Mathematics and Statistics Mathematics (MATH)

Mathematics is among the oldest disciplines. Throughout history, mathematics has spanned the spectrum from pure to applied areas. The ancient Greek mathematicians were interested in problems that ranged from properties of numbers to applications of mathematics to music and astronomy. The department of mathematics and statistics fulfills its mission by offering a broad and representative collection of courses to give students the ability to select, with their advisers, a program that fits their needs and goals. The department of mathematics and statistics offers bachelor's (BA and BS), master's (MS), and doctoral (PhD) degrees.

Note: For ease of description, certain courses in mathematics and statistics are categorized in the following groups (the courses in Group R are required of all majors):

- Group R: MATH 415, 511, 547, 551, 555
- Group A: MATH 513, 525, 615, 621, 690, 720, 725
- Group B: STAT 460, 571, 572, 574, 576, 761, 762, 763, 771, 772, 775, 776
- Group C: MATH 530, 545, 548, 553, 640, 655, 657, 714, 751, 753, 755,

MAJOR:

For the **Bachelor of Arts (BA) degree with a major in mathematics**, students must complete all courses in Group R plus MATH 531 and two additional courses from those listed in Groups A, B, and C. MATH 451 is recommended.

For the **Bachelor of Science (BS) degree in mathematics**, students must complete all courses in Group R and one each from Groups A, B, and C. In addition, the BS candidate must complete two additional courses from those listed in Groups B and/or C. MATH 451 is recommended

For the **Bachelor of Science (BS) degree in mathematics with emphasis in statistics**, students must complete all courses in Group R, one course in Group A, and one course in Group C. In addition, the BS candidate must complete 12 additional hours of courses in Group B, which must include either STAT 571–572 or STAT 771–772, plus one more course from Groups B or C. Students under this option may select statistics courses from other departments with the approval of the department of mathematics and statistics.

For the **Bachelor of Science (BS) degree with emphasis in computing**, students must complete all courses in Group R. Students also must complete MATH 451 and an additional high-level programming language. In addition, the BS candidate must complete CS 300 and 320, plus five courses selected from MATH, 331, 553, 657, 690, 751; STAT 774; CS 312, 410, 440, 510, 540, and 560. At least three of the five additional courses must be in computer science (CS).

For students who are contemplating graduate work, it is highly recommended that they include MATH 513, 547, and 640 in their program, along with courses in one or more of French, German, or Russian.

Students majoring in mathematics should consult closely with their mathematics advisers on any of these programs.

Fast Track, Dual/Accelerated Bachelor's to Master's Program

The fast track, dual/accelerated bachelor's to master's program in mathematics and statistics is designed to prepare qualified students for graduate work in mathematics and statistics through a coordinated program

leading to both degrees. A student in the program will be allowed to enroll in courses for graduate credit while completing undergraduate degree requirements.

Prior to application for admission to the program, a student interested in the program and receiving the recommendation of at least one faculty member, will be assigned a fast track adviser and advisory committee. Typically, this should be done by the sophomore year, but may be done somewhat later. Being assigned a fast track adviser does not imply admission to the program.

To be considered for admission to the program, the following must be satisfied:

- 1. An undergraduate GPA of 3.000 overall and 3.500 in math and statistics courses;
- 2. Completion of at least 60 hours of undergraduate study, with at least 18 hours remaining for completion of the undergraduate degree;
- 3. Completion of MATH 415, 451 and 511, and either completion of or current enrollment in MATH 513 or 547; and
- 4. Positive recommendation from the student's fast track adviser.

The student should apply for admission during the semester prior to the first semester in which he or she intends to enroll in a course for graduate credit. Students admitted to the dual/accelerated program will be allowed to enroll in courses for graduate credit, including 800-level courses, prior to completing undergraduate degree requirements. At most 9 hours may be joint degree hours-hours taken for graduate credit at the 700-level (or above) that are also applied to the bachelor's degree. A course taken for joint credit must be so identified at the time of enrollment in that course.

After initial admission, continuation in the program requires a continuing WSU and undergraduate cumulative GPA of at least 3.000 and a GPA of at least 3.000 in courses taken for graduate credit. MATH 513 must be included in the undergraduate program of study for students in the dual/accelerated program. Otherwise, requirements for the BS or BA in mathematics and statistics are the same as for other students with a major in mathematics and statistics. Students admitted to the dual/accelerated program are expected to write a thesis as part of their master's degree program of study. A student who has previously been admitted to a graduate degree program at Wichita State may not be admitted to the dual/accelerated program.

Minor

For a minor in mathematics, students must complete the calculus sequence (242, 243, and 344) and take at least one additional course at a level of 400 or above approved by both the department of mathematics and statistics and the student's major. Students are required to take at least one upper-division course in residence. Students shall not be allowed credit towards a minor for coursework below 2.000.