DEPARTMENT OF MATHEMATICS, PHYSICS AND COMPUTER SCIENCE

CISC 482: Computer Systems Seminar
3 cr
Course Syllabus
Spring Semester 2023

Professor: Jeremy Castagno
Contact Info: e-mail: jcastagno@springfieldcollege.edu
                Office: SBSC 125
                Office phone: (413) 748-3276
Office Hours: T/Th 9:00 AM – 10:30AM, W 9AM-12PM, 2PM-3:00PM
Lecture Class Times & Location: W/F 12:00PM-1:15PM, SBSC 119
Course Schedule: SEE LAST PAGE

Required Items For The Course:

Zybooks – Computer Systems Seminar

1. Sign in or create an account at learn.zybooks.com
2. Enter zyBook code: SPRINGFIELDCISC482CastagnoSpring2023
3. Subscribe (~$58)

Laptop (only need browser)

Course Description

This course provides an introduction to data science. Students will learn to analyze data, create meaningful data visualizations, and generate models for predictions.

Office Hours

You may schedule a time to meet anytime during office hours by creating an invite using Google calendar or directly e-mail me. You may also drop by my office anytime during office hours! I am eager to help all students with any questions. If my office hour times don't work for you, we can schedule another time by e-mail.

All course slides and notes will be posted to Brightspace. In the event of my illness, we may use Zoom for the classroom lecture. My zoom meeting ID is: 850-123-9698

Prerequisites: N/A

Course Learning Outcomes

1. A basic of probability and statistics
    a. Be able to analyze data to determine means, medians, and z-scores.
2. Be able to download data from the internet and clean it for a computational analysis
    a. Be able remove missing values, nan values, and convert data types
3. Be able to create charts and figures that provide meaningful understanding of the data
4. Be able to create predictive models
    a. Be able to create regression models
    b. Be able to create supervised learning models
    c. Be able to create unsupervised learning models
5. Be able to determine model performance
    a. Be able to create an ROC curve and interpret it
    b. Be able to understand Type 1 and 2 errors
    c. Be able to perform cross fold validation

Methods of Assessment for Specific Learning Outcomes: All of the above specific learning outcomes will be assessed by the following: graded homework assignments, exams, and in class activities.

Teaching Method

This course is taught as a mix of short lectures, in-class work, and discussion.

Grading Schedule for The Course:

Exam #1	**15%**
Exam #2	**15%**
Final Project	**25%**
Weekly Homework	**30%**
Class Reading	**15%**

NOTE: If the College should cancel classes due to inclement weather or some other reason, any exam or quiz scheduled on that day will be administered at the next class meeting. Check for class cancellations by calling the school closing information line at 748-5999, or checking Springfield College's website.

Homework: Homework will be assigned on a weekly basis. One (1) HW assignment is due every Wednesday by midnight. All HW is weighted equally (worth the same points). Exactly one (1) HW assignments with the lowest grade will be dropped and not calculated in your final grade. This means that you can potentially skip (1) assignment. This is meant to allow students to skip assignments if they are sick, extremely busy, and to help improve their grade. Unexcused late HW is not accepted.

All remaining HW will be submitted using the REPLIT website or Github Classrooms. We will have a class that goes over how to submit your HW.

Class Activities: In class activities will occur in the form of small interactive coding sessions. Participation gives full credit!

Make-up Exams: Make-up exams for lecture and lab exams will be given <u>only</u> to those students who can provide **documentation** of a legitimate excuse.

Course Grade Evaluation

Each student's <u>overall</u> performance in the course will be carefully evaluated in the determination of a letter grade for the course. The following is offered as the <u>general guideline</u> to be used in the assignment of a letter grade. Since the student's progress throughout the course will be carefully monitored, careful consideration will be given to improvement in performance from one exam to the next. Therefore, deviation from this guideline may occur in exceptional cases.

94-100 A	80-82 B-	67-68 D+
90-93 A-	77-79 C+	63-66 D
87-89 B+	73-76 C	57-62 D -
83-86 B	69-72 C-	< 57 F

Course Withdrawal

Students who wish to withdraw from the course must do so through the registrar by the official deadline as stated by the Registrar's Office.

Policies

Academic Honesty policy

As stated in the Springfield College Undergraduate Catalogue, "Springfield College students are expected to be academically honest. Misrepresentations of facts, omissions or falsifications in any connection with the academic process (including both course work and official college documents) are violations of the Academic Honesty and Integrity Policy." Please see the catalog for further information, including consequences of violating the policy.

Attendance, Participation, and Absence Policy

You are allowed three unexcused absences. Additional absences or habitual lateness will result in a lowered final course grade, and nine unexcused absences will result in failure of the course.

