

DS 680: Data Science Internship

School of Technology & Computing

3 Credits, Graduate Course
Winter 2021

Access to the Internet is required.

All written assignments must be in Microsoft-Word-compatible formats.

See the library's APA Style Guide tutorial for a list of resources that can help you use APA style.

Faculty Information

Professional experience information for instructors is found under *Faculty Information* in the online course menu.

Contact Information

Contact information for instructors is found under *Faculty Information* in the online course menu.

Course Description

The student will be involved in designing, participating in, and reflecting upon the internship experience. An internship is a planned new learning activity, which provides the student with a business-related learning experience designed to enhance competency while integrating theory and practice within a given field. Students can repeat their internship for the second quarter in sequence.

Prerequisite

The student must have completed a minimum of 18 credit hours in the MSDS and be currently enrolled in a graduate program at City University with a cumulative GPA of 3.25 or higher. This class is repeatable for credit.

Course Resources

Required and recommended resources to complete coursework and assignments are found on the course [Reading List](#). The reading list can be found under *Course Information* in Blackboard as well as from the library homepage (“Find Your Textbook” button).

Note: Required resources that must be purchased by the student are tagged “Purchase from a vendor of your choosing.” Required resources with a direct link, “Available through CityU Library”, are available electronically at no cost to students.

Students in Canada may purchase course resources from the [Canada Bookstore](#), and students outside the U.S. and Canada should contact their advisor or textbook coordinator for additional information.

Course Outcomes

As a result of this course, students will know or be able to do the following:

- **Integrate** a foundational knowledge of all areas of advanced computer science
- **Apply** fundamental principles and practices of advanced computer science.
- **Apply** critical and ethical thinking to solve problems in advanced computer science.
- **Evaluate** data to inform decisions and solve problems in advanced computer science.
- **Express** ideas while applying a variety of delivery models, genres, and styles.

- **Create** collaborative, diverse teams to accomplish a common goal.

Grading Scale

The grades earned for the course will be calculated using City University of Seattle’s decimal grading system, found in the current University Catalog (<https://www.cityu.edu/catalog/>).

Grading rubrics with details on how each assignment will be graded are located under *Assignments* and/or in *My Grades* in the online course menu. Students should review each assignment's rubric before completing their work to understand how it will be assessed.

OVERVIEW OF REQUIRED ASSIGNMENTS	% OF FINAL GRADE	POINTS
The Muddiest Point (MP)	5%	50 = 5 points * 10 modules
Concept Test (CT)	5%	50 = 5 points * 10 modules
Discussion Board (DB)	10%	100 = 10 points * 10 modules
Internship Presentation	20%	200 = 20 points * 10 modules
Internship Report	60%	600 = 60 points * 10 modules
TOTAL	100%	1,000 points

Course Assignments and Grading

The instructor will provide grading rubrics that will explain how this assignment will be graded.

The Muddiest Point (MP)

Before class, students are required to submit the Muddiest Point (MP) activity. The purpose of this activity is to stimulate student engagement. The instructor uses the MP to assess how students understood the required readings. The instructor also uses the MP to customize the lecture scope to implement Just-in-Time Teaching (JiTT). The MP consists of writing a brief reflective essay (<= 50 words) identifying the most confusing part (i.e., the MP) of the content covered in the upcoming module. If a student understood all concepts, the student needs to explain the most exciting aspect. There is one multiple-choice question from the required reading to demonstrate that the student understood the required readings.

Criteria	% of Grade
Participation	40%
Writing	40%
Correctness	20%
TOTAL	100%

Concept Test (CT)

The instructor poses a problem based on the key concepts of a lecture. After reflecting on the problem, students submit their responses, and the instructor reviews them without providing a correct answer. Students discuss their thought process and solution with a peer. Students then commit to an answer and re-submits their responses. Instructor reviews responses and thought processes with the correct answer.

Criteria	% of Grade
Engagement	100%
TOTAL	100%

Discussion Board (DB)

All classes are required to use the Discussion Board. Participation through DB is an integral part of this course. It is defined as active engagement in a discussion or other activity. Instructors will determine the type of activities and their due dates; moreover, different DB activities will have different substance and length guidelines. The instructor will provide specific instructions to students.

A student posts an answer to a weekly discussion topic in Discussion Board. The student also posts a response to two other students' posts by the end of each module. Comments and questions should be clear and thoughtful, with correct grammar, spelling, and punctuation. The instructor will grade the quality of your discussion postings on both content and response.

