

# INTERDISCIPLINARY STUDIES

Academic Programs	Credits
MA: Communication Interdisciplinary Studies (see Communication Department)	37-45
MS: Mathematics and Physical Science	32-40

An increasing number of careers demand that students have integrated, advanced skills and expertise in more than one field of study. Careers in education, leadership, management, and religion require a holistic grasp on philosophical, ethical, and pedagogical interrelationships. The interdisciplinary programs provide a framework where faculty and students can engage in scholarly pursuits which require such interrelationships.

## Graduate Programs

The College of Arts and Sciences (in cooperation with other schools) offers graduate programs leading to the MA: Communication Interdisciplinary Studies (see Communication section for program description), and MS: Mathematics and Physical Science.

### MS: Mathematics and Physical Science

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The Master of Science in Mathematics and Physical Science is designed for students who wish to acquire a breadth of knowledge which cannot be achieved within any one discipline among chemistry, mathematics, and physics. Such a degree may be useful for secondary or middle-school teachers who teach mathematics and science subjects, but who do not desire a traditional MAT program; for those who wish to develop skills in areas of overlap in these disciplines; for those who wish to study the inter-relationships among the disciplines; and for those who wish further preparation for careers in industry or government.

#### SPECIFIC ADMISSION REQUIREMENTS

- Students admitted into the MS: Mathematics and Physical Science program must hold a baccalaureate degree with a major in one of the above areas with a cumulative GPA of at least 2.60 (4.00 system) and have earned credit or demonstrated proficiency in the following prerequisites: CHEM131, 132; CPTR125 (FORTRAN) or CPTR151; MATH141, 142, 240, 286; PHYS241, 242, 271, 272. A student may be admitted with deficiencies in the above courses, but this exception requires the student to take additional credits beyond the minimum 32 credits required.
- Acceptance is contingent on the availability of faculty and facilities, as determined by the program coordinator upon review of the applicant's goals and proposed area(s) of emphasis.

#### MS DEGREE REQUIREMENTS

- Compliance with all standards as given in the *Graduate Degree Academic Information* section of the bulletin.
- Completion of a curriculum consisting of 32-40 credits approved by a supervising committee.
- Passing a comprehensive examination over two areas from among Mathematics, Physics, and Chemistry.

#### Core Courses—15

MATH405(3), CHEM431, 432 (6)  
and CHEM441, 442 (2) or PHYS411(2.5)  
and PHYS430 (2.5) and PHYS481 (3),  
IDSC526 (2), IDSC698 (1-3) may be repeated up to 6 credits,  
IDSC575 (1), undergraduate prerequisites\* (0-8), and other  
courses recommended by the student's committee.

\*Up to 8 credits selected from among the prerequisites listed in the specific admission requirements are added to the minimum 32 credits for the degree.

#### Total MS degree credits required—32-40

- The student must include at least 12 credits in each of the two disciplines selected for the degree.
- A student must complete a minimum of 16 credits in courses numbered 500 and above.

#### PROCEDURES

- Upon acceptance, the student consults with the area coordinator and a graduate advisor to develop a plan of study. Any deficiencies, prerequisites, research, language tools, transfer credits, and residency are discussed to establish the status of the student.
- The student then submits a plan of study to the area coordinator for approval and identifies three faculty members to serve as a supervisory committee. The approved plan of study becomes the curriculum the student will follow to complete the requirements for the degree. Any changes in the plan of study must therefore be approved by the graduate advisor, the area coordinator and the committee.
- All projects must be submitted to the supervising committee at least two months prior to graduation. The area coordinator recommends final project approval after the consent of the committee has been obtained.
- When 50% of all course work has been completed, the student initiates advancement to degree candidacy by submitting the required forms to the area coordinator. When the area coordinator approves the student for graduation, a recommendation is sent to the Records Office and to the Dean of Graduate Studies.
- Graduation procedures and degree conferral are described in detail on pp. 28–29.

## Courses

See inside front cover for symbol code.

Details of departmental course offerings and course descriptions may be obtained from the department(s) involved. A list of enrollment and graduation procedures is available at the offices of the area coordinators and the Graduate Program Coordinator for the College of Arts and Sciences.

