**TEACHER CONTACT INFORMATION**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Weeks | Name | Phone | Office | Email |
| 1-7 | Farah Hussein |  |  | Contact through Slate email |
| 8-14 | Ali Abbas Hirji |  |  | Contact through Slate email |

**COURSE OUTLINE**

For course Outline, please visit slate page of the course, there is a menu option for Course Outline.

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| --- | --- |
| Detailed Course Description |  |
| Program Context | Topical Outline |
| Critical Performance | Academic Honesty Policy |
| Learning Outcomes | Discrimination and Harassment Policy |

**CLASSROOM POLICIES**

* Attendance is not mandatory but is highly recommended. It is your responsibility to catch up on any missed material.
* Please be polite and consider others. If you distract or disturb others, you will be asked to leave the class
* If you arrive late, please join quietly. It is your responsibility to catch up on any missed material.

**Textbook(s):**

This course does not have an official textbook, but we recommend the following two books as supplementary reading materials:

1-Chio, Clarence, and David Freeman. Machine learning and security: Protecting systems with data and algorithms. " O'Reilly Media, Inc.", 2018

Github link: https://github.com/amueller/introduction\_to\_ml\_with\_python/blob/master/07-working-with-text-data.ipynb

2-McKinney, Wes. Python for data analysis: Data wrangling with Pandas, NumPy, and IPython. " O'Reilly Media, Inc.", 2022.

This course may also make use of various chapters from different textbooks available through Sheridan's EBook Library. Links to the required texts will be provided in class and via SLATE

In addition to the textbook, this course may make use of handouts, sample code, and other resources. Additional material will be made available through SLATE. If you are not yet set up on SLATE, you can use a guest account (ask IT for details regarding the guest account).

**Read more details about the evaluation Policy at:**

<http://academic.fast.sheridanc.on.ca/r/ac_academic_procedures_for_evaluations.pdf>

**EVALUATION POLICIES**

* All assignments must be uploaded using the appropriate SLATE dropbox. Assignments not uploaded to the SLATE dropbox will not be graded.
* Unless other arrangements have been agreed upon in advance with the professor (that means well BEFORE the due date), all assignments are subject to a late penalty of 10% per day (including weekends).
* Late assignments will only be accepted up to 3 days after the due date (including weekends).
* If you know you will be missing a test, it is your responsibility to inform the instructor BEFORE the test date to make alternate arrangements.
* A doctor's note will be required to rewrite any test or quiz missed for medical reasons.
* There will be no make-ups for missed In-Class exercises or quizzes.

<https://policy.sheridanc.on.ca/dotNet/noAuth/login.aspx?&public=true>

Participation: Participation in class does not count towards your final grade.

Tests: If you arrive late, you will only be allowed the remaining time.

**If you miss any evaluation, please contact professor, and explain your absence and provide documentation within 24 hours of the absence; in case within 24 hours reason is not communicated, grades would be marked 0. For more info, please read the information given at link below: -**

<http://academic.fast.sheridanc.on.ca/r/ac_academic_procedures_for_evaluations.pdf>

**Academic Honesty & Collaboration Policy**

Unless stated otherwise, students are encouraged to work together and help each other with homework, assignments and the general understanding of course material. Collaboration is an effective way for students to learn and understand the material in this course. Some ways of collaborating, however, are more productive than others, and some ways are no help at all.

**Good collaboration practices**

* Discussing course material and problems with other students at a high level, provided that nobody takes detailed notes, which are later incorporated into an assignment.
* Helping another student locate the information they need for the homework or assignment.
* Testing and reading another student's program to look for small mistakes.
* Sitting with someone to advise them while they write or debug something they are having trouble with.

**Bad collaboration practices (which are considered plagiarism)**

* Writing a part of somebody's assignment for them.
* Sending somebody your homework or assignments so they can use it as a template, cut and paste parts of it, or change it slightly and hand it in as their own.

To protect yourself against academic honesty issues, it is good practice to *always lock your computer or logout when leaving it unattended*. Also, when discussing approaches to solutions with your classmates, avoid taking too many notes. Recreating the solution later from memory will help prevent identical assignment submissions or submissions which are suspiciously similar.

**Policy Links Login with your normal Sheridan username and password**

* [Academic Honesty Policy](https://policy.sheridanc.on.ca/dotNet/documents/?docid=622&mode=view)
* [Policies & procedures website](https://policy.sheridanc.on.ca/)

**AI use policy**

**Use only with acknowledgement:**

Students are allowed to use advanced automated tools (artificial intelligence tools such as ChatGPT) on assignments in this course if that use is properly documented and credited. Text generated content using ChatGPT should include a citation such as the sample below; material generated using other tools should follow a similar citation convention:

OpenAI. (2023). ChatGPT (March 3 version) [Large language model]. https://chat.openai.com/chat

If an AI tool is used in an assignment, students must also include a brief (2-3 sentences) description of how they used the tool.

**Evaluation Plan**

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| --- | --- |
| **Evaluation Items** | **Grade Weights** |
| Assignments (6 @ 10% each) | 60% |
| Midterm Exam | 20% |
| Final Exam | 20% |
| **Total** | **100%** |

# Passing Criteria: -

To pass the course, students must achieve a 50% weighted average across the tests and the exams and at least 50% overall in the course.

**Weekly Class Schedule**

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| --- | --- | --- | --- |
| Week | Class Meeting Date | Topics | Evaluations & evaluated LOs |
| Week 1 | May 7th | Module 1- Intro to Python |  |
| Week 2 | May 14th | Module 2 & 3- Panda and data processing | Exercise 1 Python (10%) |
| Week 3 | May 21 | Module 4- Data Cleaning |  |
| Week 4 | May 28 | Module 6- Intro to machine learning | Exercise 2: Panda Data Cleaning (10%) |
| Week 5 | June 4th | Module 6- supervised and unsupervised learning |  |
| Week 6 | June 11th | Module 8- Classification: Practice Supervised SVM | Exercise 3 - Supervised machine learning: benign vs malware (10%) |
| Week 7 | June 18th | Midterm (20%) |  |
|  | **Reading Week (June 23-27)** | | |
| Week 8 | July 2nd | Unsupervised learning |  |
| Week 9 | July 9th | Module 7- Feature Selection and Data Mining | Exercise 4 Vulnerability classification (10%) |
| Week 10 | July 16th | Anomaly detection: outlier | Exercise 5- outlier detection (10%) |
| Week 11 | July 23rd | NLP- feature selection over the text |  |
| Week 12 | July 30th | Practice SPAM detection | Exercise 6- SPAM detection (10%) |
| Week 13 | August 6th | Exam Review (Time Permitting) |  |
| Week 14 | August 13th | Final Exam (20%) |  |