 Nashua Community College	<p style="text-align: center;">Fall 2021 DAT101 Intro to Data Analytics</p>
Department	Department of Mathematics & Science
Instructor	Prof. K. Seefeld
NCC Email	kseefeld@ccsnh.edu
Telephone Number	(603) 578-6815 ext. 1554
Office Hours and location	4-6 pm Tuesday ONLINE (Zoom, https://ccsnh.zoom.us/j/7164437471) 12-1 pm Wednesday ON CAMPUS (216 Streeter)
Class Days/Meeting Time	Online, asynchronous
Class Location	Canvas

Rationale

This course explores the field of data analytics and data science. It introduces the tools and concepts used in the field and acquaints students toward areas that may interest them. It also serves as the first ‘orientation’ course for the NCC data analytics program (certificate or degree).

Course Description

In this course students receive an introduction to the tools and processes used by data analysts. This course gives an overview of the data life cycle including collecting, storing, formatting, and preparing data. This course introduces the ideas behind analyzing data to make data informed decisions. Additionally, this course will introduce how to communicate results through visualizations. A basic understanding of spreadsheets is recommended.

Course Competencies

1. Describe data science in the context of big data.
2. Describe and apply the data science life cycle.
3. Describe data
4. Describe the extract, transform, and load process and why it is important.
5. Apply programming to the extract, transform and load process.
6. Analyze real-world problems based on data analysis techniques
7. Explain solutions

Essential Questions

1. Why does it mean for data to be “cleaned” and why is it so important?
2. What is the extract, transform and load process?
3. How can data be investigated to determine the answers to key business questions?

Required Materials

Textbook(s):

Textbooks (purchase through NCC bookstore, has paper and electronic version)

Intro to Data Science

ISBN: 9781506377537

Author Saltz

Publisher: Sage Publications, Incorporated

Copyright Year: 2018

Software (no cost to students, course videos will explain how to obtain/install)

Microsoft Excel software

R software (R studio)

For posting videos (for practicum assignments) if you don't have other software, you may use Apowersoft which is freely available here <https://www.apowersoft.com/free-online-screen-recorder>

Course Structure and Expectations:

This course is 100% online with no live meetings. It requires students to have the ability to work independently. There are however course activities designed to foster a sense of community in the class. Although we will not be together at the same time you will interact with each other and get to know your classmates during this course.

Canvas is the home base for the class – all work and course activities occur on Canvas. This course will follow a structured weekly pattern where weeks begin on Monday 8 am and ends on Sunday 10 pm. All work for that week must be done when expected – this is not a self-paced course. Many of the course components build upon each other and several involve timely interaction with classmates.

Every week I will post a video for you. This is a short 'class' orienting you to the week's work and discussing any issues or special things for that week. This will be approximately 30 minutes long and will be the first thing you will do each week.

The text will be relatively closely followed (see schedule) and provides a reference for you and a guide for the class. You are expected to read it independently (I will highlight in weekly videos what's important).

Weekly activities will always involve some analytical lab activities (for which I will post guided activities and videos demonstrating) and associated homework (for which you will do on your own and submit) using R Studio. Generally, there will be a discussion board to post on as well. It is very important you participate in discussions in this online class to foster community and create a learning environment. Some weeks there is a practicum assignment. Here you will do something 'practical' related to data analytics (think of it as a virtual exploration/field trip) and share it with the class in a discussion the following week. These practicums should be short

video recordings you do (using any relevant technology, Apowersoft recommended) and share with the class.

There are no quizzes or exams in this class as this is an applied course.

Grading:

Practicums 30%

Labs/HW 40%

Discussions 30%

The time to negotiate a disappointing grade is immediately after the grade is awarded (within 72 hours of posting the grade) and not the end of the semester. I am generally very good about promptly posting grades.

Final course grades are assigned based on the standard scale below.

		B+	87-89	C+	77-79	D+	67-69		
A	93-100	B	83-86	C	73-76	D	63-66	F	< 60
A-	90-92	B-	80-82	C-	70-72	D-	60-62		

Course Calendar

Week	Theme	Topics	Text
1 30-Aug to 5-Sep	Introduction	Install R and RStudio, Excel Overview of data analytics as a field, NCC program Connections to other fields Tools of the trade	3 and 7
2 6-Sep to 12-Sep	Data basics	Data structures Data frames, rows/columns Simple csv data uploading Clean data	4, 5 and 6
3 13-Sep to 19-Sep	Analytics basics	Functions Basic statistics Sampling and simulation Overview of other statistical packages	8, 9, 10 and 16
4 20-Sep to 26-Sep	Moving data Other tools	Import/Export Spreadsheet skills SQL SAS overview	
5 27-Sep to 3-Oct	Visualizing data	Graphs Maps	12 and 13
6 4-Oct to 10-Oct	Text analytics	Reading text files Word clouds Text mining	14 and 15
7 11-Oct to 17-Oct	"Big" data	Data mining Machine learning Artificial intelligence	17,18,20
8 18-Oct to 23-Oct	Course completion		