### GENERAL AND INTERDISCIPLINARY STUDIES

#### IDSC116 (1-4) *Academic Tutorial Support*

A tutorial application of the principles of academic success. Includes one-to-one tutoring, and/or group-learning experiences. Could also include academic or cognitive evaluations when necessary. Repeat-able to 8 credits. Consent of the instructor required. Grade S/U.

#### IDSC200 (3) *Christ in Music and Art*

An investigation of religious themes in art and music inspired by the life of Christ. Also discussed are the Christian and the aesthetic experience, as well as principles for understanding and evaluating art and music from the Christian perspective. Not applicable toward a major or minor in Music or Art.

#### IDSC211 \$ (3) *Creativity and the Arts*

Explores the creative process as it relates to the theory and practice and to selected works of literature, music, and the visual arts. Includes approaches to the reading and critical analysis of verbal, visual, and aural texts. Explores the relationship between creativity and Christian values. Emphasis on group projects. Includes a lab.

#### IDSC237 (3) *The Individual, State, and Marketplace*

Politics and economics examined through classic and contemporary sources and Christian and ideological perspectives. What is the good life? What is the purpose of politics, and the best form of government? What are the implications for efficiency and equity of economic systems? Should government be responsible for the well-being of the individual and the economy?

#### IDSC250 (1) *Career and Life Planning*

Techniques of career and life planning. Topics such as the relationship between religious commitment and career choice, decision-making techniques, and individualized exploration of specific career areas are considered. Helps the student choose a career and develop skills for decision making throughout life.

#### IDSC280, 380 (.5-1) *Cooperative Education in \_\_\_\_\_(subject area)*

Supervised work experience with a cooperating industry, agency, or institution. The student is supervised by his/her department. At least 175 hours of work required per credit. Repeatable twice. Graded S/U. Prerequisites: Sophomore standing or above and permission of the department chair. Students must apply and be accepted one semester in advance of their planned cooperative education experiences.

#### IDSC294, 394 (3-15)

*Off-Campus Study in \_\_\_\_\_*  
See advisor for details.

#### IDSC296 (0) *Student Missionary/Taskforce Experience*

#### IDSC298 (variable) *PLA: (Special Topic)*

PLA (Prior Learning Assessment) is a process which validates learning experiences that have occurred outside traditional college/university academic programs. A portfolio of evidence for demonstrating experience and competency justifies and determines the amount of credit granted. Repeatable with different topics.

#### IDSC310 (3) *Introduction to Western Arts*

The stylistic character and cultural climate of the important epochs of Western civilization; the relationship of painting, sculpture, architecture, and music. Discussion periods and lectures illustrated with colored slides, film strips, and recordings.

#### IDSC321, 322 \$ (3, 3) *Scientific Inquiry I, II*

Concepts from physics, chemistry, and biology organized in a sequence involving lab experimentation in the scientific method. Topics include philosophical issues of origins and cosmology, ethical issues, and the environment. Risk vs. Benefit analysis is used in addressing modern technologies. Prerequisites: MATH145, INSF110 or equivalent.

#### IDSC340 (3) *Environmental Policy*

A survey of historic and current environmental issues, pending and existing legislation on the state and federal level, federal land management offices and their differing missions, and competing and non-competing demands from bio-diversity to water usage. Prerequisites: BIOL208 or consent of the instructor.

#### IDSC401, 402 (1, 1) *Environmental Science Seminar*

Discussion and presentations dealing with current or historic topics in environmental science.

#### IDSC440 (1-4) *Topics: \_\_\_\_\_*

Designed to meet the needs of students with various interests in environmental science. Repeatable in different areas.

#### IDSC495 (1-3) *Independent Study/Readings*

Directed study or readings under the guidance of an instructor. Repeatable. Registration is by permission of the dean in consultation with an instructor.

#### IDSC498 (variable) *PLA (Special Topic)*

PLA (Prior Learning Assessment) is a process which validates learning experiences that have occurred outside traditional college/university academic programs. A portfolio of evidence for demonstrating experience and competency justifies and determines the amount of credit granted. Repeatable with different topics.

