plans, plan A and plan B. Plan A is research oriented and it requires students to complete a research thesis (10 credits) and additional coursework. Plan B is coursework oriented with a project (1–3 credits) as the research component. For both thesis research and project research, a student is expected to identify a research adviser during the first two semesters in the program.

Plan A: Thesis Option

Students must complete a minimum of 31 semester credits including 10 thesis credits and 21 coursework credits. Plan A students must register for 10 thesis (EE 8777) credits, and write and defend a thesis on original research. Students may take up to 6 credits from graduate programs in related fields outside of EE. All courses must be 4xxx or above; a maximum of 6 credits in courses at 4xxx level is allowed, a minimum of 3 credits in courses at 8xxx is required; excluding EE 8001 and EE 8777.

Plan B: Project Option

Students must complete a minimum of 31 semester credits including project credits. Plan B students must register for at least 1 project credit (EE 8222), and write and defend a project report. Students may take up to 6 credits from graduate programs in related fields outside of EE. All courses must be 4xxx or above; a maximum of 6 credits in courses at 4xxx level is allowed, a minimum of 3 credits in courses at 8xxx is required, excluding EE 8001 and EE 8222.

Plan A or Plan B

Plan A

Take exactly 1 credit(s) from the following:

- EE 8001 - Graduate Professional Communication Seminar (1.0 cr)

Take exactly 10 credit(s) from the following:

- EE 8777 - Thesis Credits: Master's (1.0 - 18.0 cr)

Take 20 or more credit(s) from the following:

- EE 4305 - Computer Architecture (4.0 cr)
- EE 4311 - Design of VLSI Circuits (4.0 cr)
- EE 4321 - Computer Networks (3.0 cr)
- EE 4341 - Digital Systems (4.0 cr)
- EE 4501 - Power Systems (4.0 cr)
- EE 4611 - Introduction to Solid-State Semiconductors (3.0 cr)
- EE 4896 - Co-op in Electrical Engineering (1.0 cr)
- EE 5151 - Digital Control System Design (3.0 cr)
- EE 5211 *{Inactive}*(3.0 cr)
- EE 5315 - Multiprocessor-Based System Design (3.0 cr)
- EE 5477 - Antennas and Transmission Lines (3.0 cr)
- EE 5479 - Antennas and Transmission Lines Laboratory (1.0 cr)
- EE 5501 - Energy Conversion System (3.0 cr)
- EE 5522 - Power Electronics I (3.0 cr)
- EE 5533 - Grid- Resiliency, Efficiency and Technology (3.0 cr)
- EE 5621 - Microelectronics Technology (3.0 cr)
- EE 5741 - Digital Signal Processing (3.0 cr)



- EE 5742 - Pattern Recognition and Machine Learning (4.0 cr)
- EE 5745 - Medical Imaging (3.0 cr)
- EE 5765 - Modern Communication (4.0 cr)
- EE 5801 - Introduction to Artificial Neural Networks (3.0 cr)
- EE 5831 *{Inactive}*(3.0 cr)
- EE 5995 - Special Topics: (Various Titles to be Assigned) (1.0 - 3.0 cr)
- EE 8151 - Optimal Control Systems (3.0 cr)
- EE 8741 - Digital Image Processing (4.0 cr)
- EE 8742 *{Inactive}*(3.0 cr)
- EE 8765 - Digital Communications (3.0 cr)

or **Plan B**

Take exactly 1 credit(s) from the following:

- EE 8001 - Graduate Professional Communication Seminar (1.0 cr)

Take 1 - 3 credit(s) from the following:

- EE 8222 - Master's Plan B Research and Design Project (1.0 - 3.0 cr)

Take 27 - 29 credit(s) from the following:

- EE 4305 - Computer Architecture (4.0 cr)
- EE 4311 - Design of VLSI Circuits (4.0 cr)
- EE 4321 - Computer Networks (3.0 cr)
- EE 4341 - Digital Systems (4.0 cr)
- EE 4501 - Power Systems (4.0 cr)
- EE 4611 - Introduction to Solid-State Semiconductors (3.0 cr)
- EE 4896 - Co-op in Electrical Engineering (1.0 cr)
- EE 5151 - Digital Control System Design (3.0 cr)
- EE 5211 *{Inactive}*(3.0 cr)
- EE 5315 - Multiprocessor-Based System Design (3.0 cr)
- EE 5351 - Introduction to Robotics and Mobile Robot Control Architectures (3.0 cr)
- EE 5477 - Antennas and Transmission Lines (3.0 cr)
- EE 5501 - Energy Conversion System (3.0 cr)
- EE 5522 - Power Electronics I (3.0 cr)
- EE 5533 - Grid- Resiliency, Efficiency and Technology (3.0 cr)
- EE 5621 - Microelectronics Technology (3.0 cr)
- EE 5741 - Digital Signal Processing (3.0 cr)
- EE 5742 - Pattern Recognition and Machine Learning (4.0 cr)
- EE 5745 - Medical Imaging (3.0 cr)
- EE 5765 - Modern Communication (4.0 cr)
- EE 5801 - Introduction to Artificial Neural Networks (3.0 cr)
- EE 5831 *{Inactive}*(3.0 cr)
- EE 5995 - Special Topics: (Various Titles to be Assigned) (1.0 - 3.0 cr)
- EE 8151 - Optimal Control Systems (3.0 cr)
- EE 8741 - Digital Image Processing (4.0 cr)
- EE 8742 *{Inactive}*(3.0 cr)
- EE 8765 - Digital Communications (3.0 cr)



Duluth Campus

Electrical Engineering Minor

Electrical Engineering

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

EE Graduate Program, 271 MWAH, 1023 University Drive, Duluth, MN 55812 (218-726-6830; fax: 218-726-7267)

Email: umdee@d.umn.edu

Website: <http://www.d.umn.edu/ee/>

- Program Type: Graduate minor related to major
- Requirements for this program are current for Fall 2018
- Length of program in credits (Masters): 6
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The Master of Science in Electrical Engineering (M.S.E.E) combines scholarship and research in a program oriented toward students and engineering practitioners in the private and public sectors who are interested in advanced coursework and applied research. The minor allows students to get exposed to advanced sciences and technologies in electrical engineering.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

1. Individual programs must be approved by the director of graduate studies of electrical engineering program.

Required (6 cr)

Take 6 or more credit(s) from the following:

- EE 5xxx
- EE 8xxx

Duluth Campus

Environmental Health and Safety M.Env.Hlth.Sa.

UMD Mechanical/Industrial Engineering

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

MEHS Director of Graduate Studies, 105 Voss-Kovach Hall, 1305 Ordean Court, Duluth, MN 55812 (218-726-7981)

Email: mehs@d.umn.edu

Website: <http://www.d.umn.edu/mehs>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 33
- This program requires summer semesters for timely completion.
- Degree: Master of Environmental Health and Safety

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master's of environmental health and safety (MEHS) program prepares its graduates for professional careers in environmental health and safety--encompassing occupational safety, industrial hygiene, ergonomics, risk management, and environmental health. The program strives not only to provide academic-based knowledge, but also the technical and practical skills necessary to be a successful EHS professional and the coursework covers a broad range of EHS topics.

Ultimately, the mission of the MEHS program is to produce highly regarded and sought-after graduates who have the requisite skills and knowledge to practice environmental health and safety effectively in a diverse range of occupations and will do so in a competent, professional, and ethical manner.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Applicants preferably will have a baccalaureate degree in a science, engineering, or other EHS-related field. All degrees, must have been earned at an accredited college or university.

Other requirements to be completed before admission:

Applicants must have earned a grade of C or better at the collegiate level in the following introductory coursework: chemistry with a lab component, and statistics.

Applicants must provide three letters of recommendation, one of which should be from an instructor or professor in the department awarding the student's baccalaureate degree. Recommendations should address either the student's academic ability or readiness to pursue a professional graduate degree in EHS, if not both. Recommendations from family members will not be accepted.

Preferred applicants will have work experience related to EHS and have completed collegiate-level coursework in introductory physics, human biology and/or physiology, and psychology.

Special Application Requirements:

Applicants must also provide:

- Answers to essay questions (see Admissions Details on program website link found under "Supplemental Information Required")
- Transcript(s) indicating completion of a baccalaureate degree program and grades obtained in the prerequisite courses
- Resume or CV

International applicants must submit score(s) from one of the following tests:

- TOEFL

- Internet Based - Total Score: 79
- Internet Based - Writing Score: 21
- Internet Based - Reading Score: 19
- Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan C: Plan C requires 33 major credits and 0 credits outside the major. There is no final exam. A capstone project is required.

Capstone Project: The Plan C capstone internship project requires a student to apply knowledge and skills acquired from the MEHS coursework and demonstrate their mastery of EHS-related material and concepts in identifying and addressing a particular concern. The project is part of a minimum six-week cooperative internship conducted in an industrial, government, or other organization having an established safety project or in the process of implementing a safety project. A daily work log, written evaluation by the internship supervisor, a two-page executive summary of the project and an oral presentation are required.

This program may be completed with a minor.

Use of 4xxx courses towards program requirements is not permitted.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least two semesters in residence are required.

Core Requirements (27 cr)

- [SAFE 6002](#) - Regulatory Standards and Hazard Control (3.0 cr)
- [SAFE 6011](#) - System Safety and Loss Control Techniques (3.0 cr)
- [SAFE 6012](#) - Risk Management and Workers' Compensation (3.0 cr)
- [SAFE 6101](#) - Principles of Industrial Hygiene (3.0 cr)
- [SAFE 6102](#) - Advanced Industrial Hygiene and Health Physics (3.0 cr)
- [SAFE 6201](#) - Fire Prevention and Emergency Preparedness (3.0 cr)
- [SAFE 6302](#) - Occupational Ergonomics and Injury Management (3.0 cr)
- [SAFE 6401](#) - Environmental Safety and Legal Implications (3.0 cr)
- [SAFE 6821](#) - Organization and Administration of Safety Programs (3.0 cr)

Electives (3 cr)

Take 3 or more credit(s) from the following:

- [IE 5315](#) - Organizational Control Methods (3.0 cr)
- [IE 5325](#) - Advanced Engineering Economics (3.0 cr)
- [SAFE 6051](#) - Construction Safety (3.0 cr)
- [SAFE 6211](#) - Transportation Safety (3.0 cr)
- [SAFE 6212](#) *{Inactive}*(3.0 cr)
- [SAFE 6213](#) *{Inactive}*(3.0 cr)
- [SAFE 6291](#) - Independent Study in Industrial Safety (1.0 - 3.0 cr)
- [SAFE 6295](#) - Special Topics: (Various Titles to be Assigned) (1.0 - 3.0 cr)
- [SAFE 6301](#) *{Inactive}*(3.0 cr)

Internship (3 cr)

Register for the 3-credit internship no later than 12 months after completing the program coursework.

- [SAFE 6997](#) - Internship in Environmental Health and Safety (3.0 cr)

Duluth Campus

Geological Sciences M.S.

D Earth & Environmental Sci

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Geological Sciences, University of Minnesota Duluth, 229 Heller Hall, 1114 Kirby Drive, Duluth, MN 55812 (218-726-7239; fax: 218-726-7218)

Email: dees@d.umn.edu

Website: <http://www.d.umn.edu/dees/>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 31
- This program does not require summer semesters for timely completion.
- Degree: Master of Science

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master of science program in geological sciences includes areas of economic geology, geophysics, glacial geology and geomorphology, hydrogeology, igneous and metamorphic petrology, isotope and aqueous geochemistry, limnogeology, paleoclimatology, planetary geology, sedimentology and stratigraphy, surface processes, and structure-tectonics. Several of these areas are strengthened by collaboration with the Large Lakes Observatory, the Natural Resources Research Institute, and the Precambrian Research Center.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

A four-year BS degree in geology or a related field in engineering, basic science, or mathematics is required.

Other requirements to be completed before admission:

Most candidates will have completed a bachelor's degree in geology, geophysics, or a related field. However, students with degrees in fields such as chemistry, physics, or biology are encouraged to apply. At least one year of study in calculus, chemistry, and physics is required. Field camp and/or undergraduate research experience is recommended.

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

The preferred English language test is Test of English as Foreign Language

Key to [test abbreviations](#)(GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan A: Plan A requires 15 major credits, 6 credits outside the major, and 10 thesis credits. The final exam is oral.

Plan B: Plan B requires 31 major credits and up to null credits outside the major. The final exam is written.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 1 semester must be completed before filing a Degree Program Form.

The master of science degree is offered under Plan A (thesis) and Plan B (non-thesis). Courses are selected with approval of the student's advisor and the director of graduate studies. All courses must be at the 4xxx, 5xxx, or 8xxx level, however no more than 9 credits at the 4xxx level may apply.

For Plan A, a candidacy exam that involves the oral defense of a written thesis research proposal during the second semester of residency is required.

For Plan B, a written candidacy exam during the second semester is required. Plan B including three Plan B papers.

Plan A or Plan B

Plan A

EES 8200 - Professional Issues in Earth and Environmental Science (1.0 cr)

EES 8777 - Thesis Credit: Master's (1.0 - 10.0 cr)

Required GEOL coursework

No more than 9 credits of 4xxx level courses may be accepted.

Take 14 or more credit(s) from the following:

- **EES 4355** - Economic Geology (4.0 cr)
- **EES 4360** - Geologic, Geophysical, and Geochemical Methods of Exploration (4.0 cr)
- **EES 4400** - Astrogeology (3.0 cr)
- **EES 4450** - Structural Geology (4.0 cr)
- **EES 4500** - Field Geology (6.0 cr)
- **EES 4710** - Geochemistry (4.0 cr)
- **EES 4839** - Coral Reef Geology [GLOBAL PER] (3.0 cr)
- **EES 5091** - Independent Study in Earth & Environmental Science (1.0 - 2.0 cr)
- **EES 5095** - Earth & Environmental Special Topics (Various Titles to be Assigned) (1.0 - 3.0 cr)
- **EES 5100** - Seminar (1.0 - 2.0 cr)
- **EES 5103** - Geological Paleolimnology (3.0 cr)
- **EES 5210** - Glacial and Quaternary Geology (4.0 cr)
- **EES 5220** - Advances in Paleoclimatology (3.0 cr)
- **GEOL 5240** *{Inactive}* (4.0 cr)
- **EES 5250** - Hydrogeology (4.0 cr)
- **EES 5251** - Well Hydraulics (3.0 cr)
- **EES 5260** - Fluvial Geomorphology (3.0 cr)
- **EES 5310** - Advanced Petrology (3.0 cr)
- **GEOL 5320** *{Inactive}* (3.0 cr)
- **EES 5321** - Theory, Practice of Scanning Electron Microscopy and X-Ray Microanalysis in Lectures (3.0 cr)
- **GEOL 5330** *{Inactive}* (3.0 cr)
- **EES 5355** - Economic Geology (4.0 cr)
- **EES 5360** - Geologic, Geophysical, and Geochemical Methods of Exploration (4.0 cr)
- **GEOL 5450** *{Inactive}* (3.0 cr)
- **EES 5480** - Tectonics (3.0 cr)
- **EES 5601** - Introduction to Stream Restoration (3.0 cr)
- **EES 5730** - Geochronology (3.0 cr)
- **EES 5815** - Exploration Geophysics (4.0 cr)
- **EES 5820** - Global Geophysics (3.0 cr)
- **EES 8094** - Research in Earth & Environmental Science (1.0 - 6.0 cr)
- **GEOL 8100** *{Inactive}* (1.0 - 2.0 cr)
- **EES 8200** - Professional Issues in Earth and Environmental Science (1.0 cr)
- **EES 8602** - Stream Restoration Practice (2.0 cr)



Related Field

In order to reach the minimum 31 credits, course(s) may be from GEOL coursework or another related field.

or Plan B

No more than 9 credits of 4xxx level courses may be accepted.

Required GEOL Coursework

Take 31 or more credit(s) from the following:

- EES 4355 - Economic Geology (4.0 cr)
- EES 4360 - Geologic, Geophysical, and Geochemical Methods of Exploration (4.0 cr)
- EES 4400 - Astrogeology (3.0 cr)
- EES 4450 - Structural Geology (4.0 cr)
- EES 4500 - Field Geology (6.0 cr)
- EES 4710 - Geochemistry (4.0 cr)
- EES 4839 - Coral Reef Geology [GLOBAL PER] (3.0 cr)
- EES 5091 - Independent Study in Earth & Environmental Science (1.0 - 2.0 cr)
- EES 5095 - Earth & Environmental Special Topics (Various Titles to be Assigned) (1.0 - 3.0 cr)
- EES 5100 - Seminar (1.0 - 2.0 cr)
- EES 5103 - Geological Paleolimnology (3.0 cr)
- EES 5210 - Glacial and Quaternary Geology (4.0 cr)
- EES 5220 - Advances in Paleoclimatology (3.0 cr)
- GEOL 5240 *{Inactive}*(4.0 cr)
- EES 5250 - Hydrogeology (4.0 cr)
- EES 5251 - Well Hydraulics (3.0 cr)
- EES 5260 - Fluvial Geomorphology (3.0 cr)
- EES 5310 - Advanced Petrology (3.0 cr)
- GEOL 5320 *{Inactive}*(3.0 cr)
- EES 5321 - Theory, Practice of Scanning Electron Microscopy and X-Ray Microanalysis in Lectures (3.0 cr)
- GEOL 5330 *{Inactive}*(3.0 cr)
- EES 5355 - Economic Geology (4.0 cr)
- EES 5360 - Geologic, Geophysical, and Geochemical Methods of Exploration (4.0 cr)
- GEOL 5450 *{Inactive}*(3.0 cr)
- EES 5480 - Tectonics (3.0 cr)
- EES 5601 - Introduction to Stream Restoration (3.0 cr)
- EES 5730 - Geochronology (3.0 cr)
- EES 5815 - Exploration Geophysics (4.0 cr)
- EES 5820 - Global Geophysics (3.0 cr)
- EES 8094 - Research in Earth & Environmental Science (1.0 - 6.0 cr)
- GEOL 8100 *{Inactive}*(1.0 - 2.0 cr)
- EES 8200 - Professional Issues in Earth and Environmental Science (1.0 cr)
- EES 8602 - Stream Restoration Practice (2.0 cr)



Duluth Campus

Geological Sciences Minor

D Earth & Environmental Sci

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Earth and Environmental Sciences, University of Minnesota Duluth, 229 Heller Hall, 1114 Kirby Drive, Duluth, MN 55812
(218-726-7239; fax: 218-726-7218)

Email: dees@d.umn.edu

Website: <http://www.d.umn.edu/dees/>

- Program Type: Graduate minor related to major
- Requirements for this program are current for Fall 2018
- Length of program in credits (Masters): 6
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The geological sciences graduate program includes areas of economic geology, geophysics, glacial geology and geomorphology, hydrogeology, igneous and metamorphic petrology, isotope and aqueous geochemistry, limnogeology, paleoclimatology, planetary geology, sedimentology and stratigraphy, surface processes, and structure-tectonics. Several of these areas are strengthened by collaboration with the Large Lakes Observatory, the Natural Resources Research Institute, and the Precambrian Research Center.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses towards program requirements is not permitted.

A master's minor requires at least 6 credits. Coursework is chosen in consultation with the student's adviser and the director of graduate studies in geological sciences.

Required Coursework (6 cr)

Take 6 or more credit(s) from the following:

- GEOL 5xxx
- GEOL 8xxx

Duluth Campus

Integrated Biosciences M.S

Swenson College of Science & Engineering

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Integrated Biosciences Graduate Program, University of Minnesota, 251 Swenson Science Building, 1035 Kirby Drive, Duluth, MN 55812 (218-726-6898; fax: 218-726-8152)

Email: ibs@d.umn.edu

Website: <http://www.d.umn.edu/ibs>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 30
- This program requires summer semesters for timely completion.
- Degree: Master of Science

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

Along with the program-specific requirements listed below, please read the General Information section of this website for requirements that apply to all major fields.

The all-University integrated biosciences graduate program offers study toward the master of science (MS) degree under Plan A (coursework and original thesis). The program has three areas of emphasis: cell, molecular, and physiological (CMP) biology emphasis, chemical biology (CB) emphasis, and ecology, organismal, and population (EOP) biology emphasis.

Approved graduate course credits from the University of Minnesota Duluth Integrated Biosciences MS may be counted in common with the University of Minnesota Twin Cities campus Integrated Biosciences doctoral program (<http://policy.umn.edu/education/gradcreditdegree> see 2.b.).

