# MIS-212 Problem Solving & Programming

*University of Massachusetts Dartmouth*

*Charlton College of Business*

*Department of Decision and Information Sciences*

**Class**  MIS 212-01

**Instructor:**  Zhengzhong Shi, Ph.D.

**Prerequisite(s):** MIS 101

**Email:** [zshi@umassd.edu](mailto:zshi@umassd.edu)

**Course Web Site:** myUmassD at <https://my.umassd.edu/> first and then select myCourses

P**hone:** 508-910-6513

**Office Hours:** Tuesday, Thursday, 2:00pm - 3:15pm;

Wednesday: Zoom Session: 2:00pm - 3:30pm

## Course Objectives

Fundamentals in computer programming in business. Through working on various mini business applications (such as web design, data processing, and data visualization), students will learn programming concepts, software development principles, and computational problem-solving skills.

## Recommended Course Materials

1. Lerner, R.M., 2020. Python Workout: 50 ten-minute exercises. Simon and Schuster.
2. Molin, S. and Jee, K., 2021. Hands-On Data Analysis with Pandas: A Python data science handbook for data collection, wrangling, analysis, and visualization. Packt Publishing Ltd.
3. Ken Youens-Clark, Tiny Python Project, Publisher, ‎Manning (September 1, 2020), 440 pages, ISBN-10: ‎ 1617297518, ISBN-13: ‎ 978-1617297519.
4. Boris Paskhaver, Pandas in Action, Manning (October 5, 2021), ‎ 440 pages, ISBN-10: ‎ 1617297437, ISBN-13: ‎ 978-1617297434
5. Other books/materials may be added as needed.

## Learning Outcomes:

1. Students will have a solid understanding of fundamentals of Python Programming (such as data structure – list, dictionary, set, control structure (such as for and while loops), file processing.
2. Students will develop a good understanding of data analysis with Panda.
3. Students will have opportunities to explore a few selected Python packages (e.g., request for web scraping and pygame for game development (time dependent).
4. Students will develop a conceptual understanding of the overall system development process.

## Evaluation Activities and Percentages

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| --- | --- | --- |
| **Items** | **Evaluation Activities** | **Percentages** |
| 1 | Mini-Projects | 55% |
| 2 | Exams 1 and 2 | 45% |
| 3 | **Total** | **100%** |

## Grading Criteria:

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| --- | --- | --- | --- |
| **Score** | **Final Grade** | **Score** | **Final Grade** |
| 94% and Up | A | 73%-76.9% | C |
| 90%-93.9% | A- | 70%-72.9% | C- |
| 87% - 89.9% | B+ | 67% - 69.9% | D+ |
| 83%-86.9% | B | 63%-66.9% | D |
| 80%-82.9% | B- | 60%-62.9% | D- |
| 77% - 79.9% | C+ | Less than 60% | F |

### Substantive Participation Should:

* Add value to the discussion and avoid simply repeating, agreeing with, or answering yes or no to peer’s comments.
* Challenge comments in class, including those of the facilitator.
* Ask insightful questions.
* Answer other people’s questions.
* Exemplify the point with real-life events, when possible.
* Make comments that are relevant to the course content and objectives.

### Examples for Substantive Participation Include:

* Share an experience that is related to the discussion. Comment on other participants’ experiences that are related to the course.
* Ask other students questions about their ideas and experiences that are related to the course.
* Challenge a point that another participant made in a respectful manner. Offer a different perspective on an idea that is being discussed.
* Give insights gained from readings that were assigned for the week.  If you need more information, ask the participants a question about the week's reading.
* Discuss a work issue that is related to the course or discussion and ask for feedback.
* Relate how you have applied what you have read, learned or discussed regarding the course to your personal and professional life.
* Share another resource such as Web links, books, etc. that you have used to answer other participants’ questions or as you explore the topics of the course, (as it is a violation of copyright law to copy the actual page).