Diversity, Equity, and Inclusion Statement:

We are all responsible for creating a diverse, equitable, inclusive, and just environment. Thus, we must treat individuals with respect by valuing all types of diversity. This is fundamental in creating a welcoming and inclusive learning environment. Diversity may include multiple ways of identifying ourselves, including, but not limited to race, color, national origin, language, sex, disability, age, sexual orientation, gender identity, religion, creed, ancestry, belief, veteran status, or genetic information. These diverse identities, among many others not mentioned, influence the perspectives our students, faculty, and staff bring to the NCC community. Through use of various approaches that enhance intellectually rich, respectful, safe, and inclusive learning environments, this dynamic process will demonstrate our sustained commitment at NCC. It is our core belief that diversity, equity, and inclusion promote excellence, collaboration, and innovation while also seeking justice.

Available Support Services

Tutoring and Writing Center: The Tutoring and Writing Center, located in the library, offers free academic support services to all NCC students. Meet in-person or via Zoom with experts who can tutor you in math or accounting or help you with writing for any course. Tutoring is drop-in or by appointment. View the current tutoring schedule at <https://library.nashuacc.edu/home/tutoring>

Online chat tutoring is also available 24/7 with Smarthinking. Find a link on the left navigation menu inside Canvas courses.

Classroom Accommodations: Students who have a documented disability (physical, learning, or mental health) and require reasonable classroom accommodations must meet with the Disabilities Support Coordinator to set up an NCC Reasonable Accommodation Plan (RAP). If you had an IEP or 504 in high school, you may qualify for a plan. If you would like more information or if you are not sure if you qualify for a plan, please contact Jodi Quinn, Disabilities Support Coordinator, located in the library, 603-578-8900 ext. 1451. View additional information and the application here: <https://nashuacc.edu/student-services/disability-accessibility-information>. In order to receive classroom accommodations, it is the student's responsibility to meet with his/her instructor privately and provide a hard copy of the signed Reasonable Accommodation Plan (RAP) each term the student wants to utilize classroom accommodations even if the student has had that instructor in a previous term.

Audio Record Classroom Lecture: Please note that as a student in this class, you may have a classmate who by permission can audio record class lectures for his/her learning purposes. **Only students with prior written permission** from the instructor or the Disabilities Support Coordinator may audio record class lectures - *for educational purposes only*. Students who audio record class lectures are prohibited from selling, transcribing, or distributing the recordings in *any manner*

and are asked to delete the recordings when it is no longer essential for their learning purposes.

Instructors may record their own class lectures, activities, and discussions using electronic video, still photo, or audio recording for educational purposes, including academic research, professional development, and recording of course content for access through online learning and other formats. Every student present will be informed by the instructor of any recording at the beginning of class.

Department Policies

Policy for Students Enrolled in the Co-Requisite Workshop:

The Co-Requisite Workshop is an integral component of this course for students that did not meet the pre-requisite placement requirements. In order to achieve the optimum experience for success, attendance in the Workshop is essential. To that end, a student enrolled in the Co-Requisite Workshop may not miss more than two (2) Workshop classes. **In the event that you should miss more than two meetings of the co-requisite workshop you will be dropped from this class and receive an AF grade in the course.**

College Policies

Non-Discrimination Policy: The NCC Equity Committee is designated to coordinate compliance with the Non-Discrimination Policy and handles all concerns of discrimination that occur on campus that are not covered under Title IX. View more information here [Non-Discrimination Policy and Grievance Procedure](#)

Title IX Policy: Classroom instructors at Nashua Community College are encouraged to create and maintain a safe learning environment in which students feel able to share opinions and related life experiences in classroom discussions, in written work, and in meetings with professors. To the greatest extent possible, this information will be kept private. However, staff and faculty have a legal obligation to report information concerning sexual misconduct, violence and exploitation of individuals per federal statute and in compliance with established policies and procedures at Nashua Community College. If you have been subjected to sexual misconduct, violence or exploitation, we encourage you to contact your Title IX representative Lizbeth Gonzalez, 603-578-8900 x1528 or lgonzalez@ccsnh.edu for support and assistance. View more information here [Title IX Policy and Grievance Procedure](#)

Attendance: Regular attendance and active class participation are essential for academic success. If a student must be absent from class, the student should

contact his/her professor and follow the professor's make up policy listed in the syllabus under course expectations.

Rarely, a student may experience a serious situation that prevents that student from attending class for an extended period. This could be for reasons such as illness/hospitalization, loss of childcare, or lack of transportation. In these situations, the student should notify his/her professor as soon as possible and contact the advising center for assistance NCCAcademicAdvising@ccsnh.edu.

AF Policy: If a student misses more than the number of hours the course meets during a two-week period (e.g. six hours for a three credit course), the faculty may withdraw a student from the course with an "AF" grade. Please note that absences, tardiness, and leaving class early all count towards "missed class time."

In an online or hybrid course, the faculty may withdraw a student for not participating in online activities and/or submitting assignments for two weeks. Logging into Canvas does not count as participation.