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

A bachelor's degree or equivalent from an accredited college or university in the biological or physical sciences or a related field.

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan A: Plan A requires 20 major credits, up to null credits outside the major, and 10 thesis credits. The final exam is oral.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 2 semesters must be completed before filing a Degree Program Form.

In addition to coursework and thesis credits, students must conduct original research, and write and successfully defend a thesis.

Required Coursework (11 cr)

- IBS 8011 - Integrated Biological Systems I (3.0 cr)
- IBS 8012 - Integrated Evolutionary Processes (2.0 cr)
- IBS 8013 - Integrated Biological Systems II (3.0 cr)
- IBS 8030 - IBS Research Club (1.0 cr)
- IBS 8099 - The Biological Practitioner (1.0 cr)
- STAT 4060 - Introduction to Biostatistics (3.0 cr)
 - or STAT 5411 - Analysis of Variance (3.0 cr)
 - or STAT 5511 - Regression Analysis (3.0 cr)

Thesis (10 cr)

Must be taken for 10 credits.

- IBS 8777 - Thesis Credits: Master's (1.0 - 18.0 cr)

Electives (9 cr)

Elective coursework outside of IBS courses may be taken with prior approval from the Director of Graduate Studies in consultation with the student's advisor.

Take 9 or more credit(s) from the following:

- IBS 8020 *(Inactive)* (1.0 cr)
- IBS 8094 - Rotations (1.0 cr)
- IBS 8101 - Cellular Biochemistry (3.0 cr)
- IBS 8102 - Cell, Molecular and Developmental Biology (3.0 cr)
- IBS 8103 - Comparative Animal Physiology (3.0 cr)
- IBS 8201 - Ecological Processes (2.0 cr)
- IBS 8202 - Chemical Biology (3.0 cr)
- IBS 8203 - Methods in Molecular Biosciences (2.0 cr)

Duluth Campus

Integrated Biosciences Minor

Swenson College of Science & Engineering

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Integrated Biosciences Graduate Program, University of Minnesota, 251 Swenson Science Building, 1035 Kirby Drive, Duluth, MN 55812 (218-726-6898; fax: 218-726-8152)

Email: ibs@d.umn.edu

Website: <http://www.d.umn.edu/ibs>

- Program Type: Graduate minor related to major
- Requirements for this program are current for Fall 2018
- Length of program in credits (Masters): 6
- Length of program in credits (Doctorate): 12
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The all-University integrated biosciences graduate program offers students an opportunity to study in three areas of emphasis: cell, molecular, and physiological (CMP) biology emphasis, chemical biology (CB) emphasis, and ecology, organismal, and population (EOP) biology emphasis.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses towards program requirements is not permitted.

Course Group 0

IBS Masters Minor

Take 6 or more credit(s) from the following:

- IBS 8xxx

or IBS Doctoral Minor

Take 12 or more credit(s) from the following:

- IBS 8xxx

Duluth Campus

Master of Engineering M.Eng.

Swenson College of Science & Engineering

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Director of Graduate Studies, M.Eng. Program, Engineering Building 176, 1303 Ordean Court, Duluth, MN 55812 (218-726-7126; fax: 218-726-6907).

Email: rdavis@d.umn.edu

Website: <http://www.d.umn.edu/scse/degrees/MEng/index.html>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 30
- This program does not require summer semesters for timely completion.
- Degree: Master of Engineering

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The professional master of engineering emphasizes the practice of engineering in either the private or public sector. The program focuses on developing competencies in the areas of engineering design, problem solving, and practice beyond what can be achieved in earning a bachelor of science degree in a given engineering discipline.

An M.Eng. graduate student is expected to have a focus and degree designation in one of the UMD disciplines of Civil Engineering, Chemical Engineering, Electrical Engineering, Industrial Engineering, Mechanical Engineering or Mining and Minerals Processing.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Other requirements to be completed before admission:

1. Completed an undergraduate degree in an engineering program, or upon approval by the SCSE MEng Director of Graduate Studies, in a related discipline, e.g. computer science, geology, physics etc.
2. The MEng prefers an undergraduate grade point average (GPA) of 3.00 (on a 4.0 scale) for admission. This preferred performance minimum of 3.0/4.0 must be from an ABET accredited program or equivalent. Industrial experience and professional licensure will be considered for applicants with a grade point less than the preferred minimum.
3. Two letters of recommendation: academic and/or professional references.
4. For international applicants whose native language is not English, a TOEFL score preferred performance minimum is 79 on the internet based test.
5. The GRE score is recommended but not required.

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550

Key to [test abbreviations](#)(GRE, TOEFL).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan C: Plan C requires 15 to 27 major credits and 3 to 15 credits outside the major. There is no final exam. A capstone project is required.

Capstone Project: All students take 3-6 credits of project courses within their major. As part of these credits, a project report or presentation may be required by the departmental adviser and department.

This program may not be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

The M.Eng. degree program is primarily a coursework degree program with a minimum of 3 credits and a maximum of 6 credits allocated to a design project to be arranged between the departmental adviser and student. The 30 credits require a minimum of 14 credits at 5XXX or higher, and a cap of 6 credits on 4XXX courses. There is no requirement for a final exam above and beyond what is required in individual courses.

Major Plan Department Requirements (12 cr)

In consultation with their Departmental Advisor, students may choose to include one or more 8XXX courses in their Program of Study. It should be noted that even though there are no requirements for 8XXX courses, MEng students who meet the course prerequisites for 8xxx courses in Electrical Engineering, Engineering Management, Geologic Sciences, and Computer Science will be encouraged to include these courses in their degree program. Selected 4xxx courses may apply.

Take 12 or more credit(s) from the following:

- CE 5xxx
- CE 8xxx
- CHE 5xxx
- CHE 8xxx
- EE 5xxx
- EE 8xxx
- IE 5xxx
- IE 8xxx
- ME 5xxx
- ME 8xxx

Engineering Course Project (3 - 6 cr)

Project within the Major Plan Department to be arranged by the Departmental Advisor and student.

Take 3 - 6 credit(s) from the following:

- [CE 5555](#) - Project Credits: Master of Engineering (Civil) (3.0 - 6.0 cr)
- [CHE 5555](#) - Project Credits: MEng - Chemical Engineering (3.0 - 6.0 cr)

Other Engineering (6 - 12 cr)

Courses selected in collaboration with the Departmental Advisor; selected 4xxx level courses may apply with approval.

Take 6 - 12 credit(s) from the following:

- CE 5xxx
- CE 8xxx
- CHE 5xxx
- CHE 8xxx
- EE 5xxx
- EE 8xxx
- IE 5xxx
- IE 8xxx
- ME 5xxx
- ME 8xxx

Non Engineering (0 - 3 cr)

In order to reach the 30 minimum required credits, elective credits can be from a non-engineering approved graduate course list. Courses must be selected in collaboration with the Departmental Advisor.

Duluth Campus

Mathematical Sciences M.S.

Mathematics & Statistics

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 35
- This program does not require summer semesters for timely completion.
- Degree: Master of Science

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

This program is for those wishing to pursue careers that use applied mathematics and statistics in science, industry, business, and teaching, and for those wishing to go on for doctoral degrees in mathematics or statistics. It emphasizes the use of modern modeling techniques and computational methods with areas of concentration available in continuous modeling, probability/statistics, and discrete mathematics. The faculty is drawn largely from the Department of Mathematics and Statistics, but also includes members from other departments.

Along with the program-specific requirements listed below, please read the General Information section of this website for requirements that apply to all major fields. This program is for those wishing to pursue careers that use applied mathematics and statistics in science, industry, business, and teaching, and for those wishing to go on for doctoral degrees in mathematics or statistics. It emphasizes the use of modern modeling techniques and computational methods with areas of concentration available in continuous modeling, probability/statistics, and discrete mathematics. Statistics students will follow the Statistics Sub-plan. Mathematics students will not select a sub-plan. The faculty is drawn largely from the Department of Mathematics and Statistics, but also includes members from other departments.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

An undergraduate degree in mathematics or statistics is preferred. Students with degrees in any major and with a substantial background in mathematics or statistics are also encouraged to apply.

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
- IELTS
 - Total Score: 6.5
 - Reading Score: 6.5
 - Writing Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan A: Plan A requires 15 to 25 major credits, 0 to 10 credits outside the major, and 10 thesis credits. The final exam is oral.

Plan B: Plan B requires 25 to 30 major credits and 0 to 10 credits outside the major. The final exam is oral. A capstone project is required.

Capstone Project: The Plan B project must be presented to the department in a seminar or colloquium, and prepared for publication as a departmental technical report. A PDF file of the final version must be submitted to the department.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 1 semester must be completed before filing a Degree Program Form.

1. All students must complete at least 25 MATH or STAT credits.
2. All students must attend at least 16 Graduate Colloquium presentations.
3. Students not pursuing the Statistics sub plan must complete at least 14 MATH course credits, not including thesis or final project credits.
4. Students not pursuing the Statistics sub plan must complete at least 6 credits of non-MATH courses.
5. Use of 4xxx level courses is permitted only by approval of the director of graduate studies.
6. All Mathematical students must pass the comprehensive examination; the material tested is the courses from the Theoretical Core. There are 8 problems, 2 in each subject; students must solve 4 problems; precisely 1 problem in advanced linear algebra, 3 problems in 2 or 3 of the remaining fields (abstract algebra; real variables; probability), according to the student's choice. This examination can be taken in an oral format at the mutual agreement of both the student and the graduate program.

Theoretical Core (14 - 15 cr)

Students not taking all four Theoretical Core courses must include in their program of study at least one course in the core area: i.e., applied analysis, algebra and discrete math or probability and statistics. The course selection must be approved by advisor and director of graduate studies.

[MATH 5201](#) - Real Variables (4.0 cr)

[MATH 5327](#) - Advanced Linear Algebra (3.0 cr)

[STAT 5571](#) - Probability (4.0 cr)

Students pursuing the Statistics sub plan must take [STAT 5572](#); all other Mathematical Sciences students take [MATH 5371](#).

[MATH 5371](#) - Abstract Algebra I (3.0 cr)

or [STAT 5572](#) - Statistical Inference (4.0 cr)

Core Areas

Take 0 or more course(s) from the following:

Applied Analysis

- [MATH 5202](#) - Applied Functional Analysis (3.0 cr)
or [MATH 5260](#) - Dynamical Systems (3.0 cr)
or [MATH 5270](#) - Modeling with Dynamical Systems (3.0 cr)
or [MATH 5280](#) - Partial Differential Equations (3.0 cr)
or [MATH 5810](#) - Linear Programming (3.0 cr)
or [MATH 8201](#) - Real Analysis (3.0 cr)

Algebra and Discrete Math

- [MATH 5330](#) - Theory of Numbers (3.0 cr)
or [MATH 5347](#) - Applied Algebra and Cryptology (3.0 cr)
or [MATH 5365](#) - Graph Theory (3.0 cr)
or [MATH 5366](#) - Enumerative Combinatorics (3.0 cr)
or [MATH 5372](#) - Abstract Algebra II (3.0 cr)

Probability and Statistics

- [STAT 5411](#) - Analysis of Variance (3.0 cr)
or [STAT 5511](#) - Regression Analysis (3.0 cr)
or [STAT 5515](#) - Multivariate Statistics (3.0 cr)
or [STAT 5521](#) - Applied Time Series Analysis (3.0 cr)
or [STAT 5531](#) - Probability Models (4.0 cr)
or [STAT 5572](#) - Statistical Inference (4.0 cr)



or [STAT 8611](#) - Linear Models (3.0 cr)

Graduate Seminar (1 cr)

[MATH 8980](#) - Graduate Seminar (1.0 cr)

Computation (0 - 4 cr)

Students not pursuing the Statistics sub plan must take at least 1 of the following courses:

Take 1 or more course(s) from the following:

- [MATH 5233](#) - Mathematical Foundations of Bioinformatics (3.0 cr)
- [MATH 5830](#) - Numerical Analysis: Approximation and Quadrature (4.0 cr)
- [MATH 5840](#) - Numerical Analysis: Systems and Optimization (4.0 cr)
- [MATH 5850](#) - Numerical Differential Equations (4.0 cr)
- [STAT 5411](#) - Analysis of Variance (3.0 cr)
- [STAT 5511](#) - Regression Analysis (3.0 cr)
- [STAT 5515](#) - Multivariate Statistics (3.0 cr)
- [STAT 5521](#) - Applied Time Series Analysis (3.0 cr)

Outside Coursework (0 to 6 cr)

All students not pursuing the Statistics sub plan must take at least 6 credits outside the major. Courses are selected in consultation with the director of graduate studies.

Electives

Take elective courses to meet the 35-credit minimum, including the minimum number of MATH or STATS credits required for the degree.

Plan Options

Plan A

Take 10 master's thesis credits after submission of the Graduate Degree Plan.

[MATH 8777](#) - Thesis Credits: Master's (1.0 - 18.0 cr)

-OR-

Plan B

Take 4 project credits from the following, in consultation with the advisor, after submission of the Graduate Degree Plan:

[MATH 8774](#) - Plan B Final Project Research (1.0 - 4.0 cr)

or [STAT 8774](#) - Plan B Final Project Research (1.0 - 4.0 cr)



Duluth Campus

Mechanical Engineering M.S.M.E.

UMD Mechanical/Industrial Engineering

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Email: MSME@d.umn.edu

Website: <https://scse.d.umn.edu/about/departments-and-programs/mechanical-industrial-engineering-department/m>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 30
- This program does not require summer semesters for timely completion.
- Degree: Master of Science in Mechanical Engineering

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The MSME combines professional engineering coursework with research in a field within mechanical engineering. Focus areas include thermo/fluids, materials/manufacturing, dynamics/control, and mechanical design and analysis. There are two options for completing an MSME degree: Plan A (thesis option), and Plan B (project option). Plan A includes writing and defending a thesis which requires in-depth research equivalent to 10 credits out of 30 total credits. Plan B includes a capstone project equivalent to 3 credits out of 30 total credits and targets practicing engineers.

Undergraduate students in the Mechanical Engineering program who are interested in pursuing the Master of Mechanical Engineering at UMD may apply for admission to the Integrated Undergraduate/Graduate (IUG) Program. Students in the IUG Program start their graduate coursework prior to the completion of their undergraduate degree and may apply up to 9 credits of coursework to both their undergraduate B.S.M.E. and graduate M.S.M.E. degrees. Admission to the IU Program is limited to highly qualified upper division undergraduates.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

Completion of BS degree in mechanical engineering or admission to integrated undergrad/grad program at UMD. Other undergraduate degrees may be accepted; additional coursework may be required.

Graduate Record Examination (GRE) scores are not required for admission, but these scores will be taken into account if they are provided.

Other requirements to be completed before admission:

Applicants must provide two letters of recommendation concerning their academic ability and readiness for graduate education.

Special Application Requirements:

The earned bachelors degree required may be waived only for current students in the B.S.M.E. program and who are applying through the Integrated Undergraduate/Graduate (IUG) option.

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan A: Plan A requires 20 major credits, up to null credits outside the major, and 10 thesis credits. The final exam is written and oral.

Plan B: Plan B requires 30 major credits and up to null credits outside the major. The final exam is written and oral. A capstone project is required.

Capstone Project: Capstone project is 3 credits.

This program may not be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

In consultation with the advisor and director of graduate studies, a maximum of 6 4xxx-level credits, a maximum of 12 transfer credits, and a maximum of 6 credits from fields outside mechanical engineering will be considered.

Course Requirements

Plan A

Core Courses

- ME 5110 - Analytic Techniques in Mechanical Engineering (3.0 cr)
- ME 5120 - Advanced Dynamics and Control (3.0 cr)
- ME 5210 - Advanced Thermal Fluid Sciences (3.0 cr)
- ME 5220 - Advanced Mechanics of Materials (3.0 cr)

Electives

Take 6 or more credit(s) from the following:

- ME 4112 - Heat and Mass Transfer (3.0 cr)
- ME 4135 - Robotics and Controls (3.0 cr)
- ME 4145 - CAD/CAM (4.0 cr)
- ME 4175 - Machine Design (3.0 cr)
- ME 4365 - Global Sustainability Experience in Design/Manufacturing in Africa (3.0 cr)
- ME 4375 - Pipeline Engineering (3.0 cr)
- ME 5305 - Computational Fluid Dynamics (3.0 cr)
- ME 5315 - Nondestructive Evaluation of Engineering Materials (3.0 cr)
- ME 5325 - Sustainable Energy System (3.0 cr)
- ME 5345 - Smart Materials and Structures (3.0 cr)
- ME 5355 - Gas Turbines (3.0 cr)

Graduate Seminar

Take 2 or more credit(s) from the following:

- ME 8993 - Graduate Seminar (1.0 cr)

Thesis Credits

Take 10 or more credit(s) from the following:

- ME 8777 - Thesis Credits: Master's (1.0 - 10.0 cr)

or **Plan B**

Core Courses

- ME 5110 - Analytic Techniques in Mechanical Engineering (3.0 cr)
- ME 5120 - Advanced Dynamics and Control (3.0 cr)
- ME 5210 - Advanced Thermal Fluid Sciences (3.0 cr)
- ME 5220 - Advanced Mechanics of Materials (3.0 cr)

Electives

Take 15 or more credit(s) from the following:

Take at most 6 credit(s) from the following:

- ME 4112 - Heat and Mass Transfer (3.0 cr)
- ME 4135 - Robotics and Controls (3.0 cr)
- ME 4145 - CAD/CAM (4.0 cr)
- ME 4175 - Machine Design (3.0 cr)
- ME 4365 - Global Sustainability Experience in Design/Manufacturing in Africa (3.0 cr)
- ME 4375 - Pipeline Engineering (3.0 cr)
- Take 9 or more credit(s) from the following:
 - ME 5305 - Computational Fluid Dynamics (3.0 cr)



- ME 5315 - Nondestructive Evaluation of Engineering Materials (3.0 cr)
- ME 5325 - Sustainable Energy System (3.0 cr)
- ME 5335 - Introduction to Finite Element Analysis (3.0 cr)
- ME 5345 - Smart Materials and Structures (3.0 cr)
- ME 5355 - Gas Turbines (3.0 cr)

Capstone Project

- ME 8310 - Mechanical Engineering Capstone Project (3.0 cr)

Duluth Campus

Physics M.S.

UMD-Physics & Astronomy

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Physics, University of Minnesota Duluth, 371 Marshall W. Alworth Hall, 1023 University Drive, Duluth, MN 55812 (218-726-7124; fax: 218-726-6942)

Email: phys@d.umn.edu

Website: <http://www.d.umn.edu/physics/grad/>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 30
- This program requires summer semesters for timely completion.
- Degree: Master of Science

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master of science program provides a grounding in the fundamentals of physics, combined with significant research involvement. The primary areas of research are computational physics, high-energy neutrino physics, experimental work in condensed-matter physics, and observational and theoretical work in physical limnology.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

An undergraduate degree in physics or the equivalent is required.

Other requirements to be completed before admission:

Three letters of recommendation are required for assistantship support.

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan A: Plan A requires 14 major credits, 6 credits outside the major, and 10 thesis credits. The final exam is oral.

Plan B: Plan B requires 24 major credits and 6 credits outside the major. The final exam is oral.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 1 semesters must be completed before filing a Degree Program Form.

Core Requirements (11 cr)

PHYS 5090 must be taken twice for a total of 2 credits.

[PHYS 5090](#) - Physics Seminar (1.0 cr)

[PHYS 5501](#) - Advanced Classical Mechanics (3.0 cr)

[PHYS 5511](#) - Electrodynamics (3.0 cr)

[PHYS 5521](#) - Quantum Mechanics I (3.0 cr)

Methods Course (3 cr)

[PHYS 5052](#) - Computational Methods in Physics (3.0 cr)

or [PHYS 5053](#) - Data Analysis Methods in Physics (3.0 cr)

or [PHYS 5061](#) - Experimental Methods (3.0 cr)

Related Field (6 cr)

At least 6 credits in courses eligible for graduate credit in related fields, or a minor in a related field.

Plan A or Plan B

Plan A

Minimum 10 credits.

[PHYS 8777](#) - Thesis Credits: Master's (1.0 - 18.0 cr)

or **Plan B**

Courses may include 4000-level courses if appropriate and approved for graduate credit and may be drawn from related fields outside of physics. The overall plan of study and selection of specific elective courses must form a cohesive program and be approved by the DGS and the adviser.