Questions or comments specifically for the instructor should be emailed directly to the instructor or posted in the Question-and-Answer Forum. Students who want to talk with other students about issues unrelated to the discussion forums should use the Coffee Talk Forum.

Although your DB postings' tone can be informal, your instructor will expect the content to be on a professional level. Your comments and questions for discussion should be clear and thoughtful, with correct grammar, spelling, and punctuation. As with written assignments, your discussion postings' quality will be graded on both content and presentation.

Criteria	% of Grade
Participation	50%
Writing	50%
TOTAL	100%

Internship Presentation

The presentation slide is required at each weekly meeting. The student will report on the internship outcomes to an academically appropriate committee in a public forum. We encourage each internship student to invite his or her internship worksite supervisor.

The student will report the internship outcomes, development, or other project efforts to an academically appropriate committee in a public forum. The nature of the presentation content will determine the specific makeup of the audience. The student will choose the format of the presentation in consultation with the advisor. The layout and design must be appropriate and adequate to represent the outcomes of the effort. *While students must make some form of a visual presentation, the presentation of the results may include publishing in a refereed publication, publication in a trade or popular magazine or journal, broadcast in an appropriate medium, or, in exceptional cases, limited dissemination within a closed community.*

Each presenter will have 15 minutes for presentation and 5 minutes for questions and answers. Each presenter must keep the total presentation time limit strictly.

Contents

- The final presentation consists of 15+4 slides: 15 slides for content and 4 slides for cover, agenda, key references, and Q&A.
- The PPT template is provided. Each student can change design and color.
- A demo video (a maximum of 1-2 minutes) for each project is required. However, the demo video is included in the total presentation time (15 minutes).
- A presentation video (15 minutes) is acceptable for the public presentation if the student is unavailable during the scheduled event.

Criteria	% of Grade
Structure	20%
Visual Presentation	30%
Verbal Quality & Engagement	30%
Collaboration*	20%
TOTAL	100%

*Collaboration with any reviewers, including either your classmates or instructors.

Internship Report

The student will provide an internship report formatted based on a template provided by the instructor. Students are required to contribute to their report iteratively and incrementally every week. The revision will always happen during a quarter. Students will add new required sections to the existing paper every week.

The report is the culmination of applied research and activities conducted throughout the quarter. The final report/paper provides a detailed problem and its solution likely to be encountered by a company or organization described as a case study.

Each internship student should submit his or her journal every week. For this weekly meeting, students must keep a daily journal and submit it weekly. The student must attend a weekly internship meeting and present his or her progress at the meeting. At the end of the internship, every internship student should submit the internship final report and present it to the public.

Before any presentation and report writing, each student must receive approval from their internship worksite supervisor to confirm the organization's disclosure policy. Both the internship student and the internship worksite must agree on which information they can use or cannot use for the final public presentation and the final report.

Criteria	% of Grade
Structure	20%
Content	30%
Writing	30%
Reference	10%
Collaboration*	10%
TOTAL	100%

**Collaboration with any reviewers, including either your classmates or instructors.

Final Internship Report Structure

The final internship report consists of the following sections. Use the template for the final internship report.

- Cover Page
- Table of Contents
- Executive summary (1 page)
- Response to Career Assessment (1 page)
- Worksite Information
 - Organizational Chart
 - About My Internship Placement
- Burn Down Chart and Analysis (1 page)
- Two Important Projects
 - Project I – ABC (1 page)
 - Project II – DEF (1 page)
- References
- Appendix
 - Internship Contract Forms
 - Internship Agreement Form
 - Internship Objectives and Key Results (OKRs) Form
 - Career Assessment Result & Response
 - Internship Weekly Schedule
 - Weekly Journal
 - Resume (a maximum of 2 pages)
 - Internship Worksite Supervisor's Evaluation Forms
 - Mid-term Evaluation (weeks 1 – 5)
 - Final Evaluation (weeks 6 – 10)

Students should use the assigned readings, videos, and other materials throughout the quarter. Students will need to utilize additional sources that the internship worksite supervisor did not assign. While stylized after an industry report, nonetheless, students must employ APA formatting of citations, footnotes, and bibliography. Students must cite the sources of all ideas, facts, and information used that are not their own, even if they have put the information into their own words. Failure to do so is plagiarism, even if the oversight is unintentional. To avoid plagiarism, check <https://library.cityu.edu/howto/apa-writing/avoid-plagiarism/>.

