



## COURSE OUTLINE SPRING 2021

	Date	Initials
Prepared by Instructor	02-May	EM
Approved by Head	03-May-21	amk

### 1. Calendar Information

#### ENSF 592

#### Programming Fundamentals for Data Engineers

An introductory course in programming with an emphasis on data engineering. Topics include: Basic data structures and algorithms; Loops and iterations; Files and I/O, Functions, Classes, Modules, and Packages; Strings and text manipulation; Data wrangling; Network and Web programming; Data visualization.

Course Hours: 3 units; H (3-2)

Academic Credit: 3

Calendar Reference: <http://www.ucalgary.ca/pubs/calendar/current/engineering.html>

### 2. Learning Outcomes

At the end of this course, you will be able to:

- 1 Solve logical problems through coding
- 2 Develop and implement programs in Python
- 3 Apply Python syntax to data applications
- 4 Translate engineering requirements into coded solutions

### 3. Timetable

Section	Day(s) of the Week	Time	Location
LEC 01	TR	Asynchronous	WEB
LAB B01	TR	12:00 PM - 1:50 PM MT	WEB

### 4. Course Instructors

#### Instructor

Section	First Name	Family Name	Phone	Office	Email
1	Emily	Marasco	403-210-6432	ICT 309	<a href="mailto:eamarasc@ucalgary.ca">eamarasc@ucalgary.ca</a>

#### Teaching Assistants

Section	First Name	Family Name	Office	Email
1	Tina	Abedi Yarandy	N/A	<a href="mailto:tina.abediyarandy@ucalgary.ca">tina.abediyarandy@ucalgary.ca</a>
1	Maya	Al-Akkad	N/A	<a href="mailto:maya.alakkad@ucalgary.ca">maya.alakkad@ucalgary.ca</a>

## 5. Examinations

There will be no midterm or final examinations held in this course.

There will be two asynchronous quizzes in this course. Quizzes will be held online through the course D2L site as specified below. Each quiz will be timed, but access will be made available for at least 24 hours. Students may receive a different version of the quiz from their peers.

Students will require access to a computer and internet, and may need to scan and upload handwritten work. An scanning application may be used with a smartphone or tablet to scan and submit handwritten material.

### Quiz 1

Access begins: May 24, 12:00 pm MT

Access closes: May 25, 11:59 am MT

Quiz length: 60 minutes + 20 minutes for technical issues

Once started, the quiz must be submitted within 80 minutes

### Quiz 2

Access begins: June 14, 12:00 pm MT

Access closes: June 15, 11:59 am MT

Quiz length: 60 minutes + 20 minutes for technical issues

Once started, the quiz must be submitted within 80 minutes

## 6. Use of Calculators in Examinations

N/A

## 7. Final Grade Determination

The final grade in this course will be based on the following components:

Component	Learning Outcome(s) Evaluated	Weight
Assignments	1, 2, 3, 4	50%
Quizzes	1, 2, 3, 4	20%
Project	1, 2, 3, 4	30%

**Total:** 100%

Notes:

a) It is necessary to earn a passing grade on the course project in order to pass the course as a whole.

b) Conversion from a score out of 100 to a letter grade will be done using the conversion chart shown below. This grading scale can only be changed during the term if the grades will not be lowered.

Letter Grade	Total Mark (T)
A+	$T \geq 95.0\%$
A	$90.0\% \leq T < 95.0\%$
A-	$85.0\% \leq T < 90.0\%$
B+	$80.0\% \leq T < 85.0\%$
B	$75.0\% \leq T < 80.0\%$
B-	$70.0\% \leq T < 75.0\%$
C+	$65.0\% \leq T < 70.0\%$
C	$60.0\% \leq T < 65.0\%$
C-	$56.0\% \leq T < 60.0\%$
D+	$53.0\% \leq T < 56.0\%$
D	$50.0\% \leq T < 53.0\%$
F	$T < 50.0\%$

## 8. Textbook

The following textbook(s) is required for this course:

Title	Python Data Science Handbook: Essential Tools for Working with Data
Author(s)	Jake Vanderplas
Edition, Year	Dec. 10, 2016
Publisher	O'Reilly Media Incorporated

## 9. Course Policies

### \*SSE ADVISING AND POLICIES

All Schulich School of Engineering students have access to a D2L site titled "Engineering Student Centre". Students have a responsibility to familiarize themselves with the policies available on this site.

### \*ACADEMIC MISCONDUCT

Academic Misconduct refers to student behavior which compromises proper assessment of a student's academic activities and includes: cheating; fabrication; falsification; plagiarism; unauthorized assistance; failure to comply with an instructor's expectations regarding conduct required of students completing academic assessments in their courses; and failure to comply with exam regulations applied by the Registrar.

For information on the Student Academic Misconduct Policy and Procedure please visit:

<https://ucalgary.ca/policies/files/policies/student-academic-misconduct-policy.pdf>

<https://ucalgary.ca/policies/files/policies/student-academic-misconduct-procedure.pdf>

Additional information is available on the Academic Integrity Website at

<https://ucalgary.ca/student-services/student-success/learning/academic-integrity>.

### \*ACADEMIC ACCOMODATION

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The Student Accommodations policy is available at <https://ucalgary.ca/student-services/access/prospective-students/academic-accommodations>.