Requires a minimum of 120 hours of total effort, and preparation of a written report for each project.

Duluth Campus

Physics Minor

UMD-Physics & Astronomy

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Physics, University of Minnesota Duluth, 371 Marshall W Alworth Hall, 1023 University Drive, Duluth, MN 55812 (218-726-7124; fax: 218-726-6942)

Email: phys@d.umn.edu

Website: <http://www.d.umn.edu/physics/grad/>

- Program Type: Graduate minor related to major
- Requirements for this program are current for Fall 2018
- Length of program in credits (Masters): 6
- Length of program in credits (Doctorate): 6
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The master of science program provides a grounding in the fundamentals of physics, combined with significant research involvement. The primary areas of research are computational physics, high-energy neutrino physics, experimental work in condensed-matter physics, and observational and theoretical work in physical limnology.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

Required Courses (6 cr)

No more than 1 credit can be from PHYS 5090.

Take 6 or more credit(s) from the following:

- PHYS 5xxx
- PHYS 8xxx

Duluth Campus

Integrated Biosciences Ph.D.

Swenson College of Science & Engineering

University of Minnesota Duluth

Link to a [list of faculty](#) for this program.

Contact Information:

Integrated Biosciences Graduate Program, University of Minnesota, 251 Swenson Science Building, 1035 Kirby Drive, Duluth, MN 55812 (218-726-6898; fax: 218-726-8152)

Email: ibs@d.umn.edu

Website: <http://www.d.umn.edu/ibs>

- Program Type: Doctorate
- Requirements for this program are current for Fall 2018
- Length of program in credits: 50
- This program requires summer semesters for timely completion.
- The Integrated Biosciences Ph.D. is an All-University program delivered on the Twin Cities and Duluth Campuses. The University of Minnesota Twin Cities is the degree granting authority for the Integrated Biosciences Ph.D. program in Duluth.
- Degree: Doctor of Philosophy

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The all-university integrated biosciences graduate program offers study toward the doctor of philosophy (Ph.D.) degree. The program has three areas of emphasis: cell, molecular, and physiological (CMP) biology emphasis, chemical biology (CB) emphasis, and ecology, organismal, and population (EOP) biology emphasis.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

A bachelor's degree or equivalent from an accredited college or university in the biological or physical sciences or a related field.

Other requirements to be completed before admission:

Recommended undergraduate courses for applicants pursuing the Ph.D. degree include one year each of chemistry, biology, physics, calculus, and advanced chemistry. One semester (minimum) of statistics is also recommended.

Additional recommended courses for students in the ecology, organismal, and population (EOP) emphasis include one year of calculus, one semester each of ecology and evolutionary biology, along with one course in two of the following subjects: genetics, cell biology, biochemistry.

Additional recommended courses for students in the cell, molecular, and physiological (CMP) emphasis include one year of organic chemistry plus one course in each of the following: genetics, cell biology and biochemistry.

Additional recommended courses for students in the chemical biology (CB) emphasis include one year of organic chemistry, plus one course in biochemistry and cell biology.

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5

- MELAB
- Final score: 80

The preferred English language test is Test of English as Foreign Language

Key to [test abbreviations](#)(GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

26 credits are required in the major.

24 thesis credits are required.

This program may not be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 2 semesters must be completed before filing a Degree Program Form.

Ph.D. Written Preliminary Examination-In addition to completing the curriculum for the major and internal related fields, students will be required to pass both a written and oral preliminary examination prior to completing the Ph.D. program. The preliminary written examination will be administered once the student has completed the majority of the required coursework. This will typically occur in the summer of the second year. The written examination will consist of a completed NIH or NSF grant application for the student's proposed research project. The project will be evaluated by the Thesis Examining Committee, which will also serve as the student's Final Oral Examining Committee to provide continuity of advice during the length of the student's research program.

Ph.D. Oral Preliminary Examination-The oral preliminary examination will be administered within two months of the successful completion of the preliminary written examination. The examination will be administered by the graduate faculty according to University regulations and all students will be required to pass the oral examination to continue in the Ph.D. program.

Ph.D. Final Oral Defense-It is anticipated that most students will complete the requirements for the Ph.D. degree within five years. The final oral defense will be conducted by the graduate faculty according to University regulations. It will consist of a public seminar presented by the student.

Required Coursework (13 cr)

- IBS 8011 - Integrated Biological Systems I (3.0 cr)
- IBS 8012 - Integrated Evolutionary Processes (2.0 cr)
- IBS 8013 - Integrated Biological Systems II (3.0 cr)
- IBS 8030 - IBS Research Club (1.0 cr)
- IBS 8099 - The Biological Practitioner (1.0 cr)
- STAT 4060 - Introduction to Biostatistics (3.0 cr)
 - or STAT 5411 - Analysis of Variance (3.0 cr)
 - or STAT 5511 - Regression Analysis (3.0 cr)
- IBS 8980 *(Inactive)*(2.0 cr)
 - or IBS 8993 - Integrated Biosciences Graduate Seminar (2.0 cr)

Thesis (24 cr)

Must be taken for 24 credits

- IBS 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

Electives (13 cr)

Take 13 or more credit(s) from the following:

- IBS 8020 *(Inactive)*(1.0 cr)
- IBS 8094 - Rotations (1.0 cr)
- IBS 8101 - Cellular Biochemistry (3.0 cr)
- IBS 8102 - Cell, Molecular and Developmental Biology (3.0 cr)
- IBS 8103 - Comparative Animal Physiology (3.0 cr)
- IBS 8201 - Ecological Processes (2.0 cr)
- IBS 8202 - Chemical Biology (3.0 cr)
- IBS 8203 - Methods in Molecular Biosciences (2.0 cr)

Duluth Campus

Water Resources Science M.S.

Swenson College of Science & Engineering

University of Minnesota Duluth

Link to a [list of faculty](#) for this program.

Contact Information:

Water Resources Science, University of Minnesota, 173 McNeal Hall, 1985 Buford Avenue, St. Paul MN 55108 (612-624-7456; fax: 612-625-1263)

Email: wrs@umn.edu

Website: <http://wrs.umn.edu/degrees-courses/degree-requirements>

- Program Type: Master's
- Requirements for this program are current for Fall 2018
- Length of program in credits: 30 to 32
- This program does not require summer semesters for timely completion.
- University of Minnesota, Twin Cities
- Degree: Master of Science

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

This cross campus interdisciplinary program provides comprehensive training in water resources science, with integration across scientific disciplines. A structured interdisciplinary graduate curriculum is offered. The program includes a set of core courses plus electives in the following areas of interest: aquatic biology, environmental chemistry, hydrologic science, limnology, water management technology, water policy, water quality, and watershed science and management.

A limnology and oceanography track is also offered. Approximately 50 courses offered within 15 other graduate programs are available to students majoring in water resources science. The goal of the program is to produce scientists with strong technical skills in disciplines relevant to water resources and a broad understanding of 1) the hydrologic cycle and associated ecosystems, 2) the interconnectedness of the sciences involved in managing aquatic resources, and 3) the interplay between the biophysical sciences and social sciences in developing and implementing public policies related to water.

Students in the program develop the breadth of scientific knowledge appropriate to understand the complicated aquatic ecosystems and watersheds on which they will work, as well as social dimensions of the topic, including the public policy and legal frameworks in which water resources are protected and managed.

The program involves faculty from the following departments on the Twin Cities campus: Applied Economics; Bioproducts and Biosystems Engineering; Chemistry; Civil Engineering; Earth Sciences; Ecology, Evolution, and Behavior; Entomology; Environmental and Occupational Health; Fisheries, Wildlife, and Conservation Biology; Forest Resources; Horticultural Science; Landscape Architecture; Soil, Water, and Climate; and the Humphrey Institute of Public Affairs. It also involves faculty from the following departments on the Duluth campus: Biology; Chemical Engineering; Chemistry; Civil Engineering; Geological Sciences; Physics; as well as the Large Lakes Observatory and the Natural Resources Research Institute in Duluth.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

The program is flexible enough to accommodate students from a variety of backgrounds. Normally students have a bachelor's degree in physical or biological science or engineering.

Other requirements to be completed before admission:

Recommended academic preparation includes one year (or two semesters) each of calculus, physics, and chemistry, and one biology course.

Availability of funding and willingness of a member of the graduate faculty to serve as an advisor are important criteria for admission to the program.

Special Application Requirements:

Applicants must submit three letters of recommendation via the Graduate School Apply Yourself website. These letters should be from professors qualified to estimate applicant's class rank and evaluate their ability to complete a program of graduate study, or from persons who can assess their professional or research potential.

Applicants must also submit a résumé of their academic history and professional experience and a statement of purpose, including the proposed area of emphasis. Applicants should submit results of the GRE General Test. Students may be admitted any semester but are strongly encouraged to submit their application by December 15 for fall semester admission. More specific application instruction can be found on the program website: wrs.umn.edu/prospectivestudents/apply/index.htm.

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

The preferred English language test is Test of English as Foreign Language

Key to [test abbreviations](#)(GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Plan A: Plan A requires 22 major credits, 0 credits outside the major, and 10 thesis credits. The final exam is oral.

Plan B: Plan B requires 30 major credits and 0 credits outside the major. The final exam is oral. A capstone project is required.

Capstone Project: The Plan B project is defined by the faculty advisor. The Plan B option is well suited to students who have little undergraduate course work in water resources science and thus need more coursework to gain the combination of depth and breadth needed in this field. Plan B projects involve field, laboratory, or computer work and the analysis, synthesis, or interpretation of data.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 1 semesters must be completed before filing a Degree Program Form.

Credits from a minor may count toward the total credits of your master's degree with advisor approval.

All course credits must be at the post-baccalaureate level, taken for graduate credits, and assessed at the graduate tuition rate. Masters students may request to transfer 40% of their coursework from another accredited graduate program.

Students with WRS-equivalent core courses taken as undergraduates may substitute other classes to meet program requirements, with advisor approval.

Core Courses (13 cr)**Hydrology**

Take 1 or more course(s) from the following:

- [CE 4228](#) - Watershed Engineering (3.0 cr)
- [GEOG 4446](#) - Water Processes and Management (3.0 cr)
- [EES 4201](#) - Watershed Hydrology (3.0 cr)
- [EES 5250](#) - Hydrogeology (4.0 cr)
- [LIM 5101](#) - Physical Limnology (3.0 cr)

Environmental/Water Chemistry

Take 1 or more course(s) from the following:

- CE 5241 - Water Chemistry (3.0 cr)
- CHEM 5150 - Organic and Stable Isotope Biogeochemistry (3.0 cr)
- LIM 5102 - Chemical Limnology (3.0 cr)

Limnology

Take 1 or more course(s) from the following:

- BIOL 5833 - Stream Ecology (3.0 cr)
- BIOL 5861 - Lake Ecology (3.0 cr)
- EES 5103 - Geological Paleolimnology (3.0 cr)
- LIM 5101 - Physical Limnology (3.0 cr)
- LIM 5102 - Chemical Limnology (3.0 cr)
- LIM 5103 - Geological Paleolimnology (3.0 cr)

Water Resources Policy

WRS 5101 - Water Policy (3.0 cr)

Water Seminar Series

Take for .5 credits

WRS 8100 - Interdisciplinary Seminar in Water Resources (0.5 - 3.0 cr)

Ethics and Responsible Conduct in Research

WRS 8581 - Research and Professional Ethics in Water Resources and Environmental Science (0.5 cr)

WRS Electives

Plan A students need at least 9 credits from the following list and may not use WRS 8095 as an elective. Plan B students need at least 17 credits from the following list:

- BIOL 4761 - Ichthyology (3.0 cr)
- or BIOL 5777 *{Inactive}*(2.0 cr)
- or BIOL 5801 - Microbial Ecology (2.0 cr)
- or BIOL 5805 - Fisheries Ecology and Management (3.0 cr)
- or BIOL 5808 - Landscape Ecology: Theory and Application (3.0 cr)
- or BIOL 5833 - Stream Ecology (3.0 cr)
- or BIOL 5861 - Lake Ecology (3.0 cr)
- or BIOL 5863 - Ecosystems Ecology (3.0 cr)
- or BIOL 5870 - Wetland Ecology (3.0 cr)
- or CE 4213 - Open Channel Hydraulics (3.0 cr)
- or CE 4215 - Hydraulic Design (3.0 cr)
- or CE 4228 - Watershed Engineering (3.0 cr)
- or CE 5216 - Applications in Environmental Modeling (3.0 cr)
- or CE 5237 - Water Quality Engineering (3.0 cr)
- or CE 5241 - Water Chemistry (3.0 cr)
- or CE 5246 - Environmental Remediation Technologies (3.0 cr)
- or CHEM 5150 - Organic and Stable Isotope Biogeochemistry (3.0 cr)
- or GEOG 4446 - Water Processes and Management (3.0 cr)
- or EES 4201 - Watershed Hydrology (3.0 cr)
- or EES 5103 - Geological Paleolimnology (3.0 cr)
- or EES 5210 - Glacial and Quaternary Geology (4.0 cr)
- or EES 5220 - Advances in Paleoclimatology (3.0 cr)
- or EES 5250 - Hydrogeology (4.0 cr)
- or EES 5260 - Fluvial Geomorphology (3.0 cr)
- or EES 5601 - Introduction to Stream Restoration (3.0 cr)
- or EES 8602 - Stream Restoration Practice (2.0 cr)
- or LIM 5010 - Integrated Approaches to the Study of Inland Waters (3.0 cr)
- or LIM 5011 - Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters (2.0 cr)
- or LIM 5012 - Integrated Approaches to the Study of Inland Waters II (3.0 cr)
- or LIM 5013 - Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters II (2.0 cr)
- or LIM 5101 - Physical Limnology (3.0 cr)
- or LIM 5102 - Chemical Limnology (3.0 cr)
- or LIM 5103 - Geological Paleolimnology (3.0 cr)
- or LIM 5104 *{Inactive}*(2.0 cr)
- or LIM 5105 - Research Frontiers and New Directions in Limnology and Environmental Science (1.0 cr)
- or PHYS 5541 - Fluid Dynamics (3.0 cr)
- or WRS 5050 *{Inactive}*(1.0 - 3.0 cr)
- or WRS 8095 - Plan B Project (3.0 cr)

Plan A

Register for 10 credits

WRS 8777 - Thesis Credits: Master's (1.0 - 18.0 cr)

Program Sub-plans

A sub-plan is not required for this program.

Students may not complete the program with more than one sub-plan.

Limnology and Oceanography

The science of inland waters, or "limnology," includes the study of streams, lakes, ponds, and wetlands. While Lake Superior falls into this category, the style of research, particularly the nature of sampling and the scale of the processes investigated, makes study of Lake Superior and other Great Lakes more akin to oceanography than to classical limnology. A program that focuses on the study of both limnology and oceanography strengthens understanding of both systems, through comparative studies and by fostering interaction between groups that focus more strongly on one or the other system. Limnology and oceanography are by necessity interdisciplinary fields, with major components contributed by biological, geological, physical, and chemical sciences. Such interdisciplinary fields in the modern research university require mechanisms to insure cross-fertilization of ideas, approaches, methods, techniques, and knowledge. The limnology and oceanography track in WRS provides just such a much-needed mechanism.

The goal of the program is to produce scientists with strong technical skills in aquatic science and a broad understanding of limnology and oceanography.

Students with WRS equivalent coursework taken as undergraduate students may substitute other classes to meet minimum credit requirements.

The faculty advisor must be a member of the limnology and oceanography track faculty.

Core Courses (14 cr)

Limnology

LIM 5010 - Integrated Approaches to the Study of Inland Waters (3.0 cr)

LIM 5011 - Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters (2.0 cr)

LIM 5012 - Integrated Approaches to the Study of Inland Waters II (3.0 cr)

LIM 5013 - Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters II (2.0 cr)

Water Policy

CE 5201 - Water Policy (3.0 cr)

Ethics

WRS 8581 - Research and Professional Ethics in Water Resources and Environmental Science (0.5 cr)

Seminar

WRS 8100 - Interdisciplinary Seminar in Water Resources (0.5 - 3.0 cr)

WRS Electives

Plan A students need at least 8 credits from the following list and may not use WRS 8095 as an elective. Plan B students need at least 16 credits from the following list:

BIOL 4761 - Ichthyology (3.0 cr)

or BIOL 5777 *(Inactive)* (2.0 cr)

or BIOL 5801 - Microbial Ecology (2.0 cr)

or BIOL 5805 - Fisheries Ecology and Management (3.0 cr)

or BIOL 5808 - Landscape Ecology: Theory and Application (3.0 cr)

or BIOL 5833 - Stream Ecology (3.0 cr)

or BIOL 5861 - Lake Ecology (3.0 cr)

or BIOL 5863 - Ecosystems Ecology (3.0 cr)

or BIOL 5870 - Wetland Ecology (3.0 cr)

or CE 4213 - Open Channel Hydraulics (3.0 cr)

or CE 4215 - Hydraulic Design (3.0 cr)

or CE 4228 - Watershed Engineering (3.0 cr)

or CE 5216 - Applications in Environmental Modeling (3.0 cr)

or CE 5237 - Water Quality Engineering (3.0 cr)

or CE 5241 - Water Chemistry (3.0 cr)

or CE 5246 - Environmental Remediation Technologies (3.0 cr)

or CHEM 5150 - Organic and Stable Isotope Biogeochemistry (3.0 cr)

or GEOG 4446 - Water Processes and Management (3.0 cr)

or EES 4201 - Watershed Hydrology (3.0 cr)

or EES 5103 - Geological Paleolimnology (3.0 cr)

or EES 5210 - Glacial and Quaternary Geology (4.0 cr)

or EES 5220 - Advances in Paleoclimatology (3.0 cr)

or EES 5250 - Hydrogeology (4.0 cr)

or EES 5260 - Fluvial Geomorphology (3.0 cr)

or EES 5601 - Introduction to Stream Restoration (3.0 cr)

or EES 8602 - Stream Restoration Practice (2.0 cr)

or LIM 5010 - Integrated Approaches to the Study of Inland Waters (3.0 cr)



- or [LIM 5011](#) - Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters (2.0 cr)
- or [LIM 5012](#) - Integrated Approaches to the Study of Inland Waters II (3.0 cr)
- or [LIM 5013](#) - Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters II (2.0 cr)
- or [LIM 5101](#) - Physical Limnology (3.0 cr)
- or [LIM 5102](#) - Chemical Limnology (3.0 cr)
- or [LIM 5103](#) - Geological Paleolimnology (3.0 cr)
- or [LIM 5104](#) ~~{Inactive}~~(2.0 cr)
- or [LIM 5105](#) - Research Frontiers and New Directions in Limnology and Environmental Science (1.0 cr)
- or [PHYS 5541](#) - Fluid Dynamics (3.0 cr)
- or [WRS 5050](#) ~~{Inactive}~~(1.0 - 3.0 cr)
- or [WRS 8095](#) - Plan B Project (3.0 cr)

Plan A

Register for 10 credits

- [WRS 8777](#) - Thesis Credits: Master's (1.0 - 18.0 cr)

Duluth Campus

Water Resources Science Minor

Swenson College of Science & Engineering

University of Minnesota Duluth

Link to a [list of faculty](#) for this program.

Contact Information:

Water Resources Science, 173 McNeal Hall, 1985 Buford Avenue, St. Paul MN 55108 (612-624-7456; fax: 612-625-1263)

Email: wrs@umn.edu

Website: <http://wrs.umn.edu/degrees-courses/degree-requirements>

- Program Type: Graduate minor related to major
- Requirements for this program are current for Fall 2018
- Length of program in credits (Masters): 9
- Length of program in credits (Doctorate): 12
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

This cross-campus interdisciplinary program provides comprehensive training in water resources science, with integration across scientific disciplines. A structured interdisciplinary graduate curriculum is offered. The program includes a set of core courses plus electives in the following areas of emphasis at the M.S. and Ph.D. levels: aquatic biology, environmental chemistry, hydrologic science, limnology, water management technology, water policy, water quality, and watershed science and management. Approximately 80 courses offered within 15 other graduate programs are available to students majoring in water resources science.

The goal of the program is to produce scientists with strong technical skills in disciplines relevant to water resources and a broad understanding of 1) the hydrologic cycle and associated ecosystems, 2) the interconnectedness of the sciences involved in managing aquatic resources, and 3) the interplay between the biophysical sciences and social sciences in developing and implementing public policies related to water.

