# Course Information

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| Course Code | Term | Section: DATA3320 | 1241 | XXXX |
| Course Name: Predictive Analytics Foundations |
| Course Details:  By combining design and inferential thinking, data science is redefining how organizations solve challenging problems, resulting in efficiency/productivity improvements. This foundational class level class builds on the data preparation and statistics learning outcomes from earlier courses. This course will explore key areas of predictive analytics, including question formulation, data collection and statistical inference, predictive modelling, and decision-making. Through a strong emphasis on data mining, quantitative critical thinking, and exploratory data analysis, this class covers key principles and techniques of predictive analytics at a foundational level. |
| Course Start/End Dates: Sep 1- Dec 15, 2024 |
| Delivery Method: |
| Day, Time, Location: |

**Instructor Information**

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| *Name* |  |
| *Contact Information* |  |
| *Availability for Student Support* |  |

**Learning Resources**

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| Learning Materials:  Severance, C. (2023). *Python for Everybody: Exploring Data in Python 3.* Createspace Independent Publishing Platform.ISBN-10: 1530051126, ISBN-13:‏ 978-530051120  Fenner, M. (2019). *Machine Learning with Python for Everyone.* Addison-Wesley Professional. ISBN-10: 0134845625, ISBN-13: 978-0134845623 |
| Additional Learning Resources:  McKinney, W. (2022). *Python for Data Analysis, Data Wrangling with pandas, NumPy, and Jupyter(3E).* O'Reilly Media. ISBN-10: ‎109810403X, ISBN-13: ‎978-1098104030 |

**Technology Requirements**

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| **JRSSB Minimum Requirements: Students in any JRSSB course should have the minimum technology requirements as specified in the Course Outline.** |

**Assessments | Evaluation**

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| *Name:* Peer Academic Support & Class Engagement *(Weighting:5%)* Note: Universal Design for Learning (UDL) has been built into this Assessment. |
| *Date:* Throughout the term |
| *Details:* An online academic support community is where you could seek advice or answers from your peers. Furthermore, you could provide any academic support to your peers,You are expected toask questions if you have any, orshare and discuss some of your "light bulb moment" - learning moment, orhelp your peers to solve some of the questions posted, orpropose changes to the curriculum.  1. Class Engagement (where appropriate)  Class engagement is an important part of the academic process and should be considered both a privilege and a responsibility. |

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| *Name: Python Programming Lab Assignments (Weighting: 10%)* *Note: Universal Design for Learning (UDL) has been built into this Assessment.* Each lab activity is open for at least two weeks to accommodate learners. |
| *Date:* Due at 23:55 on the Monday of the week specified in the course plan or at the instructor's discretion. |
| *Details:* This activity will allow students to apply relevant concepts and skills to a situation or phenomenon, analyze ideas and concepts and consider relationships among them, evaluate a decision, perspective or a particular way of doing something, and moreover create new ideas or perspectives given a particular topic or issue.Even though there is a 10% weight assigned to the activities, it is primarily designed to provide students with feedback on their understanding of the topic via interactions the instructor and peers. |

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| *Name: Machine Learning Assignments (Weighting:20 %)* *Note: Universal Design for Learning (UDL) has been built into this Assessment.* Each assignment is open for at least two weeks to accommodate learners. |
| *Date:* Due at 23:55 on the Monday of the week specified in the course plan or at the instructor's discretion. |
| *Details:* The Machine Learning Assignment typically focuses on applying machine learning techniques to real-world datasets. This assignment is designed to assess your understanding of machine learning concepts, your ability to choose appropriate algorithms, and your proficiency in using programming languages and tools commonly employed in data science and machine learning. |

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| *Name: Quiz (Weighting:10 %)* |
| *Date:* The deadline is specified in the course plan or at the instructor's discretion. |
| *Details:* This activity assesses your understanding of Python programming concepts and your ability to write Python code. The quiz will cover various topics, from basic syntax to more advanced programming concepts. It consists of a combination of multiple-choice questions, code snippets, and true/false questions. |

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| *Name: Term Exams (Weighting: 40%)* |
| *Date:* Deadlines are specified in the course plan or at the instructor's discretion. |
| *Details:* A term exam will consist of questions of multiple-choice, true/false, multiple selections, and open-ended type questions related to the material in the chapter(s). Even though a 40% total weight is assigned to the 2 term exams, it is primarily designed to provide students with feedback on their understanding of the chapter(s) content as they progress through the course. |

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| *Name: Data Mining Project (Weighting:15 %)* *Note: Universal Design for Learning (UDL) has been built into this Assessment.* Each assignment is open for at least two weeks to accommodate learners. |
| *Date:* Due at 23:55 on the Monday of the week specified in the course plan or at the instructor's discretion. |
| *Details:* The Data Mining Project is a significant component of this course, providing students with hands-on experience in applying data mining techniques to real-world datasets. This project will require students to explore, analyze, and extract valuable insights from data, emphasizing the use of various data mining algorithms and tools. |

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| **Exam Accommodations**: Accommodations, such as extra time, may already be built-in or provided using universal design for learning (UDL) practices for all students in which case further accommodation may not be required. Please discuss with your instructor.  **Exam Conflicts:** JRSSB actively mitigates known scheduling-based conflicts where possible during the coordinated assessment period. Students are responsible for ensuring their coordinated assessment period is free of scheduling-based conflicts by reporting any un-addressed scheduling-based conflicts to JRSSB’s exam coordination team. Students must report un-addressed scheduling-based conflicts to [busexams@nait.ca](mailto:busexams@nait.ca) immediately upon discovery and prior to the start of the coordinated assessment period.  **Exam Deferrals**: The Deferred Exam process is designed to assist students with extenuating circumstances beyond the student’s control. An exam must be at least 20% of the final course grade to be eligible for a deferral. Please contact your instructor regarding exams worth less than 20% of your final mark. The Student must initiate NAIT's Deferred Exam Booking Process; a completed Deferred Exam Request Form(s) must be sent to [busexams@nait.](mailto:busexams@nait.ca)ca for processing. For more details, please refer to the Grades Procedure, section 4.5. If your request is approved, you will pay an exam deferral fee for each exam. Payment is required prior to writing a Deferred Exam. |

