Department/Academic Unit: Mathematics and Statistics   Degree Program: MSc

Degree Level Expectations, Learning Outcomes, Indicators of Achievement and the Program Requirements that Support the Learning Outcomes

Expectations (general descriptors from OCAV)	Learning Outcomes (program specific)** This degree is awarded to students who demonstrate…	Indicators of Achievement As evidenced by…	Relevant Courses and academic requirements (requirements that contribute to the achievement of learning outcomes and degree expectations)
Depth and breadth of knowledge	Learning outcome: Advanced graduate-level expertise in at least one subject area (chosen from Analysis, Algebra, Probability and Statistics, and Geometry and Topology) and basic knowledge in at least one other subject area.	Indicator: Performance in one or more core graduate-level courses (for advanced knowledge) and performance in introductory level graduate courses (for basic knowledge).	Advanced knowledge: MATH 844, 891, 892, 893, 894, 895, 896 Basic knowledge: MATH 800, 801, 802, 805, 806, 812, 813, 818, 825, 827, 830, 832, 834, 836, 837, 838, 843, 844, 872, 874, 877, 884, 891, 892, 893, 894, 895, 896, 901, 902, 903, 905, 912, 913, 915, 922, 923, 925, 932, 933, 935, 936, 937, 939, 942, 943, 945, 972, 973, 975 STAT 853, 854, 855, 856, 857, 862, 864, 865, 866, 867, 870, 871, 873, 886, 952, 953, 955, 962, 963, 965
Research and scholarship	Learning outcome: An ability to read and demonstrate an understanding of mathematical and/or statistical research literature.	Indicator: Report writing and presentations, either as a part of explicit research activity, a course, or a seminar.	MATH 800, MATH/STAT 898, MATH/STAT 899, STAT 888
Application of Knowledge	Learning outcome: The ability to assimilate mathematical and/or statistical knowledge beyond the mere repetition of knowledge acquired in courses. In addition, for applied mathematics and statistics, facility with the application area as well as how mathematics and/or statistics contributes to this application.	Indicators: (1) Written work in the form of a thesis or project report and (2) oral presentations in seminars and in thesis defence or project presentation.	MATH 800, MATH/STAT 898, MATH/STAT 899, STAT 888

Professional capacity/autonomy	Learning outcomes: (1) The ability to quickly learn new mathematical or statistical techniques and understand when these are applicable to a new problem or area of application. This learning should be done in an independent manner. (2) An understanding that students owe an obligation to the public at large when it comes to explaining the importance and relevance of mathematical and/or statistical research, both fundamental and applied.	Indicator: Independent work in thesis research and in seminars. The grasp by the student of the relevance of their work, the depth of their understanding, and their ability to put their work in context is assessed.	MATH 800, MATH/STAT 898, MATH/STAT 899, STAT 888
Communication Skills	Learning outcome: The ability to present their research in written and oral form using generally accepted professional practices and adhering to generally accepted standards of quality and clarity of presentation.	Indicators: (1) Oral presentation of a research paper and oral presentation of research and (2) Written presentation of research findings.	MATH 800, MATH/STAT 898, MATH/STAT 899, STAT 888
Awareness of limits of knowledge	Learning outcome: An awareness of how a student's research and levels of knowledge fit within what is already known and what is not yet known.	Indicators: (1) Final exams in advanced core courses, (2) summaries of research papers in seminars, and (3) presentation of research findings in the context of existing and future research.	MATH 844, 891, 892, 893, 894, 895, 896, 800, MATH/STAT 898, MATH/STAT 899, STAT 888
Ability to recall and reproduce proofs of basic results	Learning outcome: A high level of familiarity with the fundamental results of their field, and an ability to reproduce their proofs or sketches of their proofs without assistance.	Indicators: (1) Final exams in advanced core courses and (2) oral presentations of the thesis/project.	MATH 844, 891, 892, 893, 894, 895, 896, 800, MATH/STAT 898, MATH/STAT 899, STAT 888

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