Students in the program develop the breadth of scientific knowledge appropriate to understand the complicated aquatic ecosystems and watersheds on which they will work, as well as social dimensions of the topic, including the public policy and legal frameworks in which water resources are protected and managed.

The program involves faculty from the following departments on the Twin Cities campus: Applied Economics; Bioproducts and Biosystems Engineering; Civil Engineering; Earth Sciences; Ecology, Evolution, and Behavior; Entomology; Environmental and Occupational Health; Fisheries, Wildlife, and Conservation Biology; Forest Resources; Geography; Horticultural Science; Microbiology, Plant Biology; Soil, Water, and Climate; and the Humphrey Institute of Public Affairs. It also involves faculty from the following departments on the Duluth campus: Biology; Chemical Engineering; Chemistry; Civil Engineering; Geography; Geological Sciences; Physics; and Political Science; as well as the Large Lakes Observatory and the Natural Resources Research Institute in Duluth.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses towards program requirements is not permitted.

Required Course (3 cr)

[WRS 5101](#) - Water Policy (3.0 cr)

Minor for Masters or Ph.D.



Minor for Masters

Take 6 or more credit(s) from the following:

- BIOL 5833 - Stream Ecology (3.0 cr)
- BIOL 5861 - Lake Ecology (3.0 cr)
- GEOL 5240 ~~{Inactive}~~(4.0 cr)
- EES 5250 - Hydrogeology (4.0 cr)
- LIM 5101 - Physical Limnology (3.0 cr)
- LIM 5102 - Chemical Limnology (3.0 cr)
- LIM 5103 - Geological Paleolimnology (3.0 cr)

or **Minor for Ph.D.**

Take 1 or more course(s) from the following:

- BIOL 5833 - Stream Ecology (3.0 cr)
- BIOL 5861 - Lake Ecology (3.0 cr)
- EES 5250 - Hydrogeology (4.0 cr)
- LIM 5101 - Physical Limnology (3.0 cr)
- LIM 5102 - Chemical Limnology (3.0 cr)
- LIM 5103 - Geological Paleolimnology (3.0 cr)

Take 2 or more course(s) from the following:

- BIOL 5777 ~~{Inactive}~~(2.0 cr)
- BIOL 5801 - Microbial Ecology (2.0 cr)
- BIOL 5802 ~~{Inactive}~~(2.0 cr)
- BIOL 5805 - Fisheries Ecology and Management (3.0 cr)
- BIOL 5833 - Stream Ecology (3.0 cr)
- BIOL 4839 - Coral Reef Field Studies [GLOBAL PER] (3.0 cr)
- BIOL 5861 - Lake Ecology (3.0 cr)
- BIOL 5862 ~~{Inactive}~~(3.0 cr)
- BIOL 5863 - Ecosystems Ecology (3.0 cr)
- BIOL 5868 ~~{Inactive}~~(3.0 cr)
- BIOL 5869 ~~{Inactive}~~(3.0 cr)
- BIOL 5870 - Wetland Ecology (3.0 cr)
- EES 5210 - Glacial and Quaternary Geology (4.0 cr)
- GEOL 5215 ~~{Inactive}~~(3.0 cr)
- EES 5220 - Advances in Paleoclimatology (3.0 cr)
- GEOL 5240 ~~{Inactive}~~(4.0 cr)
- EES 5250 - Hydrogeology (4.0 cr)
- EES 5260 - Fluvial Geomorphology (3.0 cr)
- LIM 5004 ~~{Inactive}~~(2.0 cr)
- LIM 5101 - Physical Limnology (3.0 cr)
- LIM 5102 - Chemical Limnology (3.0 cr)
- LIM 5103 - Geological Paleolimnology (3.0 cr)
- WRS 5050 ~~{Inactive}~~(1.0 - 3.0 cr)

Duluth Campus

Water Resources Science Ph.D.

Swenson College of Science & Engineering

University of Minnesota Duluth

Link to a [list of faculty](#) for this program.

Contact Information:

Water Resources Science, 173 McNeal Hall, 1985 Buford Avenue, St. Paul MN 55108 (612-624-7456; fax: 612-625-1263)

Email: wrs@umn.edu

Website: <http://wrs.umn.edu/degrees-courses/degree-requirements>

- Program Type: Doctorate
- Requirements for this program are current for Fall 2018
- Length of program in credits: 48
- This program does not require summer semesters for timely completion.
- The Water Resource Science Ph.D. is an All-University program delivered on the Twin Cities and Duluth Campuses. The University of Minnesota Twin Cities is the degree granting authority for the Water Resources Science Ph.D. program in Duluth.
- Degree: Doctor of Philosophy

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

This cross-campus interdisciplinary program provides comprehensive training in water resources science, with integration across scientific disciplines. A structured interdisciplinary graduate curriculum is offered. The program includes a set of core courses plus electives in the following areas of emphasis at the PhD level: aquatic biology, environmental chemistry, hydrologic science, limnology, water management technology, water policy, water quality, and watershed science and management. Approximately 50 courses offered within 15 other graduate programs are available to students majoring in water resources science.

The goal of the program is to produce scientists with strong technical skills in disciplines relevant to water resources and a broad understanding of 1) the hydrologic cycle and associated ecosystems, 2) the interconnectedness of the sciences involved in managing aquatic resources, and 3) the interplay between the biophysical sciences and social sciences in developing and implementing public policies related to water. Students in the program develop the breadth of scientific knowledge appropriate to understand the complicated aquatic ecosystems and watersheds on which they will work, as well as social dimensions of the topic, including the public policy and legal frameworks in which water resources are protected and managed.

The program involves faculty from the following departments on the Twin Cities campus: Applied Economics; Bioproducts and Biosystems Engineering; Chemistry; Civil Engineering; Earth Sciences; Ecology, Evolution, and Behavior; Entomology; Environmental and Occupational Health; Fisheries, Wildlife, and Conservation Biology; Forest Resources; Horticultural Science; Landscape Architecture; Soil, Water, and Climate; and the Humphrey Institute of Public Affairs. It also involves faculty from the following departments on the Duluth campus: Biology; Chemical Engineering; Chemistry; Civil Engineering; Geological Sciences; Physics; as well as the Large Lakes Observatory and the Natural Resources Research Institute in Duluth.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

The program is flexible enough to accommodate students from a variety of backgrounds. Normally students have a bachelor's or master's degree in physical or biological science or engineering.

Other requirements to be completed before admission:

Recommended academic preparation includes one year (or two semesters) each of calculus, physics, and chemistry, and one biology course at the undergraduate level.

Availability of funding and willingness of a member of the graduate faculty to serve as an adviser are important criteria for admission to the PhD program.

Special Application Requirements:

Applicants must submit three letters of recommendation via the Graduate School ApplyYourself website. These letters should be from

professors qualified to estimate applicant's class rank and evaluate their ability to complete a program of graduate study, or from persons who can assess their professional or research potential.

Applicants must also submit a résumé of their academic history and professional experience and a statement of purpose, including the proposed area of emphasis. Applicants should submit results of the GRE. Students may be admitted any semester but are strongly encouraged to submit their application by December 15 for fall semester admission. More specific application instruction can be found on the program website: wrs.umn.edu/prospectivestudents/apply/index.htm.

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
 - Paper Based - Total Score: 550
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#)(GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

24 credits are required in the major.

0 credits are required outside the major.

24 thesis credits are required.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 2 semesters must be completed before filing a Degree Program Form.

Coursework is tailored to student interests, and many areas of emphasis are possible. Core courses are offered on both the Twin Cities and Duluth campuses.

No more than 9 credits at the 4xxx level may apply.

Core Courses (13 cr)

Hydrology

Take 1 or more course(s) from the following:

- [CE 4228](#) - Watershed Engineering (3.0 cr)
- [GEOG 4446](#) - Water Processes and Management (3.0 cr)
- [EES 4201](#) - Watershed Hydrology (3.0 cr)
- [EES 5250](#) - Hydrogeology (4.0 cr)
- [LIM 5101](#) - Physical Limnology (3.0 cr)

Environmental/Water Chemistry

Take 1 or more course(s) from the following:

- [CE 5241](#) - Water Chemistry (3.0 cr)
- [CHEM 5150](#) - Organic and Stable Isotope Biogeochemistry (3.0 cr)
- [LIM 5102](#) - Chemical Limnology (3.0 cr)

Limnology

Take 1 or more course(s) from the following:

- BIOL 5833 - Stream Ecology (3.0 cr)
- BIOL 5861 - Lake Ecology (3.0 cr)
- EES 5103 - Geological Paleolimnology (3.0 cr)
- LIM 5101 - Physical Limnology (3.0 cr)
- LIM 5102 - Chemical Limnology (3.0 cr)
- LIM 5103 - Geological Paleolimnology (3.0 cr)

Water Resources Policy

Take 1 or more course(s) from the following:

- WRS 5101 - Water Policy (3.0 cr)

Ethics

- WRS 8581 - Research and Professional Ethics in Water Resources and Environmental Science (0.5 cr)

Seminar

- WRS 8100 - Interdisciplinary Seminar in Water Resources (0.5 - 3.0 cr)

Electives (11 cr)

Approved electives to fulfill the required 24 course credits.

Take 11 or more credit(s) from the following:

- BIOL 4761 - Ichthyology (3.0 cr)
- BIOL 5777 *{Inactive}*(2.0 cr)
- BIOL 5801 - Microbial Ecology (2.0 cr)
- BIOL 5805 - Fisheries Ecology and Management (3.0 cr)
- BIOL 5808 - Landscape Ecology: Theory and Application (3.0 cr)
- BIOL 5833 - Stream Ecology (3.0 cr)
- BIOL 5861 - Lake Ecology (3.0 cr)
- BIOL 5863 - Ecosystems Ecology (3.0 cr)
- BIOL 5870 - Wetland Ecology (3.0 cr)
- CE 4213 - Open Channel Hydraulics (3.0 cr)
- CE 4215 - Hydraulic Design (3.0 cr)
- CE 4228 - Watershed Engineering (3.0 cr)
- CE 5216 - Applications in Environmental Modeling (3.0 cr)
- CE 5237 - Water Quality Engineering (3.0 cr)
- CE 5241 - Water Chemistry (3.0 cr)
- CE 5246 - Environmental Remediation Technologies (3.0 cr)
- CHEM 5150 - Organic and Stable Isotope Biogeochemistry (3.0 cr)
- GEOG 4446 - Water Processes and Management (3.0 cr)
- EES 4201 - Watershed Hydrology (3.0 cr)
- EES 5103 - Geological Paleolimnology (3.0 cr)
- EES 5210 - Glacial and Quaternary Geology (4.0 cr)
- EES 5220 - Advances in Paleoclimatology (3.0 cr)
- EES 5250 - Hydrogeology (4.0 cr)
- EES 5260 - Fluvial Geomorphology (3.0 cr)
- EES 5601 - Introduction to Stream Restoration (3.0 cr)
- EES 8602 - Stream Restoration Practice (2.0 cr)
- LIM 5010 - Integrated Approaches to the Study of Inland Waters (3.0 cr)
- LIM 5011 - Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters (2.0 cr)
- LIM 5012 - Integrated Approaches to the Study of Inland Waters II (3.0 cr)
- LIM 5013 - Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters II (2.0 cr)
- LIM 5101 - Physical Limnology (3.0 cr)
- LIM 5102 - Chemical Limnology (3.0 cr)
- LIM 5103 - Geological Paleolimnology (3.0 cr)
- LIM 5104 *{Inactive}*(2.0 cr)
- LIM 5105 - Research Frontiers and New Directions in Limnology and Environmental Science (1.0 cr)
- PHYS 5541 - Fluid Dynamics (3.0 cr)
- WRS 5050 *{Inactive}*(1.0 - 3.0 cr)

Thesis (24 cr)

Take 24 credits

- WRS 8888 - Thesis Credits: Doctoral (1.0 - 24.0 cr)

Program Sub-plans

A sub-plan is not required for this program.

Students may not complete the program with more than one sub-plan.

Limnology and Oceanography

The science of inland waters, or "limnology," includes the study of streams, lakes, ponds, and wetlands. While Lake Superior falls into this category, the style of research, particularly the nature of sampling and the scale of the processes investigated, makes study of Lake Superior and other Great Lakes more akin to oceanography than to classical limnology. A program that focuses on the study of both limnology and oceanography strengthens understanding of both systems, through comparative studies and by fostering interaction between groups that focus more strongly on one or the other system. Limnology and oceanography are by necessity interdisciplinary fields, with major components contributed by biological, geological, physical, and chemical sciences.

This track within the cross-campus interdisciplinary WRS program provides comprehensive training in limnology and oceanography. As is the case for the WRS graduate program as a whole, the limnology and oceanography program includes a set of core courses plus electives in the subfield of limnology and oceanography.

The goal of the program is to produce scientists with strong technical skills in aquatic science and a broad understanding of limnology and oceanography. Faculty on both Twin Cities and Duluth campuses participate in the limnology and oceanography track.

PhD students pursuing this track must have at least two members of the limnology and oceanography track faculty on their committee including the adviser.

Core Courses (14 cr)

Limnology

- LIM 5010 - Integrated Approaches to the Study of Inland Waters (3.0 cr)
- LIM 5011 - Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters (2.0 cr)
- LIM 5012 - Integrated Approaches to the Study of Inland Waters II (3.0 cr)
- LIM 5013 - Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters II (2.0 cr)

Water Policy

- CE 5201 - Water Policy (3.0 cr)

Ethics

- WRS 8581 - Research and Professional Ethics in Water Resources and Environmental Science (0.5 cr)

Seminar

- WRS 8100 - Interdisciplinary Seminar in Water Resources (0.5 - 3.0 cr)

Electives (10 cr)

Approved electives to fulfill the required 24 course credits.

Take 10 or more credit(s) from the following:

- BIOL 4761 - Ichthyology (3.0 cr)
- BIOL 5777 (*Inactive*) (2.0 cr)
- BIOL 5801 - Microbial Ecology (2.0 cr)
- BIOL 5805 - Fisheries Ecology and Management (3.0 cr)
- BIOL 5808 - Landscape Ecology: Theory and Application (3.0 cr)
- BIOL 5833 - Stream Ecology (3.0 cr)
- BIOL 5861 - Lake Ecology (3.0 cr)
- BIOL 5863 - Ecosystems Ecology (3.0 cr)
- BIOL 5870 - Wetland Ecology (3.0 cr)
- CE 4213 - Open Channel Hydraulics (3.0 cr)
- CE 4215 - Hydraulic Design (3.0 cr)
- CE 4228 - Watershed Engineering (3.0 cr)
- CE 5216 - Applications in Environmental Modeling (3.0 cr)
- CE 5237 - Water Quality Engineering (3.0 cr)
- CE 5241 - Water Chemistry (3.0 cr)
- CE 5246 - Environmental Remediation Technologies (3.0 cr)
- CHEM 5150 - Organic and Stable Isotope Biogeochemistry (3.0 cr)
- GEOG 4446 - Water Processes and Management (3.0 cr)
- EES 4201 - Watershed Hydrology (3.0 cr)
- EES 5103 - Geological Paleolimnology (3.0 cr)
- EES 5210 - Glacial and Quaternary Geology (4.0 cr)
- EES 5220 - Advances in Paleoclimatology (3.0 cr)
- EES 5250 - Hydrogeology (4.0 cr)
- EES 5260 - Fluvial Geomorphology (3.0 cr)
- EES 5601 - Introduction to Stream Restoration (3.0 cr)
- EES 8602 - Stream Restoration Practice (2.0 cr)
- LIM 5010 - Integrated Approaches to the Study of Inland Waters (3.0 cr)
- LIM 5011 - Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters (2.0 cr)
- LIM 5012 - Integrated Approaches to the Study of Inland Waters II (3.0 cr)
- LIM 5013 - Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters II (2.0 cr)
- LIM 5101 - Physical Limnology (3.0 cr)
- LIM 5102 - Chemical Limnology (3.0 cr)



- LIM 5103 - Geological Paleolimnology (3.0 cr)
- LIM 5104 *{Inactive}*(2.0 cr)
- LIM 5105 - Research Frontiers and New Directions in Limnology and Environmental Science (1.0 cr)
- PHYS 5541 - Fluid Dynamics (3.0 cr)
- WRS 5050 *{Inactive}*(1.0 - 3.0 cr)

UMD Academic Policies 2018-2019

Contents

Academic Space Allocation Guidelines	2
Academic Standing	3
Appropriate Student Use of Class Notes and Course Materials	4
Class Scheduling Guidelines	5
Course Enrollment Limits and Cancellation	7
Course Numbering	8
Credit for Prior Learning Policy	11
Credit Standards for Instruction and Student Work	12
Degrees with Distinction and Degrees with Honors	14
Establishing, Enforcing, and Waiving Prerequisites	15
Exams for Credit or Proficiency	16
Exams Outside of Regular Class Time	18
Excused Absences	19
Final Examinations	20
Grading and Transcripts	22
High School Preparation Requirements	27
Holds on Records and Registration	29
Inactive Courses	30
Leave of Absence and Readmission for Undergraduates	31
Maintaining Course Records	33

Mid-Term Grade Alerts for Academic Performance 34

Satisfactory/Non-satisfactory (S/N) Grading Policy 35

Student Academic Complaint Resolution 36

Student Academic Integrity 38

Syllabus Policy 42

Syllabi, Recommended Policy Statements for 43

Teaching and Learning: Instructor and Student Responsibilities 45

Transfer of Undergraduate Credit 49

Undergraduate Admission 50

Undergraduate Degree Requirements 52

Withdrawal from the University 53 ¹

Academic Space Allocation Guidelines

Effective: ***November 19,
2011***

Last Updated: ***November 19,
2011***

Policy Owner: ***Academic
Affairs***

Academic space assignment is the purview of the Executive Vice Chancellor for Academic Affairs. Academic space will be used as fully and efficiently as possible. The Minnesota Facilities Model (MFM) space allocation recommendations will be a baseline reference in evaluating requests for space and in justifying the assignment or justification of additional campus space.

Highest priority for the use of space in areas housing classrooms and academic unit offices will be for instruction, offices, and teaching and research laboratories/studios. Student instructional space, including computer laboratories, will be maintained, and expanded if necessary, to satisfy the

demand (number of classes, class size, physical requirements, etc.) for such space. Non-instructional space will be assigned according to the general criteria for space allocation presented below. Library and NRRRI space will be assigned by the respective directors.

Criteria for use of Non-Instructional Space in Academic Units

1. Office space (and research space as appropriate) will be first assigned to full time faculty.
2. Office space for full-time professional staff supporting academic activities will be provided as the next priority.
3. Remaining office space will be assigned to part-time faculty, teaching/research assistants, visiting faculty, and staff supporting outreach activities. Except under unusual circumstances these individuals will be assigned shared office space.
4. Administrative units and personnel most contingent to the space will have highest priority for its use, according to need.
5. Space for externally funded research and creative activities will be allocated after the above needs have been met. Priority in allocation of space for such (funded) activities will be as follows (highest to lowest priority):
 - Projects that provide direct or indirect cost funds to the campus and identify faculty members as principal investigators or managers.
 - Mission-related grant projects supervised by UMD faculty or professional staff.
 - Outside projects that provide direct or indirect funds to the campus.
6. Whenever possible, space will be provided for student groups, student study and lounge areas, and staff lounge areas.

Academic Standing

Effective: **September
1, 2011**

Last Updated: **Approved by EPC February 9, 2011; amended and approved by Campus
Assembly April 12, 2011**

Policy Owner: **Academic
Affairs**

GOOD ACADEMIC STANDING

Students who have a cumulative University of Minnesota GPA of 2.0 or higher are in good academic standing in the University.

ACADEMIC INTERVENTION or WARNING

Students in good standing with the University but who are not making satisfactory progress as defined by the specific degree program, or whose academic performance declines significantly, may be identified for academic intervention and be required to meet with an academic advisor before registration. Colleges who use academic intervention with students who are not making satisfactory progress in their program may change a student to an undeclared or pre-major code.

ACADEMIC PROBATION.

Students with a cumulative University of Minnesota GPA less than 2.0 are placed on academic probation.

ACADEMIC DISMISSAL

Students who fail to achieve a cumulative University of Minnesota GPA of 2.0 during the probationary semester are subject to dismissal from the University. Students with a first-term GPA below 1.0 are subject to dismissal from the University without probation.

READMISSION AFTER DISMISSAL

Students dismissed from the University, who can demonstrate improved academic capability, may petition to be readmitted on a probationary basis after the lapse of at least one semester.