Executive Summary

A one-page executive summary is a condensed version of your internship final report such that readers can rapidly become acquainted with your internship without reading it all. We use the executive summary to aid decision-making for both the internship worksite supervisor and the internship coordinator by describing the essential part of your internship. The summary should describe the objectives planned, the initiatives implemented, and the key results accomplished using the 5W1H (who, what, where, when, why, and how) method.

Response to Career Assessment

Each internship student will complete the World of Work Inventory (WOWI) career assessment under the internship coordinator's supervision and attach the WOWI reports in Appendix. The

student must describe his or her understanding of the WOWI results, which will be related to their workplace performance and career planning.

Worksite Information

Each internship student will introduce his or her internship worksite to the public. The student will use an organizational chart and briefly describe the technology and computing environment of the worksite.

Burndown Chart

A burndown chart is a graphical representation of the estimated and the actual work left to do versus time. Each student maintains a quarterly burn down chart using the weekly journal entries to the estimated activities versus the actual points each week. Using the burndown chart, each student analyzes how he or she managed the internship for 10 weeks.

Two Important Projects

Each internship student will introduce two important projects. The student will briefly describe each project in terms of the problem statement, motivation, related work, approach, design & implementation, the technology employed, data collection, data analysis, and findings.

References

Students will complete references based on the proposed project topics. Students will use APA formatting for the references and their citations. A minimum of 12 references is required.

Appendix

The final report consists of six appendices: 1) Internship Contract Forms, 2) Career Assessment Results – WOWI, 3) Weekly Internship Schedule, 4) Weekly Journal, 5) Resume, and 6) Internship Worksite Supervisor's Evaluation Forms.

A.1 Internship Contract Forms

Each internship student must submit two internship contract forms, Form1A - Internship Agreement and Form 1B – Internship Objectives, Initiatives, and Key Results (OKRs), **before enrolling in the internship course.**

Two forms require three signatures, first from the internship student, second, from the internship worksite supervisor, and third, from the STC internship coordinator. The student may not enroll in the internship course without submitting these completed forms.

Internship Agreement Form: Three stakeholders - internship student, internship worksite supervisor, and internship coordinator – are required to comply with all stipulations of requirements to fulfill the purpose of this internship course. This course provides graduate-level students an opportunity to apply knowledge and skills learned in the class to real-world experiences on the job, learn new skills, observe, and participate in day-to-day workplace activities. This internship requires a minimum of **195** hours (19.5 hours per week). Templates for Form1A: Internship Agreement is provided.

Internship Objectives and Key Results (OKRs) Form: the three stakeholders must agree to the general objectives, the initiatives, and the expected key results before starting the internship.

The internship student also needs to understand that the internship course's successful completion requires the worksite supervisor's midterm and final evaluations of the internship progress toward meeting the list of objectives. Mid-term evaluation Form1B: Internship Objectives template is provided.

A.2 Career Assessment Result and Response

Each internship student completes the World of Work Inventory (WOWI) career assessment and attaches the WOWI results. Each student should submit his or her own response on the results (1 page).

A.3 Internship Weekly Schedule

Each internship student keeps a record of his or her weekly schedule. The internship weekly schedule records when and how long the student worked. The schedule documents the student performed the required 195 hours (19.5 hours per week).

A.4 Weekly Journal

A weekly journal shows the progress of the internship tasks each week. Scrum is required to manage your internship project. Each internship student must describe what tasks were performed during the estimated hours and the task's actual hours. Each internship student will answer three questions used in daily Scrum meetings: 1) What tasks have you done before this meeting? 2) What tasks will you do by the next meeting? 3) What roadblocks do you have? If no roadblocks existed, students would respond to this question: What exciting things do you have? A template for the weekly journal is provided.

A.5 Resume

Each internship student will provide a resume with a maximum of two (2) pages. The resume must include this internship experience.

A.6 Internship Worksite Supervisor's Evaluation Forms

The worksite supervisor of each internship student will evaluate the student's performance twice through the mid-term evaluation for weeks 1-5 and the final evaluation for weeks 6-10. The supervisor will send the evaluation results to the STC internship coordinator. The supervisor will also share the evaluation results with the internship student. The evaluation form is provided to the supervisor for each internship student.

Course Policies

Course policies on Late Assignments, Participation, and Professional Writing are found under Course Information in the online course menu. Students are responsible for reviewing and applying these policies while enrolled in this course.

