MATHEMATICS & SCIENCE

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Faculty
Robert E. Kingman, Physics, *Coordinator*
David E. Alonso, Chemistry
Gordon J. Atkins, Biology
Gary W. Burdick, Physics
Bill Chobotar, Biology
H. Thomas Goodwin, Biology
James L. Hayward, Biology
Shandelle M. Henson, Mathematics
Joon Hyuk Kang, Mathematics
Mickey D. Kutzner, Physics
Margarita C. K. Mattingly, Physics
David N. Mbungu, Biology
Getahun Merga, Chemistry
Robert C. Moore, Mathematics
Desmond H. Murray, Chemistry
Marlene N. Murray, Biology
D. David Nowack, Chemistry
Yun Myung Oh, Mathematics
S. Clark Rowland, Physics
David A. Steen, Biology
John F. Stout, Biology
Tiffany Z. Summerscales, Physics
Stephen C. Thorman, Physics, Computer Science
Lynelle M. Weldon, Mathematics
Dennis W. Woodland, Biology
Robert E. Zdor, Biology

MS: Mathematics and Science

The Master of Science: Mathematics and Science is designed for students who wish to acquire a breadth of knowledge which cannot be achieved within any one discipline among mathematics, biology, chemistry 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 interrelationships among the disciplines; and for those who wish further preparation for careers in industry or government.

In addition to the general requirements for admission to and enrollment in graduate degree programs outlined in this bulletin, students must meet departmental requirements.

Admission Requirements

- A bachelor's degree with a major in Mathematics, Biology, Chemistry, or Physics, and a minimum GPA of 3.00 (B) in mathematics and science courses.
- Completed the GRE General Exam for admission to regular student status. Completion of the GRE Subject Exam in one of the four areas of Mathematics, Biology, Chemistry or Physics is recommended.
- Earned credit or demonstrated proficiency in the following prerequisites: CPTR125 or CPTR151; MATH141, 142, 240, 286; and two out of three year-long laboratory science courses: BIOL165, 166, CHEM131, 132 and 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.

MS Degree Requirements

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

Core Courses
MATH405 (3), MSCI526 (2–3), MSCI575 (1), MSCI670 (0), MSCI698 (1–4), undergraduate prerequisites* (0–8), and other courses recommended by the student's committee.

Disciplinary Core
For students choosing the Chemistry and/or Physics options:
CHEM431, 432 (6) *and* CHEM441, 442 (2)
or PHYS411 (2.5) *and* PHYS430 (2.5) *and* PHYS481 (3),

**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.

Courses (Credits)

See Biology for BIOL course descriptions; Chemistry and Biochemistry for CHEM and BCHM; Mathematics for MATH; Physics for PHYS.

MSCI526 **(2–3)**
Christian Faith and the Sciences
Discussion of science and epistemology in the context of Christian faith, scientific model building, the church-science interface, and ethical considerations.

MSCI575 **(1)**
Mathematics and Science Seminar
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.

MSCI650 **$ (0)**
Project Continuation
Student may register for this title while clearing deferred grade (DG) and/or incomplete (I) courses with advisor approval only. Registration for this title indicates full-time status.

MSCI655 **$ (0)**
Program Continuation
Students may register for this non-credit continuation course

to maintain active status. For additional information on active status, please refer to p. 51 in the bulletin. Registration does not indicate full-time status.

MSCI665 **$ (0)**
Preparation for Comprehensive Examinations
Advisor approval required. Registration for this title indicates full-time status.

MSCI670 **(0)**
Comprehensive Exams

MSCI698 **(1–4)**
Research Project
Repeatable to 4 credits.

Procedures

1. Upon acceptance, the student consults with the program 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.
2. The student then submits a plan of study to the program 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 program coordinator and the committee.
3. All projects must be submitted to the supervising committee at least two months prior to graduation. The student will be expected to give an oral presentation and an oral defense of the project. The program coordinator recommends final project approval after the consent of the committee has been obtained.
4. Comprehensive exams in the two areas of concentration must be completed at least one month prior to graduation.
5. When 50% of all course work has been completed, the student initiates advancement to degree candidacy by submitting the required forms to the program coordinator. When the program coordinator approves the student for graduation, a recommendation is sent to the Records Office and to the Dean of Graduate Studies.
6. Graduation procedures and degree conferral as described in this bulletin.

MUSIC

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Faculty
Carlos A. Flores, *Chair*
Lilianne Doukhan
Claudio Gonzalez
Julia S. Lindsay
Kenneth D. Logan
Alan F. Mitchell
Carla L. Trynchuk
Chi Yong Yun
Stephen P. Zork

Academic Programs	Credits
BA: Music	46
With BBA	115
BMus (Bachelor of Music)	
Music Education	82–86
Teacher Certification Requirements	35
Music Performance	91
Minor in Music	26
MA: Music	32
MA: Music Ministry	35
MMus (Master of Music)	
Music Education	35
Performance	34

Mission

To mentor students in artistic, intellectual, and character development. Faculty of the Department of Music are committed to providing a vibrant musical and learning environment to nurture artistic and creative growth in all students of music, to encourage and guide students through dynamic interaction in classroom and practical experiences as they mature into tomorrow's music professionals, and to mentor students in responsible use of their talents for service to Christ and to humanity.

Bachelor of Music curricula provide a comprehensive exposure to and experience with the performance, history, and theory of music. Students receive hands-on supervised teaching experience in studio or classroom teaching. Bachelor of Arts curricula are for students wishing to pursue concerted study in music within a liberal arts context.

Non-music majors may take courses in music or participate in music lessons or ensembles for credit or non-credit. See General Education section and course descriptions below for further clarification.

The Andrews University Department of Music has been a member of the National Association of Schools of Music since 1964. Music majors may choose to join the student chapter of Music Educators National Conference.