SFU OFFICE OF THE PROVOST AND VICE-PRESIDENT ACADEMIC

vpacad@sfu.ca
www.sfu.ca/vpacademic
TEL: 778.782.3925
FAX: 778.782.5876

8888 University Drive
Burnaby, BC
Canada V5A 1S6

MEMORANDUM

ATTENTION	Senate	**DATE**	December 12, 2024
FROM	Peter Hall, Vice-Provost and Associate Vice-President Academic, on behalf of Dilson Rassier, Provost and Vice-President Academic and Chair, SCUP	**PAGES**	1/37
RE:	Program Change for the Graduate Certificate in Business Analytics (SCUP 24 - 58)		

At its meeting on December 4, 2024, SCUP reviewed and approved the program changes for the Graduate Certificate in Business Analytics.

> **Motion:** That Senate approve and recommend to the Board of Governors the program changes for the Graduate Certificate in Business Analytics within Beedie School of Business, effective Fall 2025.

For Information

Included with the program changes and approved by SGSC under delegated authority are the following curriculum changes, effective Fall 2025.

New Courses:

1. BUS 785 Advanced Business Analytics
2. BUS 787 AI in Business
3. BUS 788 Customer Analytics
4. BUS 789 Marketing and Generative AI

C: Sudheer Gupta, Associate Dean, Graduate Programs, Beedie School of Business

SFU GRADUATE STUDIES

Simon Fraser University
Maggie Benston Centre 1100
8888 University Drive
Burnaby, BC V5A 1S6

TEL 778.782.3042
FAX 778.782.3080

gradstudies@sfu.ca
www.sfu.ca/grad

MEMORANDUM

ATTENTION Senate Committee on University Priorities (SCUP)

DATE November 20, 2024

FROM Mary O'Brien,
Chair of Senate Graduate Studies Committee (SGSC)

RE: Program Changes

For Approval: At its meeting on November 20, 2024, the SGSC approved the following program changes and is recommending them to SCUP for approval, effective **Fall 2025:**

Motion:
That SCUP approve and recommend to Senate the program changes for the Graduate Certificate in Business Analytics within the Beedie School of Business, effective Fall 2025.

For Information: Included with the program changes and approved by SGSC under delegated authority are the following curriculum changes, effective Fall 2025:

1) Calendar Entry Change: Graduate Certificate in Business Analytics
2) New Course: BUS 785 Advanced Business Analytics New Course: BUS 787 AI in Business
   New Course: BUS 788 Customer Analytics
   New Course: BUS 789 Marketing and Generative AI

SFU BEEDIE SCHOOL OF BUSINESS

Segal Graduate School | Office of the Associate Dean, 500 Granville Street, Vancouver, BC V6C 1W6 | TEL 778.782.9255, FAX 778.782.5122 | bsbgrade@sfu.ca

Memo to SGSC

To: **Senate Graduate Studies Committee**
From: **Sudheer Gupta, Associate Dean, Graduate Programs**
Re: **Program Changes, Certificate Proposals and Roadmap for Graduate Business Programs**
Date: **October 9, 2024**

The following curriculum revisions have been approved by the Beedie School of Business and are forwarded to the Senate Graduate Studies Committee for approval.

Please include them on the next SGSC agenda.

- **Innovation and Value Creation Certificate**
- ~~**Sustainable Futures Certificate**~~
- **Update to Business Analytics Graduate Certificate**
- ~~**Roadmap for Grad Programs**~~
- ~~**Changes to Beedie Graduate Programs**~~

Thank you for your attention herein. Should you have any questions or concerns, please do not hesitate to contact me.

Sudheer Gupta
Associate Dean, Graduate Programs, Beedie School of Business

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MEMORANDUM

ATTENTION Mary O'Brien, Vice-Provost and Dean, Graduate Studies

FROM Sudheer Gupta, Associate Dean, Graduate Programs, SFU Beedie School of Business

RE: Changes to Beedie Graduate Programs

DATE October 24, 2024

Beedie Graduate Programs has been reviewing its portfolio of programs since May 2023, focused on the following programs and cohorts: Full Time MBA (FT) (including the Early Career cohort), Part Time MBA (PT) (including Online MBA cohort), Management of Technology MBA (MOT), and Graduate Diploma in Business Administration (GDBA). The Review Committee worked with three main objectives:

1. Make our programs more student centric by improving flexibility, optionality and accessibility in curriculum and delivery mode
2. Refresh and modernize the curriculum to ensure students are ready for tomorrow's challenges
3. Simplify and streamline the program portfolio and structure to realize efficiencies in program management, marketing and recruitment that would enable sustainable growth in our graduate programs.