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| Tentative Schedule | | | |
| **Week** | **Date** | **Tuesdays (CCB 341)** | **Thursdays (Dion 115)** |
| 1 | Jan 23, 25 | Syllabus  Setting up the environment | |
| 2 | Jan 30, Feb. 1 | Numeric Types  Strings | |
| 3 | Feb. 6, 8 | Lists and Tuples | |
| 4 | Feb. 13, 15 | Dictionaries and Sets | |
| 5 | Feb. 20, 22 | Feb. 20 (No class, following Monday’s schedule)  Files | |
| 6 | Feb. 27, 29 | February 27, 2024  Last day to file Pass/Fail  Files | Functions |
| 7 | Mar. 5, 7 | Functions | Exam 1 |
| 8 | Mar. 12, 14 | Spring Break | |
| 9 | Mar. 19, 21 | Functional Programming and Comprehension | Functional Programming and Comprehension |
| 10 | Mar. 26, 28 | Modules and Packages  Objects | |
| 11 | April 2, 4 | Objects  Iterators and Generators | |
| 12 | April. 9, 11 | Iterators and Generators  Data Analytics with Pandas I | |
| 13 | April 16, 18 | Data Analytics with Pandas II | Data Analytics with Pandas III |
| 14 | April 23, 25 | Data Analytics with Pandas IV  Data Analytics with Pandas V | |
| 15 | April 30 | Exam 2 | No Class |

**2024 Spring Academic Calendar**

Monday, January 22, 2024 First Day of Classes

Monday, January 29, 2024 Last day to Add, Drop, or Audit

Monday, February 19, 2024 Presidents' Day Holiday: no classes

Tuesday, February 20, 2024 Follow Monday's class schedule

Tuesday, February 27, 2024 Last day to file Pass/Fail

Monday, March 11, 2024 Spring recess begins

Monday, March 18, 2024 Classes resume

Monday, April 1, 2024 Registration for Fall 2024 begins

Friday, April 12, 2024 Last day to Withdraw from a class

Monday, April 15, 2024 Patriots' Day Holiday: no classes

Tuesday, April 30, 2024 Last day of Spring classes

## Course Policies

**University Policies:** <https://www.umassd.edu/provost/resourcesforfaculty/syllabus-language/>

**Statement Regarding Email as Official Means of Communication:** Each student must have a UMASS email address to be able to communicate with the professor, graduate assistant, and students in the group or the class. Email communication will be sent only to official UMASS email addresses. If you use a different email package at home, please ensure that your UMASS email is forwarded correctly.

**Assignments and Exams:** No late assignments and exams will be accepted. Exceptions will be made given extenuating circumstances such as a note from a doctor.

**Ethical Behavior:** Business professionals must be trusted, because they may have access to a wide variety of confidential and personal information. ***Cheating will not be tolerated***.

**Changes in the Syllabus:** Any administrative decisions regarding matters arising that are not covered by the syllabus will be made on an “as-needed” basis. Students will be informed of any changes in as timely a manner as possible.

**Medical Needs:** If you have any special learning or testing requirements please let me know as soon as possible so special arrangement can be made. If you have any special medical condition (e.g., epilepsy) that you feel it would be helpful for me to know about, let me know. If you have any special needs in terms of evacuating the building in case of an emergency, let me know.

**Getting to Know the University**

Please visit the following web pages and read through the introduction.

1. Academic Resource Center: http://www1.umassd.edu/arc/

2. Career Development Center: http://www.umassd.edu/cdc/

3. Writing Center: http://www1.umassd.edu/arc/wrc/

4. Academic Advising Center: http://www1.umassd.edu/acadvising/welcome.cfm

If you are interested in getting to know more about centers in this university, please visit http://www1.umassd.edu/campus/centers.cfm for more information about centers in this University.

## Policy on UMass Dartmouth Student Academic Integrity

All UMass Dartmouth students are expected to maintain high standards of academic integrity and scholarly practice. The University does not tolerate academic dishonesty of any variety, whether as a result of a failure to understand required academic and scholarly procedure, or as an act of intentional dishonesty. The instructor should state his/her policy if a student violates the University Academic Integrity Policy.

https://www.umassd.edu/media/umassdartmouth/university-policies/new-policies/policies-2019/ACA-017-Student-Academic-Policy-for-Undergraduates.pdf