Appropriate Student Use of Class Notes and Course Materials

Effective: **April 29,
2009**

Last Updated: **Approved by EPC February 27, 2002; Amended and approved by EPC
April 29, 2009**

Policy Owner: ***Academic
Affairs***

Overvie w

The faculty of the University of Minnesota encourages students to take and share notes in their classes, laboratories, and the many other instructional settings in which they participate as they pursue their education at the University. Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. The faculty recognizes that collaborative note-sharing and discussion helps students learn.

Explanati on

However, the organization, preparation, and presentation of materials in a class or other instructional setting represent the intellectual effort of the instructor. Instructors have an interest in protecting this intellectual effort and in assuring the accuracy of any public representations of their course lectures and presentations. The classroom should also be a place where instructors feel free to share with students the full range of information available in their subject areas, including results of new research as it is produced, without concern that such new knowledge will be shared prematurely outside the University learning community. Broadly disseminating class notes beyond the classroom

community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. Such actions violate shared norms and standards of the academic community.

- Students may not distribute, via the Internet or other means, lecture notes or instructor-provided materials, except to other members of the same class or with the express written consent of the instructor.
- Instructors have the right to impose additional restrictions on course materials in accordance with copyright and intellectual property law and policy. (See Board of Regents Policy: [Copyright](#), Board of Regents Policy: [Commercialization of Intellectual Property Rights](#) and Administrative Policy: [Copyright Ownership](#).)
- While students hold the copyright to their own notes from a course, students may not engage in the sale or widespread distribution of transcript-like notes or notes that are close to verbatim records of a lecture or class presentation. Students may share notes with other students in the same class.
- The provisions of this policy are enforceable as University rules under the Board of Regents Policy: [Student Conduct Code](#).
- If the faculty of a department or collegiate unit, as a group, or individual faculty in a particular course, have assented to or authorized the distribution of lecture notes or instructor-provided materials, such action does not violate this policy.

4

Class Scheduling Guidelines

Effective: **March 16,
2009**

Last Updated: **March 16, 2009 revised November
12, 2014**

Policy Owner: **Academic
Affairs**

6

Overview

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These guidelines are for the purpose of maximizing the use of instructional space, improving student access to classes, and minimizing campus congestion. The guidelines are designed to apply to most situations, but special circumstances may justify exceptions to these guidelines.

All classes in all terms must comply with policies governing credit standards (academic work per credit and instructional time per credit).

Definitions

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Classroom: an auditorium, lecture room, or seminar room usable by various disciplines for instructional purposes. General purpose classrooms are rooms that are centrally scheduled by the scheduling office and may or may not have fixed demonstration equipment.

Teaching/Class Laboratory: a room with specialized equipment or use that is assigned to a department and used for regularly- or irregularly-scheduled instruction.

Scheduled Use: use of a room for classes with official department identifiers and course numbers for scheduled class and section meetings. Optional meetings, open labs, and tutorial sessions are not included in scheduled use.

Station Occupancy Rate: the percentage of student stations occupied when room is in use. In practice it is computed as the percentage of stations in a room theoretically occupied according to the official enrollment of the course/section. General purpose classrooms are considered "full" at 65% occupancy (Minnesota Facilities Model).

Time Utilization Rate: is the percentage of time that a room is used/scheduled during a specified block of time. The normal block of class time is defined as 8 a.m. to 5 p.m. Monday through Friday. General purpose classrooms are considered fully used at 71% time (Minnesota Facilities Model).

Full Use: General purpose classrooms are defined as fully used when the product of the time and station rates equal 46% (Minnesota Facilities Model).

Guidelines and

Protocols

1. Classes will be scheduled each week of the term in 50 minute time blocks (plus a 10 minute

break), in configurations appropriate for the class and in a manner to minimize class conflicts for students.

2. Classes will start on the hour (8, 9, 10, etc.) Monday through Friday, except as noted below.

3. Three-credit classes can be scheduled on two days (Tuesday and Thursday) instead of over three days by using 75-minute time blocks on each day. These classes must be scheduled between 8 a.m. and 11 a.m. or between 2 p.m. and 5 p.m.; class periods on this schedule would be 8:00-9:15, 9:30-10:45, 2:00-3:15, and 3:30-4:45. Departments should attempt to schedule two, three-credit courses within the three-hour block to

5

use a classroom most efficiently.

4. Non-standard class times will be scheduled before 9 a.m. or after 3 p.m.

5. Exceptions to these schedule patterns may be allowed for pedagogical reasons and in a manner that will minimize possible conflicts in student schedules. Exception requests should be submitted through the college schedule coordinator to the VCAA office for approval. **Non-Standard Request Form**

6. Departments will schedule classes for students on a five-day per week (Monday through Friday) basis.

7. No more than 55% of a department's class time shall be scheduled during the prime time hours. This measurement is based on the TOTAL hours, and/or fraction, of instruction by the department between the hours of 8 a.m. and 5 p.m. Prime time hours are defined as the hours between 9 a.m. and 2 p.m.

Reference UM Report: Course Scheduling- Peak vs Non-Peak Minutes

8. When classes cannot be placed, the campus scheduler will work with the department schedule coordinator to reschedule classes. Classes will be rescheduled first in departments which violate prime-time and/or other class schedule pattern rules.

9. If space becomes available in prime time for class placement, classes will be placed in the

8

following order of priority: technology needed, location preference (from the scheduling software preferences), and best fit between class size and room capacity.

10. Academic offerings have priority on the space into which they have been scheduled. Departments should be certain that academic offerings are not displaced from departmental rooms by meetings, conferences, or other occasional activities.

11. The Room Scheduling Office (rooms@d.umn.edu) should be notified immediately if a class is cancelled or if there are any changes in when, where, or how a class is scheduled or delivered so that affected parties can be notified and/or the room can be rescheduled for other activities.

12. Enrollment capacities (and therefore requested room capacities) will be limited to 10% above the *actual* previous term enrollment.

13. Classes with enrollment capacities equal to or less than 10 should be scheduled in departmental conference rooms whenever possible.

14. After priority scheduling, departmental classrooms will be available for general purpose scheduling before departmental meetings.

15. The availability of a larger classroom must be verified before faculty give students permission to enroll in a class beyond assigned room capacity.

16. Scheduling of teaching laboratories is the responsibility of the department and collegiate unit to which the lab is assigned. Departments are expected to achieve acceptable use of laboratory space (with a "full-use" goal of 44% time utilization and 80% station occupancy). Under-utilized laboratories are subject to reassignment by the EVCAA office.

Course Enrollment Limits and Cancellation

Effective: ***April 30, 2012***

Last Updated: ***Approved by EPC December 14, 2011; approved by Campus Assembly April 17, 2012***

Policy Owner: ***Academic Affairs***

Enrollment limits for course sections

Departments or programs may set minimum and maximum enrollment limits for any course or any section of a course. Enrollment limits are subject to approval by the dean.

Cancellation of low-enrollment courses

1. Each collegiate unit must maintain a policy regarding the cancellation of low-enrollment courses or sections. These policies may differ across colleges and may allow variations by department. Any such policy must, at a minimum, take into account (a) the effect of cancellation of a course or courses on student academic progress and graduation, (b) the need for a course to contribute to appropriate program breadth and curriculum, (c) commitments made to instructors that a course would be offered, and (d) institutional commitments to outside organizations.
2. In the event that a course is canceled, preferably it would be canceled before the beginning of the term, but no later than the second class meeting of the term.

Course Numbering

Effective: ***September 1,
2011***

Last Updated: ***Approved by EPC December 15, 2010; approved by Campus Assembly April 12, 2011; revision approved by Teaching & Learning committee 5-6-15***

Policy Owner: ***Academic
Affairs***

**Semester
Courses**

1. Semester courses will have four digit numbers. The first number designates the course level.

0xxx Courses that are remedial and do not carry credit toward any University degree; however, they may be assessed tuition in the same way as courses that carry credit. 1xxx Course content designed primarily for undergraduate students in their first year of study. 2xxx Course content designed for undergraduate students in their second year of study. 3xxx Course content designed for undergraduate students in their third year of study. 4xxx Course content designed for undergraduate students in their third or fourth year of study; graduate students may enroll in such courses if approved for graduate credit. 5xxx Course content designed for graduate students; advanced undergraduate students may enroll in such courses. 5xxx courses should not be required courses in undergraduate programs. 6xxx Courses for post-baccalaureate students in professional degree programs. 7xxx Courses for post-baccalaureate students in professional degree programs. 8xxx Courses for graduate students. 9xxx Courses for graduate students. **Note: 1xxx courses:** 1xxx courses are to be at the introductory collegiate level. They should have few, if any, prerequisites. Notable exceptions are where there is a sequence of courses at the introductory level (e.g., one-year sequence of science).

Note: 3xxx and 4xxx courses: 3xxx and 4xxx courses are considered to be upper division, are to be of a more advanced level, and should require a higher level of sophistication. They may require previous work at the college level (lower division courses or a credit total as a prerequisite)

Note: Use of 4xxx Courses in Graduate Programs: a maximum of nine 4xxx course credits may be counted for a graduate degree but a graduate program may restrict the use of 4xxx courses in the program (e.g., by stipulating that no more than y credits of 4xxx courses may be counted or by stipulating that only certain 4xxx courses may be counted). Such restrictions may be applied both for 4xxx courses in the major field and for 4xxx courses outside the major field.

Note: 6xxx and 7xxx Courses: 6xxx and 7xxx courses are to be used primarily for post-baccalaureate professional programs.

Thesis Credit Courses

All thesis credit courses shall use the following numbering conventions. 8555 Thesis/Project Credits: Master of Fine Arts
8666 Doctoral Pre-thesis Credits

8777 Thesis Credits: Masters

8888 Thesis Credits: Doctoral

Graduate Active Status Courses

GRAD 0999 Active status; 0 credit; student pays basic email charge each semester of enrollment. 8333 FTE: Masters; student is considered a full-time student for assistantship considerations. 8444 FTE: Doctoral; student is considered a full-time student for assistantship considerations. **Other Courses**

Course component should be consistent with the number of the course (component is listed in parenthesis below). Generally, these courses may be repeated for credit. xx91 Independent Study (IND) xx92 Directed Reading (DRD) xx93 Directed Study (DST) xx94 Research (DRS): For xx91, xx92, xx93 and xx94 registrations, the student and faculty member will develop a contract to include number of credits, nature of work to be accomplished, time expectations and the number of periodic meetings between the student and faculty member. xx95 Special Topics: Umbrella course number for specific topics or issues which are timely in nature. An abbreviated course proposal must be submitted for each new title under the Special Topics umbrella course. A department wishing to offer a specific Special Topics title more than twice must submit a course proposal through the regular approval process to convert this title to a regular course. xx96 Field Study;, Industrial Assignment (FWK): The student will work as an intern in a professional setting. Clear guidelines will be available as to the student's responsibilities. Grading procedures will be identified: In general, 1 credit requires 40 hours of work in a supervised setting over the course of the term. Full-time (40 hours per week) field study courses should equate to 14 credits (43 hours/cr). xx97 Internship (FWK or PRC): The student will work as an intern in a professional setting. Clear guidelines will be available as to the student's responsibilities. Grading procedures will be identified: In general, 1 credit requires 40 hours of work in a supervised setting over the course of the term. Full-time (40 hours per week) field study courses should equate to 14 credits (43 hours/cr). xx98 Reserved for future use. xx99 Reserved for future use. **Dual-listed courses**

A dual-listed course is when a single course is offered at both the 4xxx and 5xxx level. Courses that legitimately meet the needs of undergraduate programs, but are often also used as required or elective graduate courses may be dual-listed 4xxx/5xxx. Students registered at both levels meet at the same time and place, with the same instructor. Separate syllabi are prepared for each level and will evidence respective evaluation criteria and outcomes for the level of the course.

Cross listed courses

A cross listed course consists of a single course offered for registration under two different course

designators. A cross listed course must be at the same level (e.g. 1000-level, 3000-level, etc), have the same content, title, description, outcomes, same or equivalent prerequisites, and be offered for the same number of credits. Course proposals and syllabi for the cross-listed courses must be discussed and approved by both departments, collegiate curriculum committee(s), and dean(s) prior to review by EVCAA. A compelling case based on course content and outcomes must be made on the Course Proposal for cross listing a course. The

9

decision by a department to discontinue a cross-listed course is unilateral and must be communicated in writing and routed through the usual curriculum process.

Credit for Prior Learning Policy

Last Updated: ***Approved by Teaching and Learning Committee: 10-07-2015; revised 2-24-2016; approved by EVCAA 8-25-16***

Policy Owner: ***Academic
Affairs***

The University of Minnesota Duluth recognizes that significant learning can take place in many forms outside of the traditional classroom; i.e., “nontraditional learning.” Such learning may have resulted from participation in certain government, military, employment or other non-graded activities/courses. Actual credit-based coursework as well as AP, CLEP, IB, DSST and other standardized exams do not fall within this policy.

Requests for consideration must comply with the following:

1. If granted, credit for prior learning may or may not include UMD academic credit and/or course requirement waivers.
 - a. Evaluations for academic credit or waiver of program requirements will be conducted by the academic department(s) affected.
 - b. Evaluations for general, non-program-specific credit or waiver of UMD requirements will be conducted by the Associate Vice Chancellor for Undergraduate Education.
2. If academic credit is assigned or program requirements are waived, the following fees apply:
 - a. For academic credit, the student must pay the UMD-approved credit by examination fee. See <http://onestop.umn.edu/finances/fees>
 - b. If program requirements are waived rather than credit assigned, no fee is charged.
3. No more than 30 credits will be awarded for nontraditional requests. Actual credit-based coursework as well as AP, CLEP, IB, DSST and other standardized exams do not fall within this policy.
4. No more than one-half of any program, including majors and minors as well as the Liberal Education Program may be waived in lieu of a non-traditional award.
5. Students must meet all UMD policy requirements, including fulfilling the Liberal Education Program and having a minimum of 120 credits to graduate.
6. Credits based upon Prior Learning Assessments by UMD generally do not transfer to other schools

outside of the University of Minnesota system without reevaluation by their faculty in accordance with their academic policies. Credits based upon Prior Learning Assessments made by other institutions do not transfer to UMD without reevaluation by our faculty in accordance with UMD academic policies. 7. Any request for prior learning assessment must be made within one year of matriculation or completion of the experience(s) in question.

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Credit Standards for Instruction and Student Work

Effective: **September 1, 2011**

Last Updated: **Approved by EPC on December 15, 2010; Approved by Campus Assembly April 12, 2011**

Policy Owner: **Academic Affairs** Credit standards are fundamental to the integrity of University degrees, transferability of courses, curricular transparency, workload assignments, and accountability to state and federal agencies. Therefore, consistency in assigning credit hours to courses is critical.

Long-standing credit hour standards as defined by national organizations for reporting and accountability are becoming inadequate as instruction is increasingly delivered online. This policy maintains the semester credit hour as the standard while broadening its applicability to online and partially online courses. The policy will be reviewed and adjusted as national, state, and accreditation

agencies redefine standards for higher education.

1. The number of credits assigned to an individual course is a function of the breadth and depth of subject matter deemed appropriate by the program faculty to achieve the outcomes of the program or the liberal education category, and approved through the regular curriculum review process.

2. Curriculum guidelines permit programs to define the delivery mode(s) approved for a course as follows:

- Classroom (100% face-to-face)
- Partially online (4 or more face-to-face class periods per term)
- Primarily online (1-3 defined face-to-face meeting dates per term)
- Online (no face-to-face meetings)

The pedagogy should be appropriate for the delivery mode selected for the section of a course.

3. For classroom delivery mode (assuming a 15-week semester)

- For lecture and discussion course components, 750 minutes will be scheduled, according to classroom scheduling guidelines, per credit hour. This typically is scheduled in fifteen (15) 50-minute periods. The course will be designed and expectations established so that the *average* student will need to study and/or engage in out of class learning activities an average of two hours outside of class for every hour in the classroom in order to achieve satisfactory performance.
- Study and/or engage in out of class learning activities include but are not limited to: completing online modules, reading text, viewing recorded lectures, completing assignments, synchronous or asynchronous discussion with the instructor or other students, taking exams, group projects, or service learning.
- For course components such as laboratory, rehearsal and studio, a minimum of fifteen (15) 50-minute periods will be scheduled, according to classroom scheduling guidelines, per credit hour. This component will be designed and expectations established so that the *average* student will need to devote an average of three hours total per credit hour to a combination of scheduled

time and time to study and/or engage in learning activities outside of the scheduled time in order to achieve satisfactory performance.

4. For partially online delivery mode, the course will be designed to utilize both classroom and online delivery so that the combination requires the student to spend an average of 150 minutes per week per credit.

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5. For primarily online or online delivery modes, the course will be designed and expectations established so that in order to achieve satisfactory performance, the *average* student will need to spend an average of 150 minutes per week per credit for a 15 week-semester or 45 hours per credit per course engaged with the course material in a combination of ways (see 3b above). Completion of laboratory experiences conducted using either digital technology or purchased supplemental materials will require additional time and should be designed with expectations that the time required is comparable to completion of similar activity in a laboratory space.

6. For course components that designate individual study or research, the scope of the study or research will be established to require the *average* student to work an average of three hours a week per credit for 15 weeks.

7. For course components that designate a working/learning experience, e.g., internship, student teaching, practicum, field work, in general, 1 credit requires 40 hours of work in a supervised setting over the course of the term. Full-time (40 hours per week) field study courses should equate to 14 credits (43 hours/cr).

8. Any departure from these standards must be justified in the course proposal and approved by the college curriculum committee, and collegiate and campus administrators.

9. The breadth and depth of graduate level work is expected to require additional time to achieve satisfactory performance.

10. For dual listed courses in which, for example, undergraduate students register for the 4xxx level course and graduate/professional students register for the 5xxx level course, workload expectations will be higher for the graduate/professional students. See [Course Numbering Policy](#)

Degrees with Distinction and Degrees with Honors

Effective: **January 3, 2011**

Last Updated: **Approved by EPC January 27, 2010; amended and approved by Campus Assembly November 9, 2010**

Policy Owner: **Academic Affairs**

Baccalaureate degree candidates who have done outstanding work may be awarded special honors upon completion of all degree requirements through graduation with Latin honors, conferral of campus honors, conferral of department honors, or any combination of these.

Latin honors are designated as *summa cum laude*, *magna cum laude*, or *cum laude*. Fifteen (15) percent of students graduating in a collegiate unit will be awarded Latin Honors. Within each college Latin honors shall consist of no more than 3 percent *summa cum laude*, 5 percent *magna cum laude*, and 7 percent *cum laude*. The collegiate unit in which the student is enrolled determines the grade point average requirements for each level of Latin honors.

UMD offers a Campus Honors Program. Students are invited to apply to the program based on class rank, ACT scores, Advanced Placement courses, leadership experience and extracurricular activities. Requirements for graduation with Campus Honors include: a cumulative GPA of 3.3 at graduation; completion of at least three Honors designated courses; completion and presentation of an Honors Capstone project; participation in a minimum of six Honors Program activities events each academic semester.

Departmental honors programs are created by individual departments and approved by the dean. These departments are responsible for a) identifying the criteria for departmental honors, and b) students who, upon graduation, have met all of the requirements of the departmental program.

When the baccalaureate degree is conferred, these achievements are noted, as appropriate, on the student's transcript in the following ways

- *Latin honors: summa cum laude, magna cum laude, or cum laude*
- *Campus Honors: UMD Honors*
- *Departmental honors: Distinction*

In addition, the achievement of Latin honors and departmental honors are noted on the diploma.

Establishing, Enforcing, and Waiving Prerequisites

Effective: **May 19, 2014**

Last Updated: **July 23, 2009 amended April 8, 2014**

Policy Owner: **Academic Affairs**

Procedure/Annotations

Course proposals should indicate whether there is a prerequisite. Prerequisites are enforced by the registration system at the point of registration; students will not be able to register unless the prerequisite course is on the student academic record. Note: transfer credit is not included on the academic record that feeds into the registration system. Students who completed the prerequisite from a transfer institution may not be able to register without instructor or department permission. A specific grade in a prerequisite cannot be enforced at the time of registration; however, faculty may list in the syllabus and verbally confirm in class the need for a specific minimum grade in a prerequisite course.

1. Departments and colleges should be selective in determining prerequisites for courses.

Prerequisites should not be set for a course except in progressive, sequence courses or where departments can clearly demonstrate that a student will not be able to complete the course successfully without first completing the prerequisite course work.