The committee engaged in extensive data collection and analysis, benchmarking, and consultations with and feedback from our various communities, and provided regular updates on its work in the form of written reports and presentations. All data and reports are available. The committee's main recommendations are summarized below:

Current	**Proposed**
Set study plans (no curriculum choices)	Core (required courses) + Electives and Certificates (choices)
FT on 3/2 credit structure; PT, MOT, & GDBA on 4/2 credit structure	Credit structure alignment across all MBA programs
Fixed cohort structure	Multi-cohort structure for Core and Electives
Fixed class locations for each program (Segal, Surrey, or Online)	Flexible class locations for students to tailor their learning journeys

The proposed changes were discussed and approved by the SFU Beedie GCC (Apr 24, 2024), SGSC (June 4), SCUP (July 10), and Senate (Sep 9).

The following elaborates on some of these recommendations and how they are being implemented.

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1. Revised Core, Electives and Certificates:
Our approved program changes outlined the following structure:
"Students complete…": (40 credits of core courses, all of which are already approved courses offered regularly in our programs),
"and a minimum of 6 elective graduate units from Business, chosen in consultation with the academic director,"
"and a minimum of 12 units from an approved Graduate Certificate, or 12 additional graduate units from Business, chosen in consultation with the academic director."

To better align our programs with the Beedie School's mission and values, our proposed certificates directly address our School priorities: *Innovation and Entrepreneurship*, *Sustainability,* and *Global Perspective*. This brings more consistency in our programs and also addresses one of the main recommendations in our last external review as noted in Senate-approved 2023 Beedie School of Business Accreditation Action Plan (Senate S.23-09). We are proposing two additional certificates to address the strong needs of the business community and student demand that also leverage our faculty strengths: *Digital Transformation and Business Analytics*, and *Financial Analysis*.

To reduce unnecessary effort and duplication, we looked at our approved certificates to assess if those could be revised to meet the current and future needs. Of the five certificates currently planned, three are existing ones which we are modifying, two are new. The attached roadmap shows all certificates we intend to offer and the all the courses currently approved or in process as part of this redesign. We are also leveraging existing courses to the extent possible. Some details follow:

(i) *Digital Transformation & Business Analytics:* This certificate was approved in 2021 as part of our Masters in Management (MiM) new degree proposal. The MiM proposal was not approved and therefore the program was never launched. Consequently, the approved certificates were not launched either. While the core learning outcomes and other details remain the same, the certificate is being updated to meet the current and future needs and reflect more updated content in the form of new courses that have wider appeal across redesigned programs. Name is being changed to reflect the refreshed curriculum.
(ii) *Innovation and Value Creation:* This certificate was also part of MiM approvals with the same rationale for updated content and name change as above.
(iii) *Global Management:* New certificate proposal.
(iv) *Sustainable Futures:* New certificate proposal.
(v) *Financial Analysis.* This is an existing certificate that has been used as an exit pathway for our MSc Finance students. We are making changes to make it more attractive to graduate students in all MBA programs. This allows our school to leverage resources across multiple programs which not only reduces expenses but provides students with more course options. Course changes are being made to reflect the current state of knowledge, practice and course offerings.

We do not anticipate any additional new certificate offerings for these programs in the next two years.

2. Course Changes and New Courses:
The program redesign also necessitated several changes to existing courses (including name change and/or unit change) to better align the streamlined core with electives and certificates, and update course content to reflect the latest knowledge and practice. These changes include:

BUS 703 (Managerial Economics): Unit decrease (SGSC approved June 4, 2024).

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BUS 730 (Indigenous Business Environments in Community): Unit decrease (SGSC approved June 4, 2024).
BUS 710 (Global Business Environment): Title change to more accurately reflect updated content of this course which now becomes part of redesigned core and is a prerequisite for all courses in *Global Management* certificate. (submitted to SGSC for approval.)
BUS 714 (Innovation and Entrepreneurship): Title change to more accurately reflect updated content of this course which now becomes part of redesigned core and is a prerequisite for all courses in *Innovation and Value Creation* certificate. (not yet submitted for approval.)

