



BISHOP'S UNIVERSITY

MATH 431: METRIC SPACES AND TOPOLOGY WINTER 2017

INSTRUCTOR: T. H. Jones
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When emailing, please including the course number in the subject line. Without this information, a response may be delayed.

WEBSITE: <http://cs.ubishops.ca/~thj>
LECTURES: MW 8:30–9:55, Nichols 116
OFFICE HOURS: M 14:30–16:00, F 09:30–11:00, or by appointment

REQUIRED TEXT: *Introduction to Metric & Topological Spaces*, 2nd edition, by Wilson A. Sutherland.
ISBN: 978-0-19-956308-1

DESCRIPTION: Sets, functions, images and preimages. Topological spaces, metric spaces. open and closed sets, accumulation points, continuous functions, homeomorphisms. Some topological properties, particularly connectedness and compactness.

GRADES: The final grade will be calculated using the scheme below.

Final Exam, three hours in duration 100 %¹

However, if at least 5 out of 6 assignments have a positive grade², and the test has been written, then the following change to the grading scheme is allowed, if it gives a higher grade:³

- Written Assignments, generally once every two weeks 25 %
- Test, 25 %
- Final Exam, three hours in duration 50 %

SYLLABUS: We will attempt cover Chapters 1–13, 15–17 of the text. A detailed tentative schedule is available on the course website.

¹This grading scheme is presented so as not to impede individual learning styles. There must be some evaluation of mastery of the material, and that is the final exam. All other evaluations are formative and should not be allowed to detrimentally affect the final grade.

²Assignment questions are graded as follows: Correct answer and presentation: 3, incorrect answer or presentation: 1, incorrect answer and presentation: 0, no attempt: -2. A score of 2 will be rarely given. A negative final score on an assignment will be recorded as 0

³Historic evidence from my courses has shown that doing the work is an excellent predictor of success, and so this alternative grading scheme is presented to encourage students to apply themselves throughout the term.

SRC NOTE:

Supporting your Success

Your academic performance is closely tied to your personal well-being and mental health. It is understood that university students encounter setbacks from time to time that can impact their academics. If you encounter difficulties and need assistance it is important to reach out and take advantage of the resources available to you.

For help and information addressing mental or physical health concerns, including meeting with a Bishops counsellor or nurse, visit: www.ubishops.ca/student-services/

If you are experiencing any personal difficulties that make it hard for you to meet your course requirements, please talk with your professor(s) or academic Dean. You should also connect with our professionals in student support services for your specific physical or mental health needs.

NOTES:

- Mathematics is a discipline which requires extensive mental training. As such, some of the exercises given are just that, exercises to build mental muscle. Not every exercise will be directly applicable to a specific discipline and may incorrectly be viewed as useless. These exercises are designed to build muscles for the application of mathematics to various problems.
- Tests and the final exam are closed book and closed notes. The use of aiding devices such as translators or dictionaries are not permitted during the writing of tests or exams⁴. If additional clarification concerning a test/exam question is requested by a student the attending examiner may provide additional clarification.
- Since tests are formative assessments, the use of electronic calculators will not be permitted during tests.⁵
- Since the exam in a summative assessment, a **Casio fx-260 solar** calculator will be permitted, no substitutions allowed. These calculators are available at the bookstore and it is the student's responsibility to bring their own calculator. Additional calculators will not be available.
- There will be no make-up test. A supplemental exam will be given on May 5, 2017 at 9:00am for those who qualify (a failing grade of at least 35%). It will count for 100% of the final grade. Full details available on page 31 of the 2016/17 Academic Calendar.
- Late assignments will not be accepted⁶ and will be assigned a grade of zero. Written assignments are to be submitted to the drop box *outside* Johnson 117A no later than 12:00pm on the date due. Written assignments must be written on 8.5"x11" paper (letter size) in blue or black ink, or in pencil, and must be stapled in the upper left-hand corner. It is strongly advised to number your pages and to scan your assignment for your own records. You may use colours in your diagrams if you wish. You must use the cover sheet provided on the course website.⁷

⁴The instructor will bring a translation aid to answer translation questions if appropriate.

⁵The rationale for this pedagogical decision is as follows: Mathematics can be treated as a language, and as such to demonstrate proficiency with the language there must be basic vocabulary, in this case, single-digit arithmetic. The evaluation of higher-level computation is demonstrate and taught in this course, and is thus part of the learning outcomes. It is also encouraged that students do not use calculators during assignments as the use of calculators in learning the multi-digit arithmetic has been found to be detrimental to pencil-and-paper ability. There are appropriate times for the use of calculators, and that will be explained as the course progresses.

⁶The rationale for this requirement is life-skills training as working to a fixed and immovable deadline is important.

⁷These requirements, that of formatting, are given also as life-skills training. Properly preparing and presenting information is an important skill to possess. These life-skills are examples of transferable knowledge that Bishop's University is trying to instill in our students.