Students should also understand an AF grade can be assigned by an instructor or an administrator at any time for reasons other than poor grade performance or failure to meet attendance requirements e.g., violation of the Student Code of Conduct, disruptive behavior, etc.

Please be advised that if the behavior of any student (or students) continually disrupts the learning of his/her classmates, the following steps will be taken 1) verbal warning; 2) meeting with instructor and department chair; 3) referral to Vice President of Academic Affairs and/or removal from the course with AF grade.

An "AF" grade is calculated in the GPA as an "F". Students should refer to the student handbook for additional information about the AF policy.

Canvas: Canvas is the online learning management system used by instructors and learners at Nashua Community College. Instructors will post syllabi, course related documents and grades in Canvas. Students may be required to submit assignments and/or take assessments through Canvas and/or participate in discussion boards. **If class is ever cancelled because of instructor illness or inclement weather, students will need to check Canvas for their assignment.**

24/7 Canvas Support: To access support through email, phone or chat

click on the  icon. Students can also find guides, videos, and a Canvas community by clicking on the *CCSNH Resources* icon on the tool bar at the left of the Canvas screen then choosing Canvas Resources.

If you have forgotten your Easy Login Password information, please visit the following link: <https://password.ccsnh.edu/accounts/Reset>

College Email System: Nashua Community College has established a College email system as a means of the College sending official information to enrolled students, and for students to send communication to their instructors and College personnel. All students registered at NCC will be assigned a College email account/address to be used as the only email address for all email communication: 1) sent to the students from their instructors and from all College personnel; and, 2) sent by the students to their instructors and to all College personnel.

In addition:

- Students should check their College email account regularly to ensure they are staying current with all official communications. Official communication includes, but is not limited to, policy announcements, registration and billing information, schedule changes, emergency notifications and other critical and time sensitive information.
- Students should also check their college email account to be sure that they are current with all email communication from their faculty.
- The student email account/address should be the only e-mail address students use to send email to faculty and College personnel so that student email is recognized and opened.
- This service is provided exclusively to the students of NCC. Accounts are for individual use only and are not transferable or to be used by any other individual.
- Students using their College email account do so under the policies set forth in the Student Handbook under "Student Computer Conduct Code".

Sensitive Materials Policy: During the semester, to cover certain academic topics, there may be occasions to view or discuss material which may not meet the student's own personal definition of appropriateness. At such times, every student has the right to decide not to participate. Every effort will be made by the instructor to notify students in advance of when such sensitive material will be used so that students can make alternative arrangements. Faculty will guide students in the identification of alternate learning opportunities consistent with relevant course objectives so that students opting out of scheduled "sensitive" learning experiences will not be penalized academically in any way. Please note the opportunity to leave the classroom discretely is always available to each student when such sensitive material is being discussed. The student then has the responsibility before the next class meeting to inform the instructor as to the reason for leaving.

Plagiarism Policy: Plagiarism is a serious violation of a student's academic integrity and the trust between a student and his or her teachers. Plagiarism is the act of a person presenting another person's work as if it were his or her own original work. Such acts of plagiarism include, but are not limited to:

1. A student submitting as his or her own work an entire essay or other assignment written by another person.

2. A student submitting as his or her own creation the artwork (including but not limited to a painting, drawing, photograph, object, digital representation) of another person.
3. A student taking word for word a section or sections of another person's work without proper acknowledgment of the source and quotation.
4. A student using statistics or other such facts or insights as if these were the result of the student's efforts and thus lacking proper acknowledgment of the original source.
5. The paraphrasing of another person's unique work with no acknowledgment of the original source.
6. Copying another student's work on a quiz or test.

Some instructors may consider self-plagiarism to be a form of plagiarism. Self-plagiarism includes **submitting the same paper** in response to **two different** assignments. Please consult with your instructor and carefully review instructor expectations posted on your syllabus if you have any questions.

When a student is found to have plagiarized an academic assignment, it will be up to each instructor to determine the penalty. Depending on the severity of the incident, this could range from a warning to a loss of credit for the assignment. In all cases of plagiarism, the instructor will notify the student's advisor by posting an alert on EAB Navigate. The advisor will then document the incident on EAB using advisor notes. If any further incidents of plagiarism are reported to the student's advisor, additional sanctions will be imposed. These may include notification of the Vice President of Academic Affairs; loss of credit for the course; suspension or dismissal from a department program; academic probation; and/or expulsion from the College.

Credit Hour Guidelines

1. A credit hour shall be the equivalent of one (1) hour of classroom or direct faculty instruction and a minimum of two (2) hours of out-of-class student work each week for 15 or 16 weeks.
2. A credit hour shall be allocated based on the following:

Category	Contact Hours per Week	Contact Hours per Sem. (based on minimum 15 week semester)
Class	1	15
Laboratory	2 or 3	30-45
Clinical	3 to 5	45-75
Practicum, Fieldwork	3	45
Internship	3 to 6	45-90
Co-op	Variable by Dept.	Variable by Dept.