Additionally, the program redesign necessitated creation of 15 new courses which could be offered as electives and packaged with existing courses towards one or more of the five certificates noted above. These are listed below and have been or are being submitted to SGSC for approval:

BUS 567: Embedding Sustainability into Strategy
BUS 568: Being in Good Relations with Indigenous Peoples
BUS 571: Sustainable Value Chains
BUS 573: Responsible Marketing
BUS 574: Strategy for Nonprofit and Public Sector Leaders
BUS 575: Product Management
BUS 576: Responsible Innovation
BUS 577: Platform Power: Business in the Digital Age
BUS 578: New Venture Creation: From Concept to Scale
BUS 732: Global Strategy
BUS 743: Macroeconomics, Government, and Business in the Global Economy
BUS 785: Advanced Business Analytics
BUS 787: AI in Business
BUS 788: Customer Analytics
BUS 789: Marketing and Generative AI

In designing new courses, our faculty worked collaboratively, adopted a holistic, cross-disciplinary perspective, minimized content overlap, and leveraged latest research and practice. Each certificate has 6 units of core coursework, including at least one core course that is not part of the MBA core, to ensure common learning outcomes. Most certificates have more electives listed than the minimum needed to ensure choices for students and provide flexibility for the School in meeting student demand with limited resources and faculty availability. There are also several approved graduate courses, of which a small subset could be offered in any given year as stand-alone electives to provide more choices to students.

After these certificates and related new courses and course changes are approved, we do not foresee any other major changes in the next two years for these programs and cohorts (full time, part-time including online, and GDBA). Minor changes may happen such as adding a few courses, deleting an unused course or modifying a course if absolutely needed. We remain committed to minimizing unnecessary changes and paperwork for either of our teams.

For further clarity and completeness, we have attached the following documents as requested:

1. A roadmap summarizing the revised MBA curriculum, certificates and courses.
2. An Excel spreadsheet listing all of our graduate credentials, courses and their status.

SFU BEEDIE SCHOOL OF BUSINESS

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We appreciate your help in implementing our redesigned graduate programs and ensuring our credentials meet the highest standards our students expect and deserve.

Please do not hesitate to contact me in case of any questions or concerns.

Sudheer Gupta
Associate Dean, Graduate Programs
Beedie School of Business
Simon Fraser University

Calendar Entry Change for Business Analytics Graduate Certificate

Summary of change:

Title and short description have been updated to reflect digital literacy and emerging technologies content. Course list has been expanded to offer flexibility and student curriculum choice within the subject matter area. Program length has been extended from two terms to three to allow MBA students enrolled both full-time and part-time adequate completion time within their MBA degree and allow for one year completion time as a stand-alone graduate certificate.

Rationale for change:

This is one of four graduate certificates being proposed as part of the refreshed MBA curriculum starting Fall 2025, in alignment with MBA calendar changes to reflect a core plus electives/specialized coursework program structure. The Analytics certificate was developed and approved in 2021 and has never been offered. The certificate goals, contribution to SFU's academic mission, enrolment plan, faculty resources, graduation requirements, and potential employment outcomes remain the same as the 2021 Analytics Certificate Full Program Proposal.

The certificate title, short description, and course list have been broadened to align with the Fall 2025 MBA academic calendar changes, providing optionality for students regarding course topics and delivery mode, and flexibility for curriculum to stay modernized and on-trend with market demands particularly in the ever-changing space of technology in business and digital skills development. BUS 706 and BUS 709 (current MBA program requirements) have been included to allow for future laddering of this certificate into the MBA program. The program length has been extended from two terms to three to allow MBA students enrolled both full-time and part-time adequate completion time within their MBA degree and allow for one year completion time as a stand-alone graduate certificate offering.

Effective term and year: Fall 2025

Will this change impact current students? If yes, what is the plan for current students?

No impact – there are currently no students enrolled in this certificate, with no offering or enrolment prior to Fall 2025.

