

**Meeting Time & Location**

Section 01 Tuesday 5:00-8:00pm

Section 03 Thursday 6:00-9:00pm

**Course Description**

Understanding the data-driven programming methodology and having a sound programming background are foundational skills for anyone interested in working with data. This course introduces students to the principles of programming and application design. In addition, students are exposed to the concepts of data structures and algorithms. Using a hands-on approach, students gain experience developing data-driven software applications.

**Learning Outcomes**

1. Develop a software design for data extraction and analysis;
2. Create and manipulate data structures;
3. Develop data algorithms;
4. Design and build a fundamental data driven software application;
5. Conduct a fit/gap analysis to determine client needs relative to data extraction and analysis.

**Resources**

Resources will be posted on Black Board throughout the semester.

**Please see and complete the course contract at the end of this syllabus.**

**Instructor**

Ethan Davis

**Office Hours**

Ad-hoc after class

### Expectations for Success

To be successful, every student watch/attend all lectures and attempt the in lecture exercises. Students are required to complete all tests and assignments on time. All submissions must be original work. Plagiarism and/or cheating will not be tolerated and will result in a grade of 0. Student will be expected to contribute equally during group projects.

### Evaluation

Problem Sets 1-3	30%
Weekly Quizzes	10%
Mid Term Test	30%
Final Group Project	30%

### Schedule of Activities

Week of	Topic	Task
May 8 <sup>th</sup> - 12 <sup>th</sup>	Introduction to BDAT 1004, The Analytics Process/ C# Intro	
May 15 <sup>th</sup> – 19 <sup>th</sup>	Imperative Programming/ Text Data, Files, Exceptions	Quiz 1
May 23 <sup>rd</sup> – 26 <sup>th</sup>	Control Structures/ Containers and Randomness	Quiz 2
May 29 <sup>th</sup> – June 2 <sup>nd</sup>	Namespaces/ Object-Orientated Programming	Quiz 3 Problem Set 1 Due
June 5 <sup>th</sup> – 9 <sup>th</sup>	GUIs	Quiz 4
June 12 <sup>th</sup> – 16 <sup>th</sup>	Recursion/The Web and Search/Databases and Data Processing	Quiz 5
June 19 <sup>th</sup> – 23 <sup>rd</sup>	Midterm	Problem Set 2 Due
June 26 <sup>th</sup> -30 <sup>th</sup>	Reading Week- <b>NO CLASS or email correspondence</b>	
July 3 <sup>rd</sup> -7 <sup>th</sup>	Web frameworks and Google Charts (reading week)	Quiz 6
July 10 <sup>th</sup> - 14 <sup>th</sup>	Intro to Data Science with Python 1: Numpy and Pandas	Quiz 7
July 17 <sup>th</sup> – 21 <sup>st</sup>	Intro to Data Science with Python 2: Lambda Functions	Quiz 8
July 24 <sup>th</sup> -28 <sup>th</sup>	Introduction to R Part 1	Quiz 9

July 31 <sup>st</sup> – August 4 <sup>th</sup>	Final Project Work Period (independently meet with your group)	
August 7 <sup>th</sup> – 11 <sup>th</sup>	Final Presentations	Final Presentations
August 14 <sup>th</sup> – 18 <sup>th</sup>	Introduction to R Part 2	Quiz 10, Problem Set 3

The sequence and content of this syllabus may change due to unanticipated opportunities or challenges, or to accommodate the learning styles of the students.

### Email Policy

To make sure your email is responded to please follow these steps when emailing me:

- 1) At the beginning of the email subject line include the course name, section, and group name/number (if applicable) followed by the subject
- 2) For example, BDAT 1004 01 Question, or BDAT 1004 01 Group 4 extra help

This way I know the email is actionable and warrants a response. Student emails are responded to on Tuesday and Thursday evenings. Emailing me repeated will not get you a response quicker. Student emails who fail to meet the criteria above will not receive a response.

### Due Dates

Unless otherwise specified quizzes are due 24 hours after class ends (e.g if your class is 5pm-8pm on Tuesday, they are due by 8pm Wednesday. Problem Sets and the final assignment are due at 11:59pm the day of class.

### Late Policy

Quizzes must be completed within 24 hours. Midterm exams must be completed within the timeslot allocated. Late Problem Sets will receive a deduction of 10% per day. After 3 days they will no longer be accepted and will receive a mark of 0. The Final Group Project will receive a deduction of 10% per day. After 3 days they will no longer be accepted and will receive a mark of 0. Any assignment handed in after the semester ends on December 17<sup>th</sup> will receive a mark of 0 regardless of it's

withing the 3 day late period. Exception will only be given for exceptional circumstances such as medical emergencies or bereavement.