2. Where prerequisites have been set, catalogs and course materials must list them and advise students to take only those courses for which the prerequisites have been met.

3. Where prerequisites have been set, instructors may require that any student who has not taken the specified prerequisites for the course must withdraw. Instructors may, however, grant permission, on an individual basis, for a student to take a course without having taken the prerequisite(s).

Exams for Credit or Proficiency

Effective: **November 22, 2011**

Last Updated: **Approved by EPC October 12, 2011, Approved by Campus Assembly November 22, 2011; revised by EPC 10-31-12, approved by Campus Assembly May 14, 2013.**

Policy Owner: **Academic Affairs**

Certain examinations are accepted for credit toward or exemption from equivalent degree program requirements.

College Level Examination Program (CLEP)

Students may earn college credit for successful completion of some CLEP examinations which have been reviewed by faculty and determined to assess the content of certain UMD courses. The **list of approved CLEP exams** is maintained and posted by the Registrar. Advanced Placement (AP) and International Baccalaureate (IB)

High school students may earn college credit by receiving satisfactory examination scores (3, 4, or 5) on the College Entrance and Examination Board Advanced Placement Program examination, or scores (of typically 5, 6, and 7) on the International Baccalaureate examination. Academic departments evaluate whether the material in the AP exam is substantially similar to that of an existing course, and if so, will award credits for that course. If the material is judged not to be substantially similar to an existing course, the academic department will assign general departmental credits. Academic departments may also provide an alternative method for evaluating proficiency in order to award academic credit. The **list of approved AP and IB exams** and the associated academic credit awards are maintained and posted by the Registrar. Departmental Examinations

Academic departments have the discretion to offer any currently-enrolled, undergraduate degree-seeking student an exam to either demonstrate proficiency or earn course credit. Departments may establish eligibility criteria for an exam for proficiency or credit. The format of these exams is at the department's discretion (e.g., final examination, oral tests, written papers or projects). A student may not take an exam for credit for a course in which s/he is currently enrolled or one already completed for any grade basis (i.e., A-F, S-N, or AUD status). No department is required to offer exams for proficiency or credit.

1. Exam to earn course credit

A departmental exam for credit may be used to earn credit for a course. Credit(s) earned by departmental exam do not earn GPA points and are reflected only within the student's cumulative credit totals on the transcript (not within the term in which the student completed the exam). Credits earned through examination are not considered as regular, residence, or transfer credits.

The academic department giving the examination will determine the minimum standards for successful completion of an exam for credit. Students are required to pay the credit by special examination fee for exams to earn course credit.

Work of "C-" quality or better will earn credit with a 'T' posted on the transcript to indicate credit by exam. If the work on the examination is below this level, no notation is made on the transcript. Only credits, not grades, are granted upon successful completion.

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Procedures to take an examination for credit are found at:

http://www.d.umn.edu/registrar/credit_by_exam.html
2. Exam to demonstrate proficiency

A departmental exam for proficiency may be used to fulfill prerequisites for advanced courses or satisfy other requirements. An exam for proficiency does not yield any course credit or grade. The academic department giving the examination will determine the minimum standards for successful completion of an exam for proficiency. Courses satisfied through proficiency examination do not reduce the total credit requirements for graduation or in the major field.

If proficiency is demonstrated, a notation is made on the student's transcript that reads, "Course X satisfied by proficiency examination."

The department determines whether there is a fee for proficiency testing and administers the fee.

Exams Outside of Regular Class
Time

Effective: **September 3,**

2013

Last Updated: ***Approved by Campus Assembly on May 14, 2013***

Policy Owner: ***Academic Affairs***

It is expected that for most courses, examinations will be given during the regularly scheduled class period. For instances where the instructor deems it necessary for additional exam time beyond the normal class period, the following guidelines apply:

- Department head approval is required for any instructor who wants to schedule an exam in an undergraduate course outside of the regular class time.
- Every semester, a list of undergraduate courses in which exams have been scheduled outside of class time should be sent to the collegiate associate dean or dean for review.
- Faculty must indicate on the course syllabus and any other course information that examinations will be scheduled outside of regular class time. The date and time of the exams should be listed.
- When an exam is scheduled outside of a regularly scheduled class period faculty should cancel a normal class meeting time. The cancelled time slot may be used as an optional review period.
- Accommodation must be provided to any student who encounters an academic conflict, such as between an examination scheduled outside of regular class time and the regular class period of another course, or between two exams scheduled to be held simultaneously outside of regular class time.
- Exams in graduate classes (5xxx and above) may be scheduled at the instructor's prerogative. The course syllabus should describe the nature of the examinations and the scheduling policy.
- Having students vote on rescheduling an exam outside of normal class hours at a different date or time than what appears on the syllabus is not allowed.

Excused Absences

Effective: ***January 3,
2011***

Last Updated: ***Approved by EPC April 28, 2010; amended and approved by Campus Assembly on November 9, 2010, amended and approved by TLC 11-15-17; approved by EVCAA 1-24-18***

Policy Owner: ***Academic
Affairs***

Students are expected to attend all scheduled class meetings. It is the responsibility of students to plan their schedules to avoid excessive conflict with course requirements. However, there are circumstances that lead to excused student absence from the classroom.

1. Students may not be penalized when legitimate and verifiable circumstances lead to their absence from attending class or taking a final exam. These are:

- illness, physical or mental, of the student or a student's dependent(s);
 - medical conditions related to pregnancy;
 - participation in NCAA intercollegiate athletic events (does not refer to or include recreational sports, intramural sports, club sports, or other special interest sport clubs or organizations. Student athletes must provide instructors the team schedule during the first week of the semester.);
 - subpoenas;
 - jury duty;
 - military service;
 - bereavement, including travel related to bereavement;
 - religious observances;
- and
- participation in formal University-wide system governance, including Board of Regents meetings, by students selected as representatives to those governance bodies.

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2. Voting in a regional, state, or national election is not an unavoidable or legitimate absence.

3. Instructors are expected to accommodate students who wish to participate in party caucuses, pursuant to Board of Regents resolution (see December 2005 Board of Regents Minutes, p. 147.)

4. In addition, there are other circumstances not mentioned above that lead to absence from class. These requested absences may be excused at the instructor's discretion; students must provide written documentation to verify the reason for the absence.

Notification, Verification Of Absences, And Make-Up Work

5. Students must notify their instructors of circumstances identified in (1) or other circumstances leading to a request for makeup work as soon as possible and provide information to explain the absence. Some situations will be sufficiently urgent that arrangements for makeup work cannot be made prior to the date of an absence. In such cases, arrangements should be made as soon as possible following the student's return.

6. The instructor has the right to request, and the student must provide if requested, verification for absences.

7. The instructor may not penalize the student and must provide reasonable and timely accommodation or opportunity to make up missed work, including exams or other course

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requirements that have an impact on the course grade if the student:

- Was absent due to circumstances identified in (1);
 - Has complied with the notification requirements;
- and
- Has provided verification if the instructor has requested further information.

8. Instructors are not obligated to accommodate a student who has missed so much of the critical components of a course, even for legitimate reasons, that arrangements for makeup work would not be reasonable.

Instructors should take all factors into consideration when determining whether to grant an excused absence and how to make arrangements for makeup work that has an impact on the course grade. If a student has missed a component of the course that cannot be made up in exactly the same manner, the instructor may substitute another activity or assignment in order to assess the missed components. If no substitution can be devised, the missing component(s) cannot be factored into determining that student's final grade for the course.

Appeals Process The first step of any resolution should be between the parties involved. Department head involvement may be requested to assist in finding a resolution. If the course instructor is the department head then the student should request assistance from the collegiate associate dean. If satisfactory resolution cannot be found at this level, an appeal can be made first to the Collegiate Dean and then to the Office of the Executive Vice Chancellor of Academic Affairs.

Special Situations For the health or safety of a campus, the senior academic officer for the campus or the officer's designee may waive the requirement that students provide verification from a health care provider for illness.

DEFINITIONS

Dependent A person, typically a qualifying child or other relative, other than the taxpayer or spouse, who entitles the taxpayer to claim a dependency exemption for tax purposes.

Medical provider A licensed mental health or medical professional including registered nurses (RNs).

Bereavement Bereavement refers to a period of mourning. For purposes of this policy, (a) bereavement is defined by the student, but (b) the terms of the excused absence, including length of time a student may be excused and makeup work must be negotiated with the faculty member.

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Final Examinations

Effective: ***January 3,
2011***

Last Updated: ***Approved by EPC April 28, 2010; amended and approved by Campus Assembly on November 9, 2010; revised and approved by TLC on 4-26-17***

Policy Owner: ***Academic
Affairs***

All 1xxx-5xxx courses offered for undergraduate credit, including online courses, should include a final graded component or end of term evaluation that assesses the level of student achievement of one or more course objectives. Instructors are encouraged to design the final component or evaluation to be comprehensive and culminating.

1. "Final graded component" or "end of term evaluation" may include a written final examination, project, composition or performance, demonstration of laboratory skills, or presentation. The date of the final graded component should be included on the course syllabus.
2. All final graded components are to be administered or due at the time and place according to the final exam schedule and not during the last week of class. Final Exam Week is part of the regular semester calendar.
3. For courses that end at a time other than the end of the term, final graded components are to be administered or due on the last scheduled day of the course.
4. Comprehensive and culminating means the integration and application of knowledge and skills that form the core of the course.

Exemptions to this policy can only be granted by the appropriate department head and college or school dean. Exemption documentation must be kept on file in the dean's office. Instructors are responsible for informing students of approved deviations from the published final examination schedules.

1. Requests for exemption must be initiated by the instructor of record for the course and forwarded through the department head to the college dean for action. Such requests are considered on a semester-to-semester basis.
2. Requests for permanent exemption for a course for which regular final graded component is inappropriate, such as independent study or seminar courses, should be initiated by the sponsoring department and forwarded to the college dean for action. Such requests, once granted, remain in effect until modified by action of the department.

Examinations Scheduling Procedures

There are two formats for final examinations, regular final examinations and common final examinations. All students are responsible for knowing the final examination scheduling information

contained in the UMD Class Schedule and the UMD common examination schedule.

Regular final examinations are scheduled in accordance with the time and days of semester class meetings as indicated in the electronic class schedule documents. Those classes starting on the quarter or half hour use the closest on-hour start time. Example: for a class which normally meets at 9:15 or 9:30 T,Th, use the exam schedule for 9:00 T, TH. For classes with multiple start times the final exam shall be determined by the day and time of the earliest scheduled class period in a normal week.

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Common final examinations may be scheduled for courses offered in three or more sections and must be requested by the department responsible for the instruction. When one or more common exams are scheduled at the same time, priority is given to the earliest class time, as determined by the Class Schedule. The common examination schedule is published in advance of the semester final examination period.

Final Examination Conflicts

UMD policy provides that no student may be required to take more than two final examinations on the same day. The regular final examination and the common examination schedules are constructed to minimize conflicts.

Conflicts are resolved according to the following policy. Regular final examinations take priority over common final examinations and both take priority over examinations that have been shifted to a time deviating from the published examination schedule. When three or more regular final examinations fall on the same day for an individual student, the first and last scheduled examinations on that day take priority over others. When one regular final examination conflicts with two or more common final examinations, the first scheduled common final examination on that day takes priority over other common final examinations. When three or more common final examinations fall on the same day, the first and last scheduled examinations on that day take priority over others. When one or more common final examinations are scheduled at the same time, priority is given to the earliest class time as determined by the regular class schedule.

In cases where a student has three final exams (or graded components) in one day and one of those is for an online course, the graded component for the online course should be considered the “middle” exam and thus, upon request from the student, rescheduled. In cases where a student has three final graded components in one day and two of those are for online courses, upon request from

the student, one of the graded components for one of the online courses should be rescheduled. In cases where a student has three final graded components in one day and all of those are for online courses, upon request from the student, one of the exams for one of the online courses should be rescheduled.

Students will notify their instructors at least one week before the start of final exams during the regular school year or three days before the start of final exams during summer term of final exam conflicts.

Makeup Examinations

When a student is excused from a final examination because of a conflict of more than two exams scheduled on the same day, a makeup examination will be scheduled during the final examination period on a day and at a time of mutual convenience to the student and faculty member concerned. If mutual agreement cannot be reached, the faculty member may specify any time during the final examination period that does not create additional conflict with the rest of the student's scheduled examinations.

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Grading and Transcripts

Effective: ***January 3,
2011***

Last Updated: ***Revised by the Teaching & Learning Committee March 15, 2017,
approved by EVCAA November 22, 2017***

Policy Owner: **Academic Affairs**

This policy may be modified from time to time but existing transcripts will not be modified when there are changes in policy. Changes to the grading and transcript policy will be reflected on the legend on the back of the official transcript.

A. Establishment and Use of University Grading Systems

1. There are two distinct grading systems at the University of Minnesota Duluth, A-B-C-D-F (with pluses and minuses as permitted by this policy; see chart below) and S-N. The S-N system is a self-contained alternative to the A-F system and the two may not be combined for a particular student in a particular course. Students may receive grades or symbols only from the grading system under which they have registered for a course. This policy does not require any instructor to use pluses and minuses. 2. There are, in addition, registration symbols identified and described in this policy that carry neither

grade nor credit. 3. No college or program is required to offer a course on the S-N grading system. 4. Any unit may choose to limit grades in a particular course to the A-F or the S-N system. 5. When both grading systems are available to a student, he or she must declare a choice of system as part of the initial registration for the course. The choice may not be changed after the end of the second week of classes (the first week in summer sessions). 6. Except as provided in this policy in Section A (7), no college may use any grading systems other than

the ones established by this policy. 7. The UM Medical School Duluth is exempt from the provisions of this policy, but will report their grading systems, and any changes therein, to the Office of Academic Administration. 8. The No Grade (NG) grading basis is used for courses where no grade is required, i.e. thesis courses or

courses that have no credit value. **B. Permanent Grades for Academic Work**

1. The list below identifies the possible permanent grades that can be given for any course for which

credit is to be awarded. These grades will be entered on a student's official transcript and carry the indicated grade points. (UMD does not award A+ grades, nor are D- grades permitted).

Grade Grade
Points

A 4.000 Represents achievement that is outstanding relative to the level necessary to meet course requirements

A- 3.667

B+ 3.333

B 3.000 Represents achievement that is significantly above the level necessary to meet course requirements

B- 2.667

C+ 2.333

C 2.000 Represents achievement that meets the course requirements in every respect

C- 1.667

D+ 1.333

D 1.000 Represents achievement that is worthy of credit even though it fails to meet fully the course requirements

S Represents achievement that is satisfactory, which is equivalent to a C or better. The S grade will not carry grade points but the credits will count toward the student's degree program if allowed by the college or program.

F 0.000 Represents failure and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an I (see Section C). The F carries 0 grade points and the credits for the course do not count toward any academic degree program. The credit hours for the course will count in the grade point average.

N Represents no credit and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an I (see criteria for I grade). The N carries no

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grade points and the credits for the course do not count toward any academic degree program. The credit hours for the course do not count in the grade point average.

1. These definitions might not apply to grades awarded to students enrolled in graduate, post-baccalaureate, and professional programs, but the grade points are the same no matter the level or course of enrollment. 2. Instructors are permitted to hold graduate and undergraduate students who are in the same class to different standards of academic performance and accomplishment. The syllabus must make clear what the different standards will be for the different groups of students who may be enrolled in the class. 3. These are the general University standards. In connection with all symbols of achievement, instructors will define for a class, at one of its earliest meetings and as explicitly as possible, the performance that will be necessary to earn each grade. 4. Grades for academic work are based on the quality of the work submitted including when a grade is reduced by the instructor for academic dishonesty. Instructors have the responsibility and authority to determine how final grades are assigned. **C. Incompletes**

There will be a symbol I (incomplete) awarded to indicate that the work of the course has not been completed. The I will be assigned at the discretion of the instructor when, due to extraordinary circumstances (as determined by the instructor), the student who has successfully completed a substantial portion of the course's work with a passing grade was prevented from completing the work of the course on time.

1. The assignment of an I requires a **written agreement** between the instructor and student specifying the time and manner in which the student will complete the course requirements. In no event may any

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such written agreement allow a period of longer than one year to complete the course requirements, except as provided in section C (7). 2. Work to make up an I must be submitted to the instructor (or the department head) within one year of the last day of final examinations of the term in which the I was given for all students except graduate and professional students. If not submitted by that time, the I will automatically change to an F (if the student was registered on the A-F system) or an N (if the student was registered on the S-N system) for the course. If an I changes automatically to an F or an N, the instructor has the discretion to reinstate the I for one additional year only. 3. For graduate and professional students, an I remains on the transcript until changed by the instructor or department head. Under

non-academic exceptional circumstances, more than one year may be permitted to complete the I, when noted in the written agreement. 4. When an I is changed to another symbol, the I is removed from the record. Once an I has become an F or an N, under the provisions of the preceding paragraph, it may subsequently be converted to any other grade, upon petition by the instructor (or the department if the instructor has left the University) to the college. 5. A student does not need to be registered at the University in order to complete the work necessary to convert an I to a grade with credit in the time and manner previously agreed upon between the student and the instructor. The instructor is expected to turn in the new grade within four weeks of the date the work was submitted by the student. (Depending on the timing of when the work is turned in and the ability of the instructor to award a grade, an F or an N may appear temporarily on the transcript.) 6. Students may have a degree conferred with an I for a course(s) that is not required for the degree. A permanent grade may replace the I and be calculated in the degree GPA within 30 days from the end term in which the degree was conferred. Otherwise, the degree GPA is frozen upon graduation but the cumulative GPA will reflect the change in GPA as a result of the grade change. 7. When students are called to active military duty, and reach agreement with their instructor(s) to take an incomplete, they will have up to one calendar year following their discharge from active duty to complete their incomplete(s). 8. Receipt of an I in a course does not create an entitlement for a student to take the course a second

time. **D. Scholastic dishonesty**

Scholastic dishonesty in any portion of the academic work for a course may be grounds for awarding a grade of F or N for the entire course, at the discretion of the instructor. This provision allows instructors to award an F or an N to a student when scholastic dishonesty is discovered; it does not require an instructor to do so. Students who enroll for a course on the A-F grading system will receive an F if such grade is warranted; students who enroll for a course on the S-N system will receive an N if such grade is warranted. (See Board of Regents Policy: *Student Conduct Code*, Academic Integrity, for a definition of scholastic dishonesty.)

E. Other Transcript Symbols

1. **Credit by Exam.** There will be a symbol T posted as a prefix to the original grade, to indicate credits awarded by test. 2.

Auditing a course.

- a. There will be a symbol V, visitor, indicating registration as an auditor or visitor, which will carry no credit and no grade.
- b. Students auditing a course are required to pay full tuition but

do not take exams and are not

required to do homework. An auditor is entered on the class roster (grade report), is counted as filling a seat in a controlled entry course, and is counted in an instructor's student contact hours. c. Students may not sit in on a course without registering for it.

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d. A student will be allowed to take a previously audited class for a grade. 3. **Withdrawing from a course.**

a. If a student cancels registration in a course during the first two weeks of classes, there will be

no record of that course registration entered on the student's transcript. b. There will be a symbol W, withdrawal, entered on the transcript irrespective of the student's

academic standing in that course, if the student withdraws from the course during the third through tenth week of class or during the second or third weeks of summer

sessions. c. Except as provided in the preceding section, withdrawal after the deadlines will require

approval of the college and may not be granted solely because a student is failing the course; there must be extenuating non-academic circumstances justifying late withdrawal. 4.

Continuation course. There will be a symbol X, indicating a student may continue in a continuation course in which a grade cannot be determined until the full sequence of courses is completed. The instructor will submit a grade for each X when the student has completed the

sequence. 5. **No Grade.** There will be a symbol, NG, posted for courses in which no grade is required. 6. **No grade reported.** There will be a symbol NR, administratively assigned to

indicate that a grade was

not reported for the course. The NR does not carry

any GPA points. **F. Repeating Courses**

Students may retake a course in which they received a grade of a C- or lower or an N. Those wishing to retake a course in which they earned a grade of a C or higher or an S must obtain department approval before registering for the course through a Permission to Retake a Course (or Equivalent Course) form.