FROM	TO
# ~~Business Analytics~~ GRADUATE CERTIFICATE ~~The graduate certificate in business analytics features programming in the quantitative digital building block skills needed in the workforce such as articulating data requirements and processes, and using analytic, statistical and visualization techniques. This program is for aspiring functional analysts and data-driven decision makers.~~ ## Admission Requirements Applicants must satisfy the University admission requirements as stated in Graduate General Regulation 1.3 in the SFU Calendar. For more information, please contact the Beedie School of Business. ## Program Requirements This program consists of course requirements for a minimum of 12 units. Course work may be substituted at the discretion of the ~~academic director.~~	# Digital Transformation and Business Analytics GRADUATE CERTIFICATE **The graduate certificate in digital transformation and business analytics focuses on the use of digital technologies in business transformation. The certificate features programming in digital building block skills needed in the workforce such as analytical thinking, technological literacy, articulating data requirements and processes, applications of artificial intelligence, and using analytic, statistical and visualization techniques. This program is for aspiring functional analysts and data-driven decision makers.** ## Admission Requirements Applicants must satisfy the University admission requirements as stated in Graduate General Regulation 1.3 in the SFU Calendar. For more information, please contact the Beedie School of Business. ## Program Requirements This program consists of course requirements for a minimum of 12 units. Course work may be substituted at the discretion of the **Dean and Vice-Provost of Graduate Studies.**

~~Students must complete all of~~ ~~BUS 721 - Special Topics in Business Administration (3)~~ BUS 786 - Data Science for Business (3) BUS 830 - Data Management and Business Solutions (3) BUS 831 - Analyzing and Visualizing Business Data (3) # Program Length Students are expected to complete the program requirements within ~~two~~ terms.	**Students must complete** **BUS 706 – Business Analytics (3) *** **BUS 709 – Managing Information (3)** **BUS 787 – AI for Business (3)** **and a minimum of 3 units from the following** **BUS 785 – Advanced Analytics (3)** BUS 786 - Data Science for Business (3) **BUS 788 – Consumer Analytics (3)** **BUS 789 – Marketing and Generative AI (3)** BUS 830 - Data Management and Business Solutions (3) BUS 831 - Analyzing and Visualizing Business Data (3) ***Students who complete BUS 706 and/or BUS 709 as MBA program requirements will select alternate certificate courses to complete 12 units. Students who complete BUS 706 and/or BUS 709 as certificate requirements and subsequently ladder into the MBA program will select alternate MBA electives to complete 58 units.** # Program Length Students are expected to complete the program requirements within **three** terms.

SFU GRADUATE STUDIES

NEW GRADUATE COURSE PROPOSAL

Course Subject (eg. PSYC) BUS	**Number (eg. 810)** 785	**Units (eg. 4)** 3

Course title (max. 100 characters): Advanced Business Analytics

Short title (for enrollment/transcript, max. 30 characters): Advanced Business Analytics

Course description for SFU Calendar (course descriptions should be brief and should never begin with phrases such as "This course will..." or "The purpose of this course is..." If the grading basis is satisfactory/unsatisfactory include this in the description. Max. 50 words)

Builds on concepts introduced in BUS 706 to equip students with advanced skills in the use of data and models to make decisions. Focuses on stochastic, prospective, competitive, goal and productivity analytics.

Rationale for introduction of this course (if more space is required, add a separate page)

This is proposed an elective within the new/revised certificate in Digital Transformation and Business Analytics.

Term of initial offering (eg. Fall 2019)	Fall 2025	**Course delivery** (eg. 3 hrs/week for 13 weeks)	3.5 hrs/week for 10 weeks
Frequency of offerings/year	2	**Estimated enrollment per offering**	35

EQUIVALENT COURSES

Courses that replicates the content of this course to such an extent that students should not receive credit for both courses. Please select the one that is most relevant.

☐ **SEQUENTIAL COURSE**	☐ **ONE-WAY EQUIVALENCY**	☐ **TWO-WAY EQUIVALENCY**
[is not hard coded in the student information management system (SIMS).] Students who have taken (place relevant course(s) in the blank below (ex: STAT 603)) first may not then take this course for further credit.	[is not hard coded in SIMS.] (Place relevant course(s) in the blank below (ex: STAT 603)) will be accepted in lieu of this course.	[is hard coded and enforced by SIMS.] Students with credit for (place relevant course(s) in the blank below (ex: STAT 603)) may not take this course for further credit.

Does the partner academic unit agree that this is a two-way equivalency? ☐ YES ☐ NO

Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).

Prerequisite and/or Corequisite

BUS 706 (prereq)

Criminal record check required? ☐ Yes (if yes is selected, add this as prerequisite) | **Additional course fees?** ☐ Yes ☐ No

Campus where course will be taught ☐ Burnaby ☐ Surrey ☑ Vancouver ☐ Great Northern Way ☐ Off campus

Course Components * ☑ Lecture ☐ Seminar ☐ Lab ☐ Capstone ☐ Practicum ☐ Online ☐ Other: _____

Grading Basis ☑ Letter grades ☐ Satisfactory/ Unsatisfactory ☐ In Progress / Complete

* See important definitions on the curriculum website.