In the event of an absence due to illness or emergency, notify me as soon as possible. In the event of an extended illness or emergency, you should also notify the Dean of Students (studentaffairs@springfield.edu or 413-738-3922).

Note that the following situations are recognized as College-excused absences from class, provided you follow the guidelines listed below:

1. participation in intercollegiate athletic contest (including travel time) approved by the athletic director and posted on the Springfield College Athletics website.
2. participation in a scheduled curricular or co-curricular activity approved by the appropriate dean or vice-president and on file in the dean of students' office.
3. observation of religious holidays.

Students who miss class for excused reasons may be asked to complete an alternative assignment.

If you anticipate absences of this nature, you

- must provide me with a list of dates of expected absences by the end of the first week of class and discuss with me the impact of such absences. If the absences will interfere with your ability to successfully complete the objectives of the course, you must seek to reduce the absences or drop or withdraw from the course.
- should arrange in advance of the absence for make-up of any work that will be missed and for submission of any assignments due.
- should notify me as soon as possible in the event of a sudden change of schedule (for example, participation in a game rescheduled due to rain or joining a team mid-season) and provide documentation if requested. Again, discuss the impact of the absence(s) with me.

Brightspace

Springfield College uses Brightspace as its Learning Management System. It supports teaching and learning. You can find basic course information there such as syllabi and faculty office hours. It also is a critical tool to provide communication and course instruction during campus emergencies and emergency recovery.

This class may be recorded or transcribed if an enrolled student has been approved for this service as an academic accommodation by the Academic Success Center's Disability & Accessibility Services. Recordings are for the approved student's individual access only, and are not to be shared, copied, or distributed to others. For questions or concerns about acceptable use, please contact the Academic Success Center: 413-748-3389, asc@springfield.edu, or Learning Commons 300."

Academic Assistance

A wide variety of academic assistance is offered through the Academic Success Center in the Learning Commons, Suite 300 (3rd floor). To contact the ASC, please call 413-748-3389 or email asc@springfield.edu Students can request ASC services on this page: https://springfield.edu/academic-success-center/request-page

Tutorial Services

- Writing & Reading Support Services offers students help with all aspects of the writing and reading processes. Request a writing & reading tutor.

- [Math-Science Support Services](#) provides assistance to students taking courses in Mathematics, Physics, Computer Science, Biology and Chemistry. [Request a math- science tutor.](#)
- The [Content Tutorial Program](#) delivers support for course work that is outside what is covered by Writing & Reading Support Services and Math-Science Support Services. [Request a content tutor](#).
- The [Conversation Partners Program](#) provides support for non-native speaking students wishing to improve conversation and comprehension skills. [Request a conversation partner](#).

Disability & Accessibility Services
- [Disability & Accessibility Services](#) works with students with disabilities to provide appropriate accommodations, auxiliary aids, and services that facilitate equal access and meaningful participation in their educational experiences at Springfield College. [Register with DAS Online](#) to request academic accommodations for the first time at Springfield College.

Academic Coaching Program
- The [Academic Coaching Program](#) is available to help students improve time management and learning strategies. [Request an academic coach.](#)
- The [Academic Progress Program](#) provides assistance and support for the students in academic jeopardy to help improve their academic skills, performance and standing.
- The [ASC Power Hours](#) are 1-hour sessions that present skills and tactics to help you master your academics and manage college life with confidence.

MTEL Assistance Program
- The MTEL Assistance Program provides support for students preparing to take the Massachusetts Tests for Educator Licensure®.

Academic Resource Connection (ARC)
- The ARC is designed to provide students access to asynchronous academic tools through Brightspace available at all times. In the ARC, you will find videos, electronic links, and documents that address the following areas:
  - Research
  - Writing
  - Academic Success Strategies
  - Academic Technology
  - [Visit the ARC](#)

The Writing Hub

- The Writing Hub serves all Springfield College students traditional and ROCE undergraduates and graduate students in all schools and on all campuses. Our programming is currently fully online.

  We offer process-based writing support. This means that we emphasize the improvement of individual writing assignments through the development of transferable writing knowledge.

  We do not proofread, copy edit, or weigh in on the correctness of content.

  Students can meet with us in 30-minute one-on-one sessions or submit 3-5 pages of writing for asynchronous feedback.

Our staff members hold terminal degrees in writing or closely related fields and are members of the College Writing faculty.

Our Hours

- Sunday, 1 PM to 7 PM
- Monday, 7 PM to 10 PM
- Tuesday, 7 PM to 10 PM
- Wednesday, 7 PM to 10 PM

Contact the Hub!