**Other Details**

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| **Academic Integrity**:  According to Academic Integrity Procedure (2021):  Academic Integrity is demonstrated by students taking steps to make sure that their instructor can accurately assess a student’s skill level for a given topic. This means that the work students submit must be their own, within the parameters of the assigned work to be assessed, and any part of that work that is not their own is appropriately attributed.  Students also demonstrate Academic Integrity by taking steps to ensure that their efforts are not used by other students to misrepresent their skills during assessment. In other words, supporting others in violations of the principles of Academic Integrity is itself a violation of these principles.  When students, intentionally or not, obfuscate, deceive, or hinder the ability of NAIT instructors and programs to assess their performance they will be considered to have violated the NAIT principles of Academic Integrity. These violations are categorized as Academic misconduct. [(SR 1.3, Section 1.0., 2021)](https://naitca.sharepoint.com/sites/pd/published%20documents/policies%20and%20procedures/academic%20policy/student%20rights%20&%20responsibilities%20policy/sr%201.3%20academic%20integrity%20procedure.pdf)  Every NAIT student must complete NAIT Modules on Academic Integrity for your awareness and to increase your knowledge as to the expectations – knowledge that is critical to your success.  **Student Responsibility**: It is expected that students will be responsible citizens of the Institute by following the Student Rights and Responsibilities Policy (SR 1.0) (2021). As such, each student will assist in the preservation of Institute property and assume responsibility for their education by staying informed of and abiding by academic requirements and policies; demonstrate respect toward others; and meet expectations concerning attendance, assignments, deadlines, and appointments. [(Student Rights and Responsibilities Policy, SR 1.0., 2021)](https://naitca.sharepoint.com/sites/pd/published%20documents/policies%20and%20procedures/academic%20policy/student%20rights%20&%20responsibilities%20policy/sr%201.0%20student%20rights%20and%20responsibilities%20policy.pdf)  **Equity, Diversity and Inclusion**: NAIT is committed to advancing equity and to actively and intentionally creating learning environments that promote a sense of belonging and dignity that ensure all people are safe, respected and valued. Acknowledging that every member of the NAIT community has a role in and responsibility to this work, NAIT provides the resources and support necessary for programs, departments and individuals to champion equity, diversity and inclusion and address barriers in meaningful ways.  **Territorial Acknowledgement**: At NAIT, we honour and acknowledge that the land on which we learn, work and live is Treaty Six territory. We seek to learn from history and the lessons that have come before us, and to draw on the wisdom of the First Peoples in Canada. Only through learning can we move forward in truth and reconciliation, and to a better future together. |
| **Accessibility and Universal Design for Learning:** This course will be delivered according to the principles of Universal Design for Learning. |
| Student Engagement Expectations: At NAIT, every 3 credits represent a total of 135 learning hours (note this does not include WIL Courses). This includes scheduled learning hours (classroom time, labs, shops, etc.) in various settings (face-to-face, blended, hyflex, remote-live, and remote on-demand) and student self-directed learning. Self-directed learning is defined as students engaging with course content on their own outside of scheduled class time. In a 15-week term, students are expected to spend approximately 9 hours per week on scheduled and self-directed learning (for each 3 credit course, 18 hours for a 6 credit course). Please note that the scheduled hours can be affected by the number of holidays in a term. |

**Online Synchronous Learning**

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| Please note that any synchronous learning session, including any questions or comments submitted by students during such sessions, may be recorded and made available to students following completion of the session(s). This collection of personal information is carried out pursuant to section 33(c) of the Alberta *Freedom of Information and Protection of Privacy Act*, for the purpose of providing reference materials for students while studying, or for the purpose of assisting students who require medical or other accommodations. If you have any questions regarding the collection and use of this personal information, please contact: Student Resolution Office NAIT Main Campus | 11762-106 Street NW, Edmonton, AB T5G 2R1  Tel: 780-378-6136 | Email: resolutions@nait.ca |

**Student Support**

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| Your instructor should always be your first point of contact for items concerning course content, navigating Moodle, timelines, assessment instructions, expectations, and grading. |
| Learning Services offers a variety of supports to help you develop your learning skills and achieve your full potential. Learn more about the services and what they have to offer for everyone at NAIT. Please see the Learning Services block in your Moodle Course/Site(s). |
| Library Services: The NAIT Library is a hub of learning, exploring, and creating. They support the NAIT community through access to resources, collaborative and exploratory spaces, cutting edge technology, and programming that supports academic excellence and lifelong learning. See the NAIT Library block in your Moodle Course/Site(s). |
| **I**nformation **T**echnology **S**ervices (ITS): Connect with the ITS Help Desk for technical support related to device issues and for support during an online assessment/examination. [https://www.nait.ca/itspublic >](https://www.nait.ca/itspublic) get help | 780.471.8624 |
| The JR Shaw **B**usiness **I**nformation **C**entre (BIC) is our centralized unit providing Student facing supports for all JR Shaw School of Business programs. Our Program Specialists (student advisors) can assist in providing general information and program specific administrative and advising supports.  Phone:780.471.8998 |E-mail: [businfo@nait.ca](mailto:businfo@nait.ca) | Location: CAT 301 |