Repeat for credit? ☐ Yes ☑ No	**Total completions allowed?**	**Repeat within a term?** ☐ Yes ☑ No
Required course? ☐ Yes ☑ No	**Final exam required?** ☐ Yes ☑ No	

Combined with an undergraduate course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students. Please include a copy of the undergraduate course outline and fill out the Equivalent Courses section above.

RESOURCES

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course Srini Krishnamoorthy, Michael Johnson, Gohram Baloch
Additional faculty members, space, and/or specialized equipment required in order to offer this course

CONTACT PERSON

Academic Unit / Program	**Name (typically, Graduate Program Chair)**	**Email**
Beedie Grad Programs	Ariel Johnson	busgradprogram@sfu.ca

ACADEMIC UNIT APPROVAL

☑ A course outline / syllabus is included

Non-departmentalized faculties need not sign

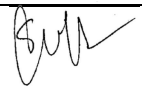
Graduate Program Committee	**Signature**	**Date**
Department Chair	**Signature**	**Date**

FACULTY APPROVAL

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content

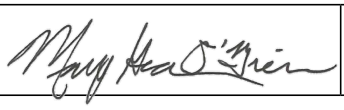
Overlap check done? ☑ YES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Faculty Graduate Studies Committee Sudheer Gupta	**Signature** 	**Date** November 15, 2024

A library review will be conducted. If additional funds are necessary, Graduate Studies will contact the academic unit prior to SGSC.

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee Mary O'Brien	**Signature** 	**Date** November 20, 2024

ADMINISTRATIVE SECTION (for Graduate Studies office only)

Library Check: _____
Course Attribute: _____
Course Attribute Value: _____
Instruction Mode: _____
Attendance Type: _____

If different from regular units:
Academic Progress Units: _____
Financial Aid Progress Units: _____

SFU BEEDIE SCHOOL OF BUSINESS
SEGAL GRADUATE SCHOOL

BUS 785: Advanced Business Analytics

Instructor:	Semester:
Email:	Class Time:
Phone:	Office Hours:

Course Description

This course builds on core course BUS 706: Business Analytics to equip students with advanced skills in the use of **data** and **models** to make decisions.

Objectives

The course is designed to provide you with the following skill set:

- **Stochastic Analytics**: Decision making under uncertainty by employing decision analysis and Monte Carlo simulation
- **Prospective Analytics**: Making predictions for better decision-making using quantile and Poisson regression
- **Competitive Analytics:** Employing game theory for decision making with competitive interactions
- **Goal Analytics**: Decision making with multiple objectives using goal programming
- **Productivity Analytics**: Improving efficiency by utilizing duality and data envelopment analysis

Course Expectations

During this course you can expect at least 6-8 hours of work weekly. These activities will include self-study, watching learning videos, preparing cases, and answering practice questions.

Course Delivery

Students who are in Vancouver and feeling well are expected to attend class in person. As part of your prep for each class, you'll be required to watch learning videos. In-person sessions will focus on problem solving and case discussions.

Books and Materials

There is no textbook required for the course. However, you are required to purchase the Harvard case pack. The instructor authored cases and mini cases are free of charge and will be provided on Canvas.

We will use R and Microsoft Excel as the modelling platforms in the course.

Learning and Assessments

Assessment summary

Evaluation in the course will be based on a combination of group and individual work. The grading norms for all courses at SFU Beedie School of Business will be observed. In other words, students with the top marks relative to the class average will receive the top grades.

	Evaluation Component	Breakdown
Individual	Class Contribution	5%
	Final Exam	50%
Group	Midterm Group Report	45%
	Total	100%

Class Contribution

Expressing your business and analytical perspective is an essential requirement in any organizational role. Your instructor will measure your contribution to class discussions daily. Some examples of valued contributions include:

- Responding to the instructor's questions,
- Providing insights to clarify concepts to classmates,
- Advancing classmates' comments, and
- Emphasizing learning points.

You will be assigned a contribution score for every class on a scale of 0 – 5. An explanation of the scale is below:
0: Absence without informing instructor
1: Absence after informing instructor
2: Below expectation
3: Approaches expectations
4: Meets expectations
5: Exceeds expectations
6 (5 + bonus point): Exceeds expectations and sets new standards

Your contribution grade will be the median of your class contribution scores from every class. The median is used (rather than the mean) to provide allowance for situations where you might miss a class because of unforeseen commitments. The median, as you may know, is robust and less affected by extreme values as compared to the mean. You will receive feedback on your class contribution at the halfway stage of the course.