Students needing an accommodation based on disability or medical concerns should contact Student Accessibility Services (SAS) in accordance with the Procedure for Accommodations for Students with Disabilities (<https://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities.pdf> ). Students who require an accommodation in relation to their coursework based on a protected ground other than Disability should communicate this need in writing to their Instructor.

SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit [www.ucalgary.ca/access/](http://www.ucalgary.ca/access/) .

### \*INSTRUCTOR INTELLECTUAL PROPERTY

Course materials created by instructors (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the instructor. These materials may NOT be reproduced, redistributed or copied without the explicit consent of the instructor. The posting of course materials to third party websites such as note-sharing sites without permission is prohibited. Sharing of extracts of these course materials with other students enrolled in the course at the same time may be allowed under fair dealing.

### \*FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY

Student information will be collected in accordance with typical (or usual) classroom practice. Students' assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary.

### \*COPYRIGHT LEGISLATION

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (<https://www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright-policy.pdf>) and requirements of the copyright act (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>) to ensure they are aware of the consequences of unauthorised sharing of course materials (including instructor notes, electronic versions of textbooks etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy <https://www.ucalgary.ca/pubs/calendar/current/k.html>.

\*MEDIA RECORDING (if applicable)

Please refer to the following statement on media recording of students:

[https://elearn.ucalgary.ca/wp-content/uploads/2020/05/Media-Recording-in-Learning-Environments-OSP\\_FINAL.pdf](https://elearn.ucalgary.ca/wp-content/uploads/2020/05/Media-Recording-in-Learning-Environments-OSP_FINAL.pdf)

*\*Media recording for lesson capture*

The instructor may use media recordings to capture the delivery of a lecture. These recordings are intended to be used for lecture capture only and will not be used for any other purpose. Although the recording device will be fixed on the Instructor, in the event that incidental student participation is recorded, the instructor will ensure that any identifiable content (video or audio) is masked, or will seek consent to include the identifiable student content to making the content available on University approved platforms.

*\*Media recording for self-assessment of teaching practices*

The instructor may use media recordings as a tool for self-assessment of their teaching practices. Although the recording device will be fixed on the instructor, it is possible that student participation in the course may be inadvertently captured. These recordings will be used for instructor self-assessment only and will not be used for any other purpose.

*\*Media recording for the assessment of student learning*

The instructor may use media recordings as part of the assessment of students. This may include but is not limited to classroom discussions, presentations, clinical practice, or skills testing that occur during the course. These recordings will be used for student assessment purposes only and will not be shared or used for any other purpose.

## SEXUAL VIOLENCE POLICY

The University recognizes that all members of the University Community should be able to learn, work, teach and live in an environment where they are free from harassment, discrimination, and violence. The University of Calgary's sexual violence policy guides us in how we respond to incidents of sexual violence, including supports available to those who have experienced or witnessed sexual violence, or those who are alleged to have committed sexual violence. It provides clear response procedures and timelines, defines complex concepts, and addresses incidents that occur off-campus in certain circumstances. Please see the policy available at <https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>

## \*OTHER IMPORTANT INFORMATION

Please visit the Registrar's website at: <https://www.ucalgary.ca/registrar/registration/course-outlines> for additional important information on the following:

- Wellness and Mental Health Resources
- Student Success
- Student Ombuds Office
- Student Union (SU) Information
- Graduate Students' Association (GSA) Information
- Emergency Evacuation/Assembly Points
- Safewalk

## 10. Statements Specific to Spring 2021

### Course Format and Scheduling

Course content will be delivered through a combination of both synchronous and asynchronous online learning. Students are responsible for all content covered in both types of delivery.

Course material and relevant links will be posted asynchronously to the course D2L site. Students may access the material at times convenient to them but should engage with the material in a timely manner in order to keep up with course deliverables. All posted material remains the intellectual property of the instructors and should not be shared or duplicated in any form.

Weekly laboratory sessions will be held online during the scheduled time via Zoom and will provide opportunities for real-time engagement. Example problems and solutions may be recorded for later viewing, but in general the sessions will not be recorded to encourage open participation and discussion.

### Expectations for Attendance and Engagement in Online Sessions

Active engagement in class and with course material is essential in any course. In the online context, students must take increased ownership of their learning.

Expectations for attendance at synchronous sessions are the same as they are in a face-to-face course. Students are expected to adhere to online class norms. These include:

- Keeping the microphone on mute unless called on by the instructor or teaching assistant (or participating in oral discussion)
- Using the features and tools in Zoom as requested by the instructor or teaching assistant
- Communicating in a professional and respectful manner at all times
- If a student would like to ask a question anonymously, they may use the private chat feature in Zoom. The question will be answered publicly without attribution to the student.

If it appears that you are not actively engaged in the class (for example, not responding to the instructor, not joining breakout rooms, etc.), your instructor reserves the right to remove you from the Zoom session. If your personal circumstances prevent you from fully participating, please speak with the instructor.

Students are expected to use the course discussion boards to engage with their peers, teaching assistants, and instructor. Questions regarding course content should be posted to the boards rather than emailed.

### Guidelines for Completing and Submitting Coursework

Content, deliverables, and deadlines will be communicated through the course D2L site. Students should check this site every weekday, as well as their associated email account.

Each assessment will include guidelines that specify the submission process.