University Policies

Students are responsible for understanding and adhering to all of City University of Seattle's academic policies. The most current versions of these policies can be found in the [University Catalog](#) that is linked from the CityU Web site.

Non-Discrimination & Prohibition of Sexual Harassment

City University of Seattle adheres to all federal, state, and local civil rights laws prohibiting discrimination in employment and education. The University is committed to ensuring that the education environment is bounded by standards of mutual respect and safety and is free from discriminatory practices.

In the U.S., the University is required by Title IX of the Education Amendments of 1972 to ensure that all of its education programs and activities do not discriminate on the basis of sex/gender. Sex include sex, sex stereotypes, gender identity, gender expression, sexual orientation, and pregnancy or parenting status. Sexual harassment, sexual assault, dating and domestic violence, and stalking are forms of sex discrimination, which are prohibited under Title IX and by City University of Seattle policy. City University of Seattle also prohibits retaliation against any person opposing discrimination or participating in any discrimination investigation or complaint process internal or external to the institution. Questions regarding Title IX, including its application and/or concerns about noncompliance, should be directed to the Title IX Coordinator. For a complete copy of the policy or for more information, visit <https://my.cityu.edu/titleix> or contact the Title IX Coordinator.

In Canada, in compliance with the British Columbia Human Rights Code, the Alberta Human Rights Act, WorksafeBC, and the Workers' Compensation Board of Alberta, the University believes that its environment should at all times be supportive and respectful of the dignity and self-esteem of individuals. Discrimination, harassment and bullying conduct, whether through person to person behaviour or via electronic communications such as email or social media is not acceptable and will not be tolerated. As an educational institution, it is our responsibility to cultivate an environment of excellence, equity, mutual respect and to recognize the value and potential of every individual. The University will take all necessary steps to meet or exceed the requirements of the law to prevent discrimination, harassment and bullying. The Respectful Workplace Policy for the prevention of discrimination, harassment and bullying policy and procedure can be found at <https://www.cityu.edu/discover-cityu/about-cityu/> under the Policies section or at <https://www.cityuniversity.ca/about/>.

Religious Accommodations

City University of Seattle has a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The University's policy, including more information about how to request an accommodation, is available in the University Catalog and on the my.cityu.edu student portal. Accommodations must be requested by the 20% mark of this course (e.g. day 14 of a ten-week course, day 7 of a

5-week course) using the Religious Accommodations Request Form found on the student dashboard in the my.cityu.edu student portal.

Academic Integrity

Academic integrity in students requires the pursuit of scholarly activity that is free from fraud, deception and unauthorized collaboration with other individuals. Students are responsible for understanding CityU's policy on academic integrity and adhering to its standards in meeting all course requirements. A complete copy of this policy can be found in the [University Catalog](#) under *Student Rights and Responsibilities* on the page titled *Academic Integrity Policy*.

Attendance

Students taking courses in any format at the University are expected to be diligent in their studies and to attend class regularly.

Regular class attendance is important in achieving learning outcomes in the course and may be a valid consideration in determining the final grade. For classes where a physical presence is required, a student has attended if they are present at any time during the class session. For online classes, a student has attended if they have posted or submitted an assignment. A complete copy of this policy can be in the [University Catalog](#) under *Student Rights and Responsibilities* on the page titled *Attendance*.

Final Assignment Due Date

Final assignments for each class at CityU must be due on or before the final date of the course as indicated in the university's course information system. Due dates that extend beyond the final date of the course may negatively impact tuition funding for students.

Support Services

Disability Services Accommodations Statement

Students with a documented disability who wish to request academic accommodations are encouraged to contact Disability Support Services to discuss accommodation requests and eligibility requirements. Please contact Disability Support Services at disability@cityu.edu or 206.239.4752 or visit the [Disability Support Services](#) page in the my.cityu.edu portal. Confidentiality will be observed in all inquiries. Once approved, information about academic accommodations will be shared with course instructors.

Library Services

CityU librarians are available to help students find the resources and information they need to succeed in this course. Contact a CityU librarian through the [Ask a Librarian](#) service, or access [library resources and services online](#), 24 hours a day, seven days a week.

Smarthinking Tutoring

CityU students have access to free online tutoring offered through Smarthinking, including writing support, from certified tutors 24 hours a day, seven days a week. Contact CityU's Student Support Center at help@cityu.ed to request a user name and password.