Midterm Group Report

The Midterm Group Report will be a case exercise in Stochastic and Prospective Analytics.

Final Exam

The Final Exam will be a business case that you will tackle individually. You'll be allowed to access the learning material from the course.

Course Policies

We will adopt a **no-questions** policy for the exams. This is to ensure that no student gets an advantage by seeking extra information from the instructor. In case of doubt, state your assumption. The instructor reserves the right to allocate part marks based on the quality of your assumption.

Use of Zoom

The Zoom simulcast of the in-person sessions will be recorded by your instructor. As a result, Simon Fraser University may collect your image, voice, name, personal views and opinions, and course work under the legal authority of the University Act and the Freedom of Information and Protection of Privacy. This information is related directly to and needed by the University to support student learning only (i.e., posting in the Learning Management System for students to review). If you have any questions about the collection and use of this information please contact your instructor.

Inclusiveness and Accommodations

Read the Diversity and Inclusion Community Guidelines and operate from these guidelines while in class, tutorials and any team meetings outside class

All of us have different access needs; some of these may be readily apparent, while others may not. Each student is equally important to the success of the course, so we will work together to make sure that everyone can participate. I want all students to have the opportunity to perform at their highest potential. If a student has a disability that may require accommodations, please notify the Centre for Accessible Learning (https://www.sfu.ca/students/accessible-learning.html) as soon as possible. The Centre for Accessible Learning exists to ensure that fair and reasonable accommodations are made for students who need them.

Course Schedule

You will be able to access the learning material for each session on Canvas. The course schedule is:

Session	Module
1	Stochastic Analytics
2	Stochastic Analytics
3	Prospective Analytics
4	Prospective Analytics
5	Competitive Analytics
6	Competitive Analytics
7	Goal Analytics
8	Goal Analytics
9	Productivity Analytics
10	Productivity Analytics
11	Final Exam

Academic Integrity

SFU's Academic Integrity website http://www.sfu.ca/students/academicintegrity.html is filled with information on what is meant by academic dishonesty, where you can find resources to help with your studies and the consequences of cheating. Check out the site for more information and videos that help explain the issues in plain English.

Each student is responsible for his or her conduct as it affects the University community. Academic dishonesty, in whatever form, is ultimately destructive of the values of the University. Furthermore, it is unfair and discouraging to the majority of students who pursue their studies honestly. Scholarly integrity is required of all members of the University. http://www.sfu.ca/policies/gazette/student/s10-01.html

ACADEMIC INTEGRITY: YOUR WORK, YOUR SUCCESS

About the Course Instructor

SFU GRADUATE STUDIES

NEW GRADUATE COURSE PROPOSAL

Course Subject (eg. PSYC) BUS	**Number (eg. 810)** 787	**Units (eg. 4)** 3

Course title (max. 100 characters): AI in Business

Short title (for enrollment/transcript, max. 30 characters): AI in Business

Course description for SFU Calendar (course descriptions should be brief and should never begin with phrases such as "This course will..." or "The purpose of this course is..." If the grading basis is satisfactory/unsatisfactory include this in the description. Max. 50 words)

Introduces analytical knowledge that enables students to develop foundational knowledge of Artificial Intelligence (AI) and Machine Learning (ML), including the tools and methods of application and associated risks for use case identity across various business functions.

Rationale for introduction of this course (if more space is required, add a separate page)

This course has been taught multiple times as a Special Topics course with excellent reviews (BUS 774 terms 1231 and 1241). It is proposed as a core course option within the revised "Business Analytics Graduate Certificate" (proposed title change to "Digital Transformation and Business Analytics Graduate Certificate) as part of the MBA program redesign.

Term of initial offering (eg. Fall 2019) Fall 2025	**Course delivery** (eg. 3 hrs/week for 13 weeks) 3.5 hours for 10 weeks
Frequency of offerings/year 2	**Estimated enrollment per offering** 25

EQUIVALENT COURSES

Courses that replicates the content of this course to such an extent that students should not receive credit for both courses. Please select the one that is most relevant.

☐ **SEQUENTIAL COURSE**	☐ **ONE-WAY EQUIVALENCY**	☒ **TWO-WAY EQUIVALENCY**
[is not