<b>IDSC499</b>	<b>V (.5)</b>	<b>IDSC665</b>	<b>\$ (0)</b>
<b><i>PLA Portfolio Development</i></b>		<b><i>Preparation for Comprehensive Examinations</i></b>	
AU/HSI course. The development of a portfolio of evidence to present for Prior Learning Assessment.			
<b>IDSC526</b>	<b>(2)</b>	<b>IDSC680</b>	<b>(2)</b>
<b><i>Christian Faith and the Sciences</i></b>		<b><i>Field Practicum</i></b>	
Discussion of science and epistemology in the context of Christian faith, scientific model building, the church-science interface, and ethical considerations. An interdisciplinary course recommended for all graduate students in the sciences.		Students integrate interdisciplinary course content and theory into practice during a (300-hour) field practicum coordinated with each student's research project and/or concentration (e.g., Food Security) that is the concluding requirement for the concentration. 260 hours may be done with the student's primary employer, but all students must complete one week (40 hours) in an external organization. Students must submit a practicum proposal indicating approval from a sponsoring organization and learning objectives. Upon completion, the student submits a practicum portfolio. Prerequisite: 2 courses in concentration.	
<b>IDSC550</b>	<b>(1-3)</b>	<b>IDSC689</b>	<b>(1-3)</b>
<b><i>Certification Seminar</i></b>		<b><i>Seminar</i></b>	
A web-based seminar providing an orientation to a topic associated with graduate certification, including an introduction to the most important sources, an overview of salient issues and problems, an inventory of baseline competencies, and a survey of professional opportunities.		Projects, reports and discussions on various subjects corresponding to faculty specialization. Repeatable with different subject matter. Needed to accommodate new topics under different concentrations.	
<b>IDSC575</b>	<b>(1)</b>	<b>IDSC690</b>	<b>(1-3)</b>
<b><i>Mathematics and Science Seminar</i></b>		<b><i>Independent Study</i></b>	
Current research topics in mathematics and physical sciences. Attendance at 12 hours of research presentations, a paper, and a presentation of a current research topic.		Individualized reading or research in a specified area under the guidance of an instructor. Repeatable to 6 credits.	
<b>IDSC597</b>	<b>(1)</b>	<b>IDSC698</b>	<b>(1-3)</b>
<b><i>Portfolio</i></b>		<b><i>Project</i></b>	
An organized collection of educational and professional accomplishments to date is produced. This will include basic personal and background information, a profile of the student's organization, outstanding academic work, and other products acquired during his/her time in the program.			
<b>IDSC640</b>	<b>(1-3)</b>	<b>IDSC698-1</b>	<b>(1)</b>
<b><i>Topics: _____</i></b>		<b><i>Project I</i></b>	
		A project typically carried out by the Master's degree candidates by means of which the student's ability to synthesize and summarize knowledge pertaining to a given empirical domain is demonstrated. A typical end product might be an "agency profile" or a "fact sheet" about a certain process or problem.	
<b>IDSC640</b>	<b>(1-3)</b>	<b>IDSC698-2</b>	<b>(2)</b>
<b><i>Topics: Professional Seminar</i></b>		<b><i>Project II</i></b>	
A web-based seminar providing an orientation to the topic making up the certificate concentration, including an introduction to the most important sources of information about the topic; an overview of salient issues and problems related to the topic; an orientation to communities of researchers and professionals working on the topic; an inventory of baseline competencies of persons professing expertise on the topic; and a survey of opportunities for professional involvement related to the concentration.		A research project typically carried out by a Master's degree candidate in which the student's mastery of the research process is demonstrated. A typical end product might be a community assessment study, a program evaluation study, a best practice benchmarking study, or a problem-solving study. Such projects are normally carried out in lieu of a Master's thesis.	
<b>IDSC640</b>	<b>(2)</b>	<b>IDSC699</b>	<b>(4)</b>
<b><i>Topics: Ethics in Development</i></b>		<b><i>Master Thesis</i></b>	
An ethical framework for the understanding of social transformation. Ethical paradigms are explored, as well as historical examples of how development interventions have generated social change. Focus on contemporary approaches to development, revolution and liberation.			
<b>IDSC650</b>	<b>\$ (0)</b>		
<b><i>Project Continuation</i></b>			
<b>IDSC655</b>	<b>\$ (0)</b>		
<b><i>Program Continuation</i></b>			
<b>IDSC660</b>	<b>\$ (0)</b>		
<b><i>Thesis Continuation</i></b>			