1. **Within the University of Minnesota System.** Students may choose either to retake the UMD course at

UMD or to take an approved equivalent course anywhere else within the University of Minnesota system. The latter requires department approval prior to registration through a Permission to Retake a Course Using an Equivalent Course form. Only the last grade recorded is used in

calculating the University of Minnesota GPA. Only the most recently completed credits can be applied toward graduation requirements. 2. **Outside the University of Minnesota System.** UMD students may take an equivalent course at an

institution outside of the University of Minnesota system to replace a course previously completed at UMD only if department approval is granted before registering for the course through a Permission to Retake a Course Using an Equivalent Course form. Although this course may be used to meet UMD degree requirements, its grade will not be included in the student's University of Minnesota GPA. Only the most recently completed credits can be applied towards graduation requirements. A notation will be added to the transcript that the UMD course was repeated at another institution. 3. When a student repeats a course before receiving his/her degree, (a) both grades for the course will

appear on the official transcript, (b) the course credits will not be counted more than once toward degree and program requirements, and (c) only the last enrollment for the course will count in the student's grade point average. This does not apply to courses (1) using the same number but where students study different content each term of enrollment and (2) to courses designated as "repetition allowed." 4. If an undergraduate student repeats a course after his/her degree has been awarded, the original

course grade will not be excluded from the degree GPA nor will the new grade be included in the degree GPA. 5. Bracketing is the practice of not including a course in the calculation of a student's GPA and not

counting the course as satisfying any degree requirements, including electives, because a student has repeated a course. When a student repeats a course, all prior attempts are bracketed and only the most recent attempt counts. An F grade earned in a course may not be bracketed with an N grade earned when the course is repeated. Any grade earned in a course may be bracketed with an S grade earned when a course is repeated.

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6. When a student enrolled in the Graduate School repeats a course, provision 3 applies, but all grades

for the course will be counted in the student's grade

point average. **G. Other Provisions**

1. **Zero-credit courses.** Courses that carry zero credits do not count in either term or cumulative grade

point averages. Such courses carry normal tuition and fee charges. 2. **Releasing transcripts.** The University's official transcript, the complete and chronological record of the student's enrollment and academic performance, will be released by the University only at the request of the student or in accord with state or federal statutes. 3. **Grade point average.** Every

student will have calculated, both at the end of each grading period (quarter or semester) and cumulatively, a grade point average, which will be the ratio of grade points earned divided by the number of credits attempted with grades of A-F (including pluses and minuses). Both the term and cumulative grade point average will appear on each student's record. 4. **Final grade due date.** Final grades will be submitted to the Registrar no later than three business days

following the date of the last scheduled final examination for the term. 5. **Transcript Text.** Text notations may be entered to the transcript to describe specific events. Any requests for a new category of notation to be included on the transcript must be approved by the Registrar in coordination with Academic Affairs.

High School Preparation Requirements

Effective: ***January 3,
2011***

Last Updated: ***Approved by EPC on April 28, 2010; amended and approved by Campus***

Assembly on November 9, 2010; revised and approved by EPC March 7, 2012; approved by Campus Assembly April 17, 2012

Policy Owner: ***Academic Affairs***

These University undergraduate admission requirements were prepared and adopted in conjunction with the University system and Minnesota State Colleges and Universities.

**1.
ENGLISH**

Four years, including writing, literature, and speech. Within the writing component, students may elect work in composition, creative writing, journalism, or research writing. Literature may include both American and world literatures; speech may include both public speaking and debate.

**2.
MATHEMATICS**

- For any student seeking admission before fall 2015: Three years consisting of two years of algebra, one of which must be intermediate or advanced algebra, and one year of geometry.
- For any student seeking admission fall 2015 and thereafter: Four years, including two years of algebra, one of which must be intermediate or advanced algebra, and one year of geometry.

**3.
SCIENC
E**

Three years, including at least one course each in the biological and physical sciences, and all three units to incorporate significant laboratory experience. The biological and physical science requirements would most commonly be met by courses in biology, chemistry, and physics. Other courses could include advanced biology, human anatomy and physiology, botany, zoology, geology, and advanced chemistry and physics.

**4. SOCIAL
STUDIES**

Three years, including one year each of geography and American history. Geography need not always be taught as a full year course, and may in fact be incorporated in a significant way into other

studies; transcripts should indicate specifically which courses meet the geography requirement.

5. WORLD LANGUAGE

Two years of a single second language.

6. ARTS

One year in the visual or performing arts including instruction in the history and critical interpretation of the art form. Courses in the arts should offer students the opportunity to experience the arts directly as creators/performers and as critical, informed observers.

Recommended

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Study in mathematics and science is highly recommended.

Students should consult their college/program policies for more specific requirements.

In exceptional cases, UMD admits students deficient in these requirements with the expectation that any deficiencies will be made up before 60 credits, including transfer credits, are earned. Any student admitted as an exception to this policy will be unable to graduate until the requirement is fulfilled.

Holds on Records and Registration

Effective: **June 29, 2009**

Last Updated: **June 29, 2009**

Policy Owner: **Academic Affairs**

The University may impose holds on student records for financial, judicial, or academic reasons.

Holds may be placed on a student's record under the following circumstances:

- In order to assist the student, advisers may at any stage during a student's academic career impose a hold on his or her record that affects the student's ability to register when appropriate for advising purposes.
- The University may place a hold on a student's record for a violation of Board of Regents Policy: *Student Conduct Code* or for failure to meet financial obligations to the University (for example, unpaid bills, library fees, unreturned keys).
- Academic Affairs may designate other appropriate reasons for the University to place a hold on a student's record.

A hold ordinarily will prevent a student from obtaining an official transcript or registering for courses or making changes to courses for which they have already registered.

To remove a hold from a student record, the student must first pay the debt owed; correct the deficiency or problem; or be cleared by the Office of Student and Community Standards.

Inactive Courses

Effective: ***Reviewed and posted, March 23, 2009***

Last Updated: ***March 23, 2009***

Policy Owner: ***Academic Affairs***

If a course is described in our catalog, there is a reasonable expectation that it would be scheduled on a regular basis. The University catalog will not include courses that have not been offered in the past two years and are not scheduled in the upcoming year.

Courses that do not meet the scheduling criteria outlined above will be changed to inactive status in

the Electronic Course Authorization System (ECAS) and as a result, will not appear in the online catalog. If a department plans to put an inactive course back into rotation, its status can be changed to active by memo to EVCAA.

Leave of Absence and Readmission for Undergraduates

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Effective: **January 11, 2017**

Last Updated: **Approved by Teaching & Learning committee 11-2-16; approved by EVCAA 11-22-16**

Policy Owner: **Academic Affairs**

Undergraduates are expected to maintain continuous registration from the time they matriculate until they graduate. Students who will not maintain continuous registration for any reason should consult with an adviser about whether to request a leave of absence because there may be financial aid or re-enrollment implications if a student leaves without a leave of absence.

1. Students in good academic standing will ordinarily be granted a leave of absence upon request. The term of the leave must be specified and may not exceed two years. (Study abroad may or may not require a leave of absence.)
2. All colleges will have a process for implementing this policy.
3. Students who follow the college process and whose leave is approved in accordance with this policy need not apply for re-admission when they return, and students may return before the expiration of the leave. Whether the student returns early or at the expiration of the leave, colleges may condition the timing of re-admission to a program on availability of space. Re-admission may be denied based on crimes or other serious misconduct occurring during the leave that would have been grounds for suspension or expulsion had the student engaged in the conduct while enrolled (see Board of Regents Policy: *Student Conduct Code*.)
4. Undergraduates who fail to register for two semesters (excluding summer) and who have not been granted a leave of absence or whose leave of absence has expired will be placed on "inactive" status. Students who are placed on Inactive status must obtain permission to be re-admitted to a program. Students in good academic standing at the time they became Inactive normally should be allowed to return to Active status. Students on Inactive status must contact their college office for approval to regain Active re-enrollment status before registering for another term.
5. At the time of matriculation, students should be informed about both the consequences of Inactive status and the University's policy, including whether re-enrollment after a period of Inactive status is dependent on availability of space in the program.
6. A student who has left the University without a leave of absence for more than two consecutive semesters (not including summer session) may be held to new program requirements upon

his or her return. A student returning after one year or less will be allowed to follow the program requirements.

FORMS/INSTRUCTION

S *Application for
Readmission*

FREQUENTLY ASKED QUESTIONS

1. Who should a student contact about taking a leave of absence?

A student should contact her/his academic advisor and follow the process for the college in which the student is enrolled. Information is found at:

<http://www.d.umn.edu/onestop/degree-planning/re-enroll.html>.

2. If a student is on a leave of absence and has questions about returning or extending the leave, who should the student contact?

The student should contact the college student services office for the college in which the student was enrolled at the time of taking the leave.

3. If a student is inactive (i.e., not on an approved leave of absence) and would like to inquire about resuming her/his studies, who should the student contact?

The student should contact the college student services office for the college in which the student was enrolled at the time of last enrollment. The student should provide current contact information, and the student's U of M ID number, and indicate that the student is inquiring about readmission.

4. Can an undergraduate student on a leave of absence from the University of Minnesota enroll in college courses at another institution during the leave?

Yes, a student on an approved leave of absence can take courses at another institution during the leave. However, a student on leave from one University of Minnesota campus is not

permitted to take classes at another University of Minnesota campus during the leave.

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Maintaining Course Records

Effective: ***April 30,
2012***

Last Updated: ***Approved by EPC on November 30, 2011; approved by Campus Assembly***

April 17, 2012

Policy Owner: **Academic Affairs**

1. Student work which has not been returned to the student by the end of the semester should be retained by the instructor for a minimum of 30 days into the next semester (not including summer, so a request in the spring would require a unit to hold the work until 30 days into the following fall semester) in order to permit students the opportunity to retrieve or review their work, as appropriate. After the retention period, such student work must be discarded securely (following applicable University document-destruction procedures).
2. Instructors must follow state and federal privacy laws in retaining and returning student work. (For example, student work may not be left in hallways or other public places where anyone may see it.)
3. Academic departments must retain grade books or their equivalents for a minimum of one year or, if a grade is appealed, until the end of the appeal. Instructors leaving the University must give all grading records to the department.
4. Academic units must also be aware of and follow Administrative Policy: *Managing University Records Retention*.

Mid-Term Grade Alerts for Academic Performance

Effective: **June 1, 2009**

Last Updated: **June 1, 2009; revised by the Teaching & Learning Committee March 12, 2014; approved by EVCAA May 6, 2014; revised by the Teaching & Learning Committee November 19, 2014**

Policy Owner: **Academic**

Affairs

1. Instructors in all 1-XXX and 2-XXX courses will provide a mid-term grade alert for students who, on the basis of performance to date in the course, appear to be in danger of receiving a grade of D, F, or N. Such notification will be provided no later than the end of the eighth week of the semester and earlier if possible, to allow students to improve their classroom performance or to withdraw by the tenth week. Mid-term grade alerts will not be recorded on transcripts.
2. Instructors are encouraged to provide mid-term grade alerts for all other courses.
3. The provision of mid-term grade alerts is a courtesy to the student. Failure to receive a mid-term grade alert does not create the right for a student to contest a grade in a course.

Satisfactory/Non-satisfactory (S/N) Grading Policy

Effective: **January 13, 2016**

Last Updated: **Approved by TLC 11-18-15; approved by EVCAA 11-20-15**

Policy Owner: **Academic
Affairs**

Limits on the use of S/N grades (see Grading and Transcripts Policy for definitions of S and N).

1. The maximum number of University of Minnesota S/N credits permitted within the total of University credits in the degree is 20 credits.
2. No unit will allow S/N grading in major course work unless the S/N grading system is preset by the unit for specific courses.
3. For a student who completes only the minimum number of 30 credits at the University, no more than 8 of the 30 credits may be taken S/N.
4. Subject to the overall University policy contained in #1 above, colleges, campuses, and programs may specify what courses or proportion of courses taken by its students or its prospective students must be on the A/F or S/N grading system, not to exceed 20 required S/N credits
 - a. In exceptional cases only, such as may occur with a student coming to UMD specifically to obtain student teaching credit, #4 is intended to over-ride #3. Students should always consult with their advisors before registering for S/N graded courses.

Student Academic Complaint Resolution

Effective: ***November 22,
2011***

Last Updated: ***Approved by EPC on October 12, 2011, Approved by Campus Assembly
November 22, 2011; Revised and approved by Teaching & Learning Committee 3-11-15;
approved by EVCAA 4-30-15***

Policy Owner: ***Academic
Affairs***

Scope and Purpose

This procedure implements **Board of Regents Policy: Conflict Resolution Process for Student Academic Complaints** and outlines the resolution process. Academic complaints are complaints brought by students regarding the University's provision of education and academic services affecting their role as students. Academic complaints must be based on a University rule, policy, or established practice claimed to be violated. (This policy does not limit the University's right to change rules, policies, or practices.)

This procedure does NOT apply to student complaints regarding:

- University employment
- Disciplinary action under **Board of Regents Policy: Student Conduct Code** (with the exception of academic dishonesty)
- Grades
- Applicant complaints regarding University admission decisions

This policy provides a process that allows for both informal and formal resolutions of conflicts. Resolutions may include student reinstatement or other corrective action for the benefit of the student, but may not include monetary compensation or take disciplinary action against any employee of the University. If, as a result of the outcome of a student complaint, discipline is being considered, the appropriate disciplining member of the administration or his/her designee who will follow the procedures in the relevant contracts, and where applicable, will conduct a separate investigation.

Informal Resolution

The first step of any resolution should be at the lowest level, between the parties involved (usually the student and faculty member) or the parties and an appropriate administrator (usually the Department Head) at that lowest level. If the issue is not resolved informally, the student may seek formal resolution.

Formal

Resolution

Each college unit designates an academic complaint officer (generally the Associate Dean) who reviews formal complaints, interviews the parties involved, and recommends a course of action to the Dean, who provides a formal resolution. In the case of involved units without an established faculty, the complaint officer will be a member of that staff.

Steps (listed in the order in which they should occur):

- The complaint should be filed in the collegiate unit in which the incident occurred.
- The complaint must be submitted in writing to the college Associate Dean, identifying the complainant, 37 the respondent(s), the incident, the rule/policy/established practice claimed to be violated, and a brief statement of the desired outcome.
- The Associate Dean conducts the investigation and makes a recommendation to the Dean of the college (or Director in units without an established faculty), who provides a formal resolution.
 - If the complainant is not satisfied with the Dean's/Director's decision, an appeal may be made to the appropriate Associate Vice Chancellor of Academic Affairs who will review materials from the investigation.

The decision of the Associate Vice Chancellor of Academic Affairs is final.

Complaints arising from actions of college Deans will be resolved as outlined below (listed in the order in which they should occur):

Steps:

- The complaint must be submitted in writing to the appropriate Associate Vice Chancellor of Academic Affairs identifying the complainant, the respondent(s), the incident, the rule/policy/established practice claimed to be violated, and a brief statement of the desired outcome.
- The Associate Vice Chancellor conducts the investigation and recommends a course of

action to the Executive Vice Chancellor, who provides a formal resolution.

- If the complainant is not satisfied with the decision of the Executive Vice Chancellor, an appeal would go to the UMD Chancellor who will review materials from the investigation.

The decision of the Chancellor is final.

Timelines

- All complaints must be filed within fifteen (15) business days after the incident causing the complaint occurred. A response to the complaint must be filed within ten (10) business days.
- The Dean (or Associate Vice Chancellor if the respondent is a Dean) shall provide a formal resolution, if required, within thirty (30) business days of the date formal action is requested.
- Appeals of the Dean's (or Associate Vice Chancellor's if the respondent is a Dean) actions must be filed within fifteen (15) business days.
- The Executive Vice Chancellor (or Chancellor if the respondent is a Dean or Associate Vice Chancellor) shall provide a final resolution, if required, within thirty (30) business days of the receipt of an appeal.
- Timelines may be adjusted if there are compelling reasons for delay offered by any of the parties.

Effective: **November 22, 2011**

Last Updated: **Approved by EPC October 12, 2011; Approved by Campus Assembly November 22, 2011; Revised and approved by Teaching & Learning Committee 3-11-15; approved by EVCAA 4-30-15**

Policy Owner: **Academic Affairs**

Introduction

Academic dishonesty tarnishes UMD's reputation and discredits the accomplishments of students. UMD is committed to providing students every possible opportunity to grow in mind and spirit. This commitment can only be fulfilled in an environment of trust, honesty, fairness, respect, and responsibility. As a result, academic dishonesty is regarded as a serious offense by all members of the academic community. All faculty, staff, and students are expected to maintain the highest levels of academic integrity.

Scope and Purpose

This policy addresses violations of academic integrity by one or more members of the UMD student academic community. This policy is consistent with the Board of Regents **Student Conduct Code**. "(1) Scholastic Dishonesty: Scholastic dishonesty means plagiarism; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying of data, research procedures, or data analysis."

Prohibited Content

All forms of academic dishonesty are prohibited, including (but not limited to):

- submitting false records of academic achievement

- cheating on assignments or examinations
- submitting sentences or ideas as your own without proper acknowledgment or citation (plagiarizing)
- altering, forging, or misusing a University academic record or forging the signature of any member of the University community
- taking, acquiring, using, or circulating test materials without faculty permission
- acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement
- facilitating academic dishonesty by knowingly assisting another student to violate the Student Academic Integrity Policy, such as providing course work for another student to turn in as their own effort or taking an exam for another student
- presenting as one's own a plot, succession of ideas, or list/outline of another without proper acknowledgment

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- attending a class, completing an assignment, or taking a quiz/test in the name of another student
- altering or viewing computer records, dispensing or releasing information gained via unauthorized access, modifying computer programs or systems, or interfering with the use or availability of computer systems or information (refer to UMD policy)
- purchasing or otherwise presenting work as your own when it was done by another person
- submitting the same paper or work (or generally similar papers or work) to meet the requirements of more than one course without the approval and consent of faculty
- depriving another student of necessary study or research materials or in any way impeding another student's work and pursuit of education

- submitting falsified data, such as bibliographic resources and experimental data or altering graded academic work/quizzes/tests and resubmitting them in order to get a higher grade
- use of electronic devices for the unauthorized assistance in academic work, quizzes, or tests
- distributing or selling video, audio, or transcript-like notes of lecture or course presentations.

Procedure for Handling Violations

Academic dishonesty violates the Board of Regents Student Conduct Code. Violations of academic integrity will be adjudicated by faculty and academic administrators. As per University of Minnesota policy ([Resolving Alleged Student Conduct Code Violations](#)), a preponderance of evidence (i.e., more likely than not) is used in adjudicating violations. In addition, the UMD Student Conduct Officer maintains a record of violations, and will notify the student of the appeal process.

Upon a suspected violation of this policy, the process is as follows:

- The faculty member will schedule a meeting with the student about the violation.
- If the faculty member decides to take action, the faculty member is responsible for imposing a sanction, and must file the [Report of Academic Dishonesty](#) with the UMD Student Conduct Officer who advises the student of the appeal process, and that this event has been noted as a Student Conduct Code violation.
- If the student refuses to meet or disagrees with the faculty member, the faculty member completes the Report of Academic Dishonesty form, including the sanction imposed, and forwards it to the Student Conduct Officer who advises the student of the appeal process, and that this event has been noted as a Student Conduct Code violation.

Examples of faculty sanctions include but are not limited to:

- additional work
- grade reduction on an assignment/quiz/test, including

an F

- grade reduction in the class, including an F
- re-examination
- other sanctions deemed appropriate by faculty member

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Faculty members are encouraged but not required to notify the department head when sanctions are imposed.

A student who disagrees with the allegations or the sanctions may utilize the appeals process outlined below.

Multiple Violations

Academic integrity violations are adjudicated by faculty and academic administrators; however, they are considered as violations of the Student Conduct Code and are monitored by the UMD Student Conduct Office. A student with multiple academic integrity violations will be reported to UMD Academic Affairs where the Associate Vice Chancellor for Undergraduate Education may recommend any possible sanctions available under the Student Conduct Code, including but not limited to:

- warning/reprimand
- withdrawal of University funding
- suspension from the University for a given period of time
- permanent expulsion from the University
- other sanctions deemed appropriate by the academic affairs officer

Timeline for Single Violation

1. The faculty member must request a meeting with the student within ten (10) business days of becoming aware of the offense.
2. All reports of academic dishonesty should be filed by the faculty member within ten (10) business days of imposing the sanction.
3. A student who disagrees with the faculty member's allegations and/or sanction(s) has ten (10) business days from the date the Report of Academic Dishonesty was submitted to begin the appeals process.
4. The first step of the appeals process is to speak with the faculty member's Department Head. If the faculty member is the Department Head the student should meet with the Associate Dean of the College. Within ten (10) business days after speaking with the student, the Department head or Associate Dean of the College provides a written decision to the student concerning the appeal.
5. A student who disagrees with the written decision of the Department Head or Associate Dean of the College may use the [Student Academic Complaint Resolution policy](#) to further appeal.