- Web page: springfield.edu/writinghub
- Email: writinghub@springfieldcollege.edu
- Contact Anne: awheeler2@springfieldcollege.edu or 413-748-3606

Disability-Related Accommodations

Springfield College is committed to an inclusive and accessible educational environment for students with disabilities. If you need academic accommodations due to a disability or disabling medical condition (including temporary disabilities), please contact the Academic Success Center's Disability & Accessibility Services (DAS).

Please note: faculty are not obligated to modify course policies or provide accommodations without official notification from DAS. It is the student's responsibility to follow any procedures outlined by DAS for determining eligibility and for requesting accommodations in advance of anticipated need. Accommodations cannot be provided retroactively.

To request academic accommodations for the first time at Springfield College or to receive eligible accommodations in this class, start by logging in to the DAS student portal at accessiblelearning.com/springfield.

Language Supports

To assist our international students as they transition into an English language academic environment and to support native-born multilingual speakers, the College offers a variety of supports. The Academic Success Center offers English language supports through its **Writing & Reading Support Services**, which offers students help with all aspects of the writing and reading processes. Another support is the **Conversation Partners Program**, which provides support for non-native speaking students wishing to improve conversation and comprehension skills. Pending approval of the course instructor, the International Center offers students who are English Language Learners or multilingual speakers **ELL Test Proctoring** with extended time for course exams in an alternative location.

Incomplete Policy
 "An instructor may give a grade of incomplete (I) following a student's request in situations where incapacitating illness or exceptional circumstances beyond the control of the student **prevent the student from completing course requirements as determined in the sole discretion of the instructor.** A student

will have a specified period of time, not to exceed one semester exclusive of summer or prior to graduation, to complete incomplete work**.** A contract for incomplete grades must be completed and signed by both the instructor and the student. The student must complete the incomplete work *and a valid grade submitted by the faculty member to the Registrar's Office* no later than the *last day* of the term subsequent to the term in which the "I" was received. A copy of this contract will remain with the student, the instructor, the registrar, and the academic department (or SHS Campus) offering the course. If the student does not meet the conditions of the contract for the completion of the incomplete by the time specified or prior to graduation, the registrar will automatically change the "I" grade to an "F" grade or an alternate grade designated by the instructor that is based on work completed. This policy applies to all students enrolled at Springfield College effective Fall 1999; it does not affect "I" grades issued prior to this date."

Decorum

As adults, students are expected to exercise proper decorum at all times. Students who are disruptive and disorderly will be requested to leave the classroom and will be reported to the Office of the Dean of Student Affairs.

Academic Integrity And Honesty:

Students are expected to exercise academic integrity and honesty. In the completion of programming projects or homework assignments, students are to do their own work! Although I do encourage you to discuss a problem in general terms, such as the type of control structure that one might use or how to find a syntax error, students must submit original work! Students who are caught cheating on an exam or committing plagiarism on assignments will be reported to the Dean of Students Office for further possible disciplinary action. Students should refer to the section, "ACADEMIC HONESTY AND INTEGRITY POLICY", in the Student Handbook under "Academic Policies and Procedures" regarding details of the College's policy.

CISC 482:   **Spring Semester 2023**

Course Schedule and Outline

Week	Dates	Topics	Readings and Exams
1	01/18/23	Intro Data Science	Reading 1-1 HW1 - Markdown
2	01/25/23	Probability and Statistics	Reading 2-1, Reading 2-2 HW2 – Analyze Data
3	02/01/23	Data Wrangling and Exploration	Reading 2-3, Reading 3-1
4	02/8/23	Data Exploration	Reading 3-2, Reading 4-1 HW3- Graphs
5	02/15/23	Data Exploration	**EXAM 1 – 2/15/2022** Reading 4-2 PROJ 1-1 Topic Ideas
6	02/22/23	Regression	Reading 5-1, Reading 5-2
7	03/01/23	Regression	Reading 5-3, Reading 5-4 HW4 - Regression
8	03/08/23	Evaluating Model Performance	Reading 6-1, Reading 6-2
9	03/15/23	**Spring Break**	PROJ 1-2 Proposal
10	03/22/23	Evaluating Model Performance	**EXAM 2 – 3/24/22,** Reading 6-3 HW5 – Comparing Models
11	03/29/23	Supervised Learning	Reading 7-1 PROJ 1-3 Outline and Draft
12	04/05/23	Supervised Learning	Reading 7-2, Reading 7-3 HW6 – Supervised Learning
13	04/12/23	Unsupervised Learning	Reading 8-1, Reading 8-2 PROJ 1-4 Peer Review
14	04/19/23	Unsupervised Learning	Reading 8-3
15	04/26/23	Capstone Project Work	PROJ 1-5 Final Report on 4/28
16	05/03/23	Final Exam Prep	**Final 5/5/2022 2:45-4:45 PM** **PROJ 1-6 Final Presentation**