### **Problem Set Submission Document**

All Problem Set submission are governed by the Problem Set Submission document posted on Blackboard. If the rules of the submission document are not followed, you will have marks deducted and in some cases a grade of 0 will be assigned.

### **Academic integrity**

**Student caught engaging in any of the misconducts below will be subject academic misconduct penalties.**

For Problems Sets, students first offence will result in a 0 on the assignment and the submission of an academic misconduct, second offence is 0 in the course and the submission of an academic misconduct to the registrar. There is a 0 tolerance policy for cheating on the midterm exam, anyone caught breaking the academic integrity rules on the midterm will receive an automatic grade of 0 on the midterm and the submission of an academic misconduct to the registrar.

In any academic activity at the college, students are responsible and accountable for academic integrity. Georgian strives to promote a culture of academic integrity. Students who choose to commit misconduct, or aide in others committing misconduct, will be subject to penalties which will be determined according to the severity of the offence and the number of past misconducts found. Dismissal from the college resulting from a misconduct cannot be appealed.

In addition to the areas of academic misconduct outlined in this section, offences involving civil or criminal law involving academic work or materials are subject to penalties under this procedure. Students should also be aware that other types of misconduct may be dealt with by the college under other procedures, such as the Student Code of Conduct procedure, the Information Technology Acceptable Use procedure, the Ontario Human Rights Code or the Criminal Code of Canada.

Under the Freedom of Information and Protection of Privacy Act, 1990, respondents have the right to know that information has been collected about them. If any action is to be taken against respondents in an area of academic misconduct, the respondents have the right to know the allegations against them and enough information about the complaint to be able to defend themselves.

### 8.1 Types of academic misconduct

The following six areas constitute the major types of academic misconduct and are subject to penalties. Please note that misconduct on one or any portion of a work constitutes misconduct; there is no partial culpability. No fees are refunded to students who are dismissed from the college for misconduct. Refer to the penalties chart (below).

#### 8.1.1 Cheating

Cheating is the use of inappropriate, prohibited or unacknowledged materials, information or aids in any academic work. The use of books, notes, electronic technology (including but not limited to calculators, cell phones, tablets, and voice and video recorders) and conversation with others is restricted or forbidden in many instances of academic work and their use constitutes cheating. Students may not request others (including commercial or free term-paper organizations) to conduct research or prepare any work for them.

#### 8.1.2 Fabrication

Fabrication is the falsification or invention of any information or citation in an academic work or required program documentation such as clinical permits, criminal reference checks, etc. Invented information may not be used in any academic work without the prior authorization of the faculty. It would be considered misconduct, for instance, to analyze one sample in an experiment and invent data based on that single experiment for several more required analyses. The actual and original source of the information must be acknowledged in a citation.

#### 8.1.3 Plagiarism

Plagiarism is the representation of words or ideas of another as one's own in any academic work. Self-plagiarism is the resubmission of identical or previous work, or portions thereof. Students should be aware that plagiarism or self-plagiarism of any part of a work is academic misconduct; there is no partial culpability or penalty. To avoid plagiarism/self-plagiarism, every source of information must be identified and properly documented according to an established writing convention determined by the faculty, for example; American Psychological Association (APA) style. Faculty have the right to request that students submit their work for electronic detection of plagiarism.

#### 8.1.4 Facilitating academic misconduct

Students who knowingly or negligently allow their work or portions of their work or drafts of their work to be used by other students or who otherwise aid others in committing academic misconduct are violating academic integrity. This applies to students who hide, misrepresent or falsify information related to an incident of academic misconduct. Such students are as guilty as a student who receives and uses the material or is involved in the incident directly, even though they may not themselves benefit from that act of misconduct, are therefore subject to the same penalties.

#### 8.1.5 Denying access to information or material

It is a breach of academic integrity to deny others access to academic resources or to deliberately impede the progress of another student or scholar. This would include giving other students false or misleading information, making library or shared resource material unavailable to others by stealing, deliberately misplacing, defacing or destroying any of these resources, including computer files that are not one's own.

#### 8.1.6 Copyright violation

Canada's Copyright Act, states the legal and permissible use of copyrighted material. Georgian College has adopted the 'Association of Canadian Community Colleges Fair Dealing Policy' that provides guidance in copying according to the Fair Dealing exception under the Copyright Act. Copying beyond the limits of the guidelines and the Copyright Act, is a violation and liability for these actions will rest with the individual who made the illegal copy.

#### 8.2 Academic misconduct process

If at any point in the process outlined below the situation is shown, to the faculty's satisfaction, to be free of academic misconduct, no record is kept of the incident.

If at any point during the process outlined below, the student is unresponsive or unwilling to meet within the required timelines, the process proceeds and the AMF is ultimately forwarded to the Office of the Registrar for processing. The student's signature on the form is not required in order for a penalty to be applied.