Any of these timelines may be adjusted by mutual consent. Winter, spring, and summer breaks are taken into account.

Timeline for Multiple Violations

1. If the Office of Student Conduct identifies the student as having more than one academic integrity violation reports on file, the student will be referred to the Associate Vice Chancellor for Undergraduate Education (AVCUE), who will review the reports and contact the student within

ten (10) business days of receiving those reports, requesting a face-to-face meeting with the student.

2. The student has five (5) business days from the AVCUE's request to respond. If the student does not respond or refuses to meet with the AVCUE then the AVCUE has the option to impose additional

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penalties on the student and simply inform him or her of those penalties. In such cases the student will have lost the option to appeal the AVCUE's decision.

3. If the student agrees to meet with the AVCUE a time will be found that is convenient to both.
Materials

will be reviewed and options discussed. The AVCUE will make a decision and inform the student within five (5) business days after the meeting of that decision. If the student disagrees with the AVCUE's decision she or he may appeal to the Executive Vice Chancellor for Academic Affairs. The appeal must be in writing (email is acceptable) and must detail the basis of the appeal. Simply disagreeing with the decision is not an acceptable basis for appeal. The appeal must be filed within five (5) business days of the AVCUE's decision. The Executive Vice Chancellor for Academic Affairs' decision will be communicated within ten (10) business days of receiving the appeal.

The decision of the Executive Vice Chancellor for Academic Affairs is final.

Any of these timelines may be adjusted by mutual consent. Winter, spring, and summer breaks are taken into account.

Syllabus
Policy

Effective: **January 3,
2011**

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Last Updated: **Approved by EPC April 28, 2010; amended and approved by Campus Assembly November 9, 2010, updated & approved by EVCAA April 28, 2017**

Policy Owner: **Academic Affairs**

During the first week of classes each instructor must provide a course syllabus in written or electronic form to every student in each course [1] that s/he teaches. In order to help students complete the course to the best of their abilities, the syllabus must contain:

1. Course designator, number, and title, and the current semester. 2. Class meeting times and location(s). 3. Instructional staff names and contact information: office hours, office location, phone number, and e-mail address. 4. Course pre-requisites, as applicable. 5. Required course materials such as text book(s), online readings, software, and computer use. 6. If the course is in the Liberal Education Program, a statement of the category (or categories) that the course fulfills. 7. Student learning outcomes for the course, which includes Liberal Education Program category student learning outcomes as applicable. 8. Type of each graded course component (e.g. exams, quizzes, homework, papers, presentations, participation in discussion, blogs, attendance) with the relative weight and the identification of student learning outcomes measured by each component. Approximate dates should be included. 9. Final exam date and time and a link to the final exam policy. If a common final exam is to be given, date, time, and location should be announced as soon as the common exam is officially scheduled. 10. Special outside-of-class requirements as applicable (e.g. field trips, performances, service learning, exams outside of regular class time). 11. Attendance requirements and penalties for non-attendance, if any. [2] 12. Policy on late and make-up work. 13. Statement on participation by students with **disabilities**. 14. Supplemental course materials as applicable. 15. **Policies related to teaching and learning** 16. (Includes Student Conduct Code, Teaching and Learning, Academic Integrity, Final Exams, Excused

Absence, Appropriate Use of Class Notes). [1] A university course that is offered to an individual student is designated by one of the following course numbers: xx91 (Independent Study), xx92 (Directed Readings), xx93 (Directed Study), xx94 (Research) and xx97 (Internship). The instructor of any of these courses must provide in writing the number of credits, nature of the work to be accomplished, time expectations, the number of periodic meetings between the student and faculty member and Item 15 above. In addition, appropriate information from the list above should be included in the written agreement.

[2] See also the Excused Absence Policy listed in Item 15.

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Syllabi, Recommended Policy Statements for

The following academic policies relate to specific aspects of teaching and learning. In addition to including a reference to these policies as part of the syllabus, instructors are encouraged to discuss elements of the policies particularly applicable to their courses.

Instructors may:

- *Copy the exact language provided below,*
or
- *Include references to the policies,*
or
- *Include statements on the following policies in the syllabus.*

Student Conduct

Code:

Appropriate classroom conduct promotes an environment of academic achievement and integrity. Disruptive classroom behavior that substantially or repeatedly interrupts either the instructor's ability to teach, or student learning, is prohibited. Student are expected adhere to Board of Regents Policy: *Student Conduct Code*

Teaching & Learning: Instructor and Student Responsibilities:

UMD is committed to providing a positive, safe, and inclusive place for all who study and work here. Instructors and students have mutual responsibility to insure that the environment in all of these settings supports teaching and learning, is respectful of the rights and freedoms of all members, and promotes a civil and open exchange of ideas. To reference the full policy please see:

<http://www.d.umn.edu/vcaa/TeachingLearning.html>

Academic Integrity:

Academic dishonesty tarnishes UMD's reputation and discredits the accomplishments of students. Academic dishonesty is regarded as a serious offense by all members of the academic community. UMD's Student Academic Integrity Policy can be found at:<http://www.d.umn.edu/vcaa/StudentAcademicIntegrity.html>

Final Exams:

All 1xxx-5xxx courses offered for undergraduate credit should include a final graded component or end of term evaluation that assesses the level of student achievement of one or more course objectives. All final graded components are to be administered or due at the time and place according to the final exam schedule and not during the last week of class. To reference the full policy please see: <http://www.d.umn.edu/vcaa/FinalExams.html>

Excused Absences:

Students are expected to attend all scheduled class meetings. It is the responsibility of students to plan their schedules to avoid excessive conflict with course requirements. However, there are legitimate and verifiable circumstances that lead to excused student absence from the classroom. These are subpoenas, jury duty, military duty, religious observances, illness, bereavement for immediate family, and NCAA varsity intercollegiate athletics. For complete information, please see: <http://www.d.umn.edu/vcaa/ExcusedAbsence.html>

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Appropriate Student Use of Class Notes and Course

Materials:

Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. For additional information, please see: <http://www.d.umn.edu/vcaa/ClassNotesAppropriateUseof.html>

Students with Disabilities

It is the policy and practice of the University of Minnesota Duluth to create inclusive learning environments for all students, including students with disabilities. If there are aspects of this course that result in barriers to your inclusion or your ability to meet course requirements such as time limited exams, inaccessible web content, or the use of non-captioned videos, please notify the instructor as soon as possible. You are also encouraged to contact the Office of Disability Resources to discuss and arrange reasonable accommodations. Call 218-726-6130 or visit the Disability Resources web site at <https://umd-general.umn.edu/disability-resources> for more information.

Teaching and Learning: Instructor and Student Responsibilities

Effective: **January 3, 2011**

Last Updated: **Approved by EPC on April 14, 2010; approved by Campus Assembly November 9, 2010; revised by the Teaching & Learning Committee March 12, 2014; approved by EVCAA**

May 6, 2014; revised by the Teaching & Learning Committee November 19, 2014

Policy Owner: **Academic
Affairs**

UMD is committed to providing a positive, safe, and inclusive place for all who study and work here. A central mission of the university is to educate students through the offering of courses and programs leading to the conferral of degrees. Teaching and learning at the university take place in a variety of educational settings including on-campus lecture halls and classrooms, laboratories, field sites, and online. Instructors and students have mutual responsibility to insure that the environment in all of these settings supports teaching and learning, is respectful of the rights and freedoms of all members, and promotes a civil and open exchange of ideas. Making hostile, threatening, discriminatory or disparaging remarks toward or about the instructor, other members of the class or groups of people will not be tolerated.

I. Instructor Responsibilities

A. Provide a respectful teaching and learning environment.

Instructors are responsible for establishing and maintaining a civil and productive learning environment. To this end, instructors should articulate classroom behavior expectations at the beginning of the term and reinforce them as necessary. Instructors are expected to take appropriate and immediate steps to curtail disruptive classroom behavior. Such steps may include speaking to the offending student, asking the offending student to leave the classroom, or calling 911. A guide to help instructors respond to behavioral disruptions is located under **Faculty Resources**.

B. Deliver a course that is consistent with the course proposal including the course description, content, objectives, and level.

C. Provide information about courses

1. Instructors are responsible for providing accurate and timely information about their courses to enrolled and prospective students and to the university community.
2. Instructors must provide a course syllabus to enrolled students during the first week of classes. This syllabus may be in written or electronic form and should contain information that students need to know in order to complete the course to the best of their abilities. The *Syllabus Policy* describes

the required and recommended content of a syllabus (for example, course description and objectives, academic and conduct expectations, attendance policy, special attendance requirements, university policies related to teaching and learning).

3. The instructor must inform the class in a timely manner if changes to the syllabus information are made.

4. Instructors are encouraged to update the class URL to help students make decisions about course registration.

D. Provide students with access to and feedback on their work

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1. To help students achieve the course objectives to the best of their abilities, instructors are responsible for regularly evaluating student work, returning student work with clear and constructive feedback, and clarifying this feedback as needed. So that the student can benefit from this feedback, evaluations should be communicated to the student promptly.

2. Instructors are required to provide written feedback to their students by the end of the eighth week to enable students to assess their progress in the course prior to the deadline for withdrawing from the course at the end of the tenth week of the term.

3. Instructors are required to provide Mid-Term Grade Alerts to students in their 1xxx- and 2xxx-level courses who are performing at the D, F, or N level. Instructors are encouraged to provide Mid-Term Grade Alerts for students in other courses as well. The Mid-Term Grade Alert website is open from the beginning of the sixth week of the semester through the end of the eighth week of the semester. Instructors may work with the Office of the Registrar for earlier or additional mid-term grade rosters. Instructors are encouraged to provide Mid-Term Grade Alerts as early in this period as possible.

4. Instructors must turn in grades within three business days after the final examination.

E. Comply with FERPA data privacy regulations

1. Instructors must be knowledgeable about and comply with regulations governing privacy of student information (FERPA).

http://privacy.ahc.umn.edu/pdf/real_ferpa.pdf

2. Instructors are responsible for maintaining security of student work including examinations both before and after exams are given.

F. Observe scheduled class times

Instructors are expected to meet their classes at the scheduled times, to be prepared for all class sessions, and to start and end classes at the scheduled times. When instructors know in advance that they will be unable to attend particular class sessions, they are responsible for working with their academic unit to make appropriate alternate arrangements. Instructors should notify their students when unanticipated illness or emergencies prevent them from conducting class (e.g. email, classroom notice).

G. Schedule and observe office hours and appointment times

Instructors shall post a reasonable number of office hours per week at a time convenient for students and shall be available during such hours for the purposes of consultation with students.

H. Report scholastic dishonesty

If a faculty member decides to take action and impose a sanction that affects a student's grade, the violation must be reported to the UMD Office of Student and Community Standards (<http://www.d.umn.edu/conduct/>) responsible for investigating and adjudicating incidents of scholastic dishonesty.

I. Administer student evaluation according to UMD procedures

Instructors are required to administer summative student evaluations in their courses according to UMD Procedures (<http://www.d.umn.edu/vcaa/evals/prot.html>).

J. Adhere to the UMD Policy on Final Examinations: <http://www.d.umn.edu/vcaa/FinalExams.html>

II. Student

Responsibilities

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A. Meet course prerequisites

Students are responsible for meeting the course prerequisites prior to registering for a course unless they have permission from the instructor.

B. Be Informed of and meet all course requirements

Students are responsible for the information contained in the syllabus and for meeting all course requirements, observing all deadlines, examination times, and other course procedures.

C. Attend class

Students are expected to attend all meetings of their courses.

Students must attend the first class meeting of every course (e.g. lecture, lab, discussion) in which they are registered unless (a) they obtain approval from the instructor before the first meeting or (b) they provide notice to the instructor they must miss class because of a recognized religious holiday. Otherwise, they may lose their places in class to other students.

See *Excused Absence Policy*:

<http://www.d.umn.edu/vcaa/ExcusedAbsence.html>

Students are responsible for being on time and prepared for all class sessions.

D. Be informed of and abide by UM Board of Regents (UM BOR) and UMD policies

1. Students are responsible for conducting themselves in a manner that (a) is respectful of the instructor and other students in the classroom; (b) is civil in language, tone and behavior; and (c) is receptive to ideas and other points of view. The UM Board of Regents Student Conduct Code describes the behavior expectations of students and applies to all UM students: "Disruptive

classroom conduct means engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning."

Section V, Subdivision Two of the UM Student Conduct Code

http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf

2. Students are required to do their own assigned work. If it is determined that a student has violated either of the following policies:

UM BOR Student Conduct Code: Scholastic Dishonesty

Section III
Subd 1

UMD Student Academic Integrity Policy

he or she may be given an "F" or an "N" for the assigned work and /or the course, and may face additional sanctions from the University.

E. Other

1. Students are responsible for seeking academic help in a timely fashion.
2. Students who need disability accommodations are responsible for working first with UMD Disability Resources and then with the instructor at the beginning of the course.

3. Students who have concerns or complaints about a course should first meet with the instructor to

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articulate their dissatisfaction with and desired improvement in the course. If the issues are not resolved, they should meet with the department head. In unusual circumstances, the department head may be the first level of recourse.

4. Guests may not be brought to class without prior permission from the instructor.

Transfer of Undergraduate Credit

Effective: ***September 1, 2011***

Last Updated: ***Approved by EPC March 30, 2011; approved by Campus Assembly April 12, 2011; revision approved by Teaching & Learning committee 11-5-14; approved by EVCAA 12-15-14***

Policy Owner: ***Academic Affairs***

1. Institutions from which credit is transferred must have regional accreditation in order for their courses to be considered for transfer to the University.
2. Courses that are eligible for acceptance in transfer to UMD may transfer as direct course equivalent credit (e.g., Hist 1304), elective credit (e.g., Hist 1xxx), or undesignated elective credit (e.g., Tran 1xxx). Transferred college-level credits that do not have direct course equivalents at UMD may count toward liberal education requirements or toward total credits.
3. UMD does not accept remedial or non-credit-bearing courses for transfer.
4. Academic departments may determine whether transfer electives satisfy specific program curricular requirements. The applicability of transfer credit toward the Liberal Education Program is determined by the Associate Vice Chancellor for Undergraduate Education.
5. The University will accept transfer courses with a D grade or higher.
6. Students may initiate a Transfer Course Evaluation (TCE) request for any course not listed in Transferology..
7. Students who transfer to the University with an Associate of Arts (AA) degree or who have completed the Minnesota Transfer Curriculum (MnTC) will have fulfilled the University's entire Liberal Education Program requirement. Courses at the transfer institution used to complete the AA or MnTC do not necessarily transfer as equivalent UMD courses.

Undergraduate Admission

Effective: ***January 3,
2011***

Last Updated: ***Approved by EPC October 13, 2010; approved by Campus Assembly
November 9, 2010***

Policy Owner: ***Academic
Affairs***

1. Each college is responsible for proposing to the Admissions Office enrollment targets for the admission of New High School and New Advanced Standing students. These proposed targets are subject to the review and approval of the Executive Vice Chancellor for Academic Affairs. This effort is to be coordinated by the Director of the Office of Admissions.

2. The Educational Policy Committee will approve the criteria and standards that are to be used by the

Admissions Office in admitting both New High School and New Advanced Standing students to the college, including college-specific criteria. These standards and criteria are subject to the review and approval of the Executive Vice Chancellor for Academic Affairs.

3. Conditional admission:

Students may be admitted conditionally under a contract that communicates both the matriculation and the graduation conditions that are the basis for admission. Such policies apply to students new to the University, not to those transferring within the University.

a. Conditional admission to enroll (begin taking courses toward a degree)

Students are admitted subject to conditions (e.g., that they graduate from high school and others that may be imposed by the University). A student who does not meet the conditions required for admission will have his or her admission revoked.

b. Conditional admission to graduate

Under circumstances established by the University and the student's admitting college, a student may be permitted to matriculate (or transfer to the University), subject to certain conditions that must be satisfied before the student will be permitted to graduate (e.g., that any deficiencies in satisfying high school preparation requirements are made up). Such graduation conditions are in addition to degree requirements and might not count toward required credits to earn a degree.

DEFINITIONS

Matriculate

The process by which a student accepts the University's offer for admission and indicates that he or she intends to enroll.

New Advanced Standing (NAS)

Students who have graduated from high school who have previously matriculated at another post-secondary education institution

**New High School
(NHS)**

Students who have graduated from high school but have not previously matriculated to another

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post-secondary institution. (They may have earned college credits while they were enrolled in high school).

Undergraduate Degree Requirements

Effective: **January 3, 2011**

Last Updated: **Approved by TLC March 15, 2017; approved by EVCAA May 5, 2017**

Policy Owner: **Academic Affairs**

The Board of Regents, on recommendation of the faculty, grants degrees from the University of Minnesota. Requirements for an undergraduate degree from University of Minnesota Duluth include the following:

1. Students must meet all course and credit requirements of the departments and colleges or schools in which they are enrolled including an advanced writing course. Students seeking two degrees must fulfill the requirements of both degrees. However, two degrees cannot be awarded for the same major.
2. Students must complete all requirements of the Liberal Education Program.
3. Students must complete a minimum of 120 semester credits.
4. At least 30 of the last 60 degree credits earned immediately before graduation must be awarded by UMD.
5. Students must complete at least half of their courses at the 3xxx-level and higher at UMD. Study abroad credits earned through programs approved by International Programs and Services may be used to fulfill this requirement.
6. For a minor to be awarded from UMD students must take at least three upper division credits (3xxx or higher) in their minor field from UMD. Application of transfer credits toward the minor are subject to department approval.
7. For an undergraduate certificate to be awarded from UMD students must take at least three upper division credits (3xxx or higher) from the certificate program from UMD. If the program does not

require upper division credits students must take at least one course from the certificate program from UMD.

8. Students must complete at least half of upper-division major work (3xxx courses or higher) from UMD. Application of transfer credits toward the major are subject to departmental approval.

9. The minimum cumulative UM GPA required for graduation will be 2.00 and will include only University of Minnesota coursework. A minimum UM GPA of 2.00 is required in each UMD undergraduate major and minor. No academic unit may impose higher grade point standards to graduate.

10. Diploma, transcripts, and certification will be withheld until all financial obligations to the University have been met.

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Withdrawal from the University

Effective: **June 24, 2011**

Last Updated: **June 24, 2011; revised and approved by Teaching & Learning committee 4-8-15**

Policy Owner: **Academic Affairs**

By registering for classes, students enter into a contract to pay for all tuition and fees. Students are responsible for all transactions on their academic records.

To withdraw from all academic coursework at the University, a student must officially cancel all courses through the last day of the tenth week of the semester. After that date, students who believe they have extenuating circumstances may submit a petition to the collegiate Advising & Academic Services office to withdraw from the University.

Students Called to Military Duty

Students who are called to active military duty may withdraw from UMD. The University works with students to remove them from classes and resolve tuition and other financial issues. Students must submit a copy of their military orders and will be asked to complete a retroactive tuition petition. As a general rule, the petition is approved for a 100 percent refund unless there are negative financial aid implications for the student. Students are advised about what would be the most beneficial for their situation.

Tuition Refund for Withdrawal

Refunds for withdrawal from the university are the same as for individual course withdrawals: 100 percent tuition and fee refund on or before the end of the first week of the semester; 75 percent on or before the end of the second week; 50 percent on or before the end of third week; 25 percent on or before the end of the fourth week. No refunds are given after the fourth week. Courses that are shorter in length than the full semester have an abbreviated refund schedule. Withdrawing from courses can have financial and academic implications, possibly affecting billing, financial aid, and VA benefits, etc. The withdrawal could result in debt to the University, government or both.

After the fourth week, refunds beyond the published schedule will be granted by appeal only. A Tuition Refund Appeal with relevant documentation should be submitted to One Stop Student Services.

Medical Withdrawal

Appeal for medical withdrawal must include documentation from a licensed medical or mental health professional indicating:

- Date of onset of illness
- Date at which initial treatment was sought

- Diagnosis
- Dates of treatment service
- Severity of illness

**Return after
Withdrawal**

Students who petition for medical withdrawal may be asked to present proof of treatment before subsequent registration.

5
4