

CS2035 Course Outline

1. Course Information

Course Information

Data Analysis and Visualization (2035B), winter 2023, the lectures will be held in NCB-114, 2023, Tuesdays 12:30-2:30pm; Thursdays 1:30-2:30pm.

List of Prerequisites

0.5 course in Applied Mathematics, Calculus, Mathematics, Statistics (including Introductory Statistics), or the former Linear Algebra at the 1000-level or above, or permission of the Department.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

In addition, students should have a solid background in linear algebra and statistics.

2. Instructor Information

Dr. Boyu Wang, bwang@csd.uwo.ca

Prof. Boyu Wang Office Hours: Thursday 2:30-3:30pm (right after the lecture, @ MC366) or by appointment.

Students must use their Western (@uwo.ca) email addresses when contacting their instructors. The students should include the course number in the subject line of the email and what the email is related to. For example: CS2035 – assignment 1.

3. Course Syllabus, Schedule, Delivery Mode

Essential skills and computational tools for working with data from a number of disciplines. Uses MATLAB for data analysis and visualization through basic statistics, numerical computing, and programming, with interdisciplinary applications ranging from image processing to financial computing, and more. Suitable for both Computer Science and non-Computer Science students.

Lectures: Tuesdays 12:30-2:30pm; Thursdays 1:30-2:30pm.

Classes begin: January 9, 2023

Reading Week: February 18 – February 26, 2023

Classes end: April 10, 2023

Contingency plan for an in-person class pivoting to 100% online learning

In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, affected course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will **not** change. Any remaining assessments will also be conducted online as determined by the course instructor.

4. Course Materials

There is no required textbook. However, there are several good textbooks describing parts of the material that we will cover.

1. Recommended text: Mastering MATLAB, Duane Hanselmann and Bruce Littlefield, Pearson (Prentice Hall), 2012. However, any MATLAB textbook would mostly like be sufficient.
2. Another good text: MATLAB Programming for Engineers (5th edition), Stephen J. Chapman, Cengage Learning, 2016.
3. The course notes and some MATLAB functions and data will be on the course webpage.

Students should check OWL (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class. Students are responsible for checking OWL on a regular basis.

All course material will be posted to OWL: <http://owl.uwo.ca>.

If students need assistance, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

Technical Requirements

The students need to have access to stable internet connection, computer with working microphone and/or webcam.

5. Methods of Evaluation

The overall course grade will be calculated as listed below:

Assignments (4)	60%
Labs (8)	10%
Final Exam	30%

Labs: There are (potentially) either 10 or 11 labs but you only have to complete 8 to obtain full marks.

Tentative Timetable:

Assignment 1: Release: Jan 27, Due: Feb 7, at 11:55pm

Assignment 2: Release: Feb 7, Due: Feb 17, at 11:55pm

Assignment 3: Release: March 7, Due: March 21, at 11:55pm

Assignment 4: Release: March 21, Due: April 4, at 11:55pm

Final Exam: TBA

Accommodated Evaluations

10% of each assignment will be taken off each day for late submissions; after 5 days being late, no points are given anymore. The assignments are worth 60% of the overall mark for the course. If an assignment has to be cancelled for any reason, the remaining assignment weights will be prorated to add up to 60%.

If you miss the Final Exam, please contact your faculty's Academic Counselling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam).

6. Student Absences

By policy, academic considerations for work totalling 10% or more of the final course grade can be granted only by the student's Faculty of Registration (typically by their academic counsellors). In such cases, students should be directed as follows.

You must provide valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf.

The Student Medical Certificate is available at

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

Absences from Final Examinations

This course does not have a final exam, but you are not able to submit your final report due to illness, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so.

Note: missed work can *only* be excused through one of the mechanisms above. Being asked not to attend an in-person course requirement due to potential COVID-19 symptoms is **not** sufficient on its own.

6. Accommodation and Accessibility

Religious Accommodation

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf.

7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy,

https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf,

the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at their official university address is attended to in a timely manner.

Completion of this course will require you to have a reliable internet connection and a device that meets the system requirements for Zoom. Information about the system requirements are available at the following link:

<https://support.zoom.us/hc/en-us>

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

8. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>.

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://uwo.ca/health/>) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

if you have any questions regarding accommodations.

Additional student-run support services are offered by the USC, <https://westernusc.ca/services/>.