If a student is currently enrolled in a work-integrated learning (WIL) term when a misconduct is identified, the student will be immediately taken out of their WIL term unless the student is more than half way through their term in which case the student will remain in their WIL term, unless the penalty imposed is dismissal from the College.

If an academic misconduct is identified for group work, the process proceeds individually for every member of the group. In cases where one or more members of the group (a subset of the group) are identified to be responsible for the misconduct, only the individual members of the group held responsible are charged.

The AMF remains part of the student's file in the Office of the Registrar, however no indication of academic misconduct is made on a student grade report or transcript. As with other documents in the student's file, access is restricted by the Freedom of Information and Protection of Privacy Act, 1990 as noted in section 6, Academic records.

From end to end, the process should take no longer than 10 days to be finalized.

#### Emergency evacuation

- Evacuate buildings when a fire alarm is activated or an official announcement is given.
- Familiarize yourself with all fire exit doors of classrooms and buildings you may occupy.
- Do not re-enter a building until instructions are given by the Fire Department or College Personnel.

<http://www.georgiancollege.ca/about-georgian/campus-safety-and-security/fire--tab/>

#### Lockdown

- Lockdown is initiated when there is a potential or actual violent incident on campus that could result in a serious injury or threat to life.
- Students are notified of a lockdown through mass communication systems. Instructions for students to sign up for text message alerts can be found on the main menu page of Banner, "Lockdown Alerts".
- Familiarize yourself with the College Lockdown procedures:

<http://www.georgiancollege.ca/about-georgian/campus-safety-and-security/lockdown--tab/>

- Lockdown tests will occur each semester.

#### Sexual violence

- Learn about options and resources available to those who require support or who wish to support others.

<http://www.georgiancollege.ca/about-georgian/campus-safety-and-security/sexual-violence-tab/>

#### Campus closures

- Weather can impact driving conditions and operations at Georgian College campuses. It's important to consider your personal safety in deciding when to come to class or to work.

<http://www.georgiancollege.ca/about-georgian/campus-safety-and-security/campus-closures-tab/>

The sequence and content of this syllabus may change due to unanticipated opportunities or challenges, or to accommodate the learning styles of the students.



**Course Contract**

I \_\_\_\_\_ (type your name in the space) have read the above course syllabus and agree to the rules and responsibilities outlined in it. With particular emphasis on the following:

**Email Policy**

To make sure your email is responded to please follow these steps when emailing me:

- 1) At the beginning of the email subject line include the course name, section, and group name/number (if applicable) followed by the subject
- 2) For example, BDAT 1004 01 Question, or BDAT 1004 01 Group 4 extra help

This way I know the email is actionable and warrants a response. Student emails are responded to on Tuesday and Thursday evenings. Emailing me repeated will not get you a response quicker. **Student emails who fail to meet the criteria above will not receive a response.**

**Due Dates**

Unless otherwise specified **quizzes are due 24 hours after class ends** (e.g if your class is 5pm-8pm on Tuesday, they are due by 8pm Wednesday. **Problem sets and the final assignment are due at 11:59pm the day of class.**

**Late Policy**

Quizzes must be completed within 24 hours. Midterm exams must be completed within the timeslot allocated. Late Problem Sets will receive a deduction of 10% per day. After 3 days they will no longer be accepted and will receive a mark of 0. The Final Group Project will receive a deduction of 10% per day. After 3 days they will no longer be accepted and will receive a mark of 0. Any assignment handed in after the semester ends on April 21<sup>st</sup> will receive a mark of 0 regardless of it's withing the

3 day late period. Exception will only be given for exceptional circumstances such as medical emergencies or bereavement.

### **Problem Set Submission Document**

All problem set submission are governed by the Problem Set Submission document posted on Blackboard. If the rules of the submission document are not followed, you will have marks deducted and in some cases a grade of 0 will be assigned. **All problem sets must be submitted as an ipython notebook via github or they will receive a mark of 0.**

### **Academic integrity**

Student caught engaging in any of the misconducts below will be subject academic misconduct penalties. For Problems Sets, students first offence will result in a 0 on the assignment and the submission of an academic misconduct to the registrar, second offence is 0 in the course and the submission of an academic misconduct to the registrar, third misconduct could result in the removal of the student from the BDAT program. There is a 0 tolerance policy for cheating on quizzes and the midterm exam, anyone caught breaking the academic integrity rules will receive an automatic grade of 0 on the midterm and the submission of an academic misconduct to the registrar.

**I understand and agree to the above rules and responsibilities, I am also signing to confirm I have completed the Academic Integrity Module on BlackBoard.**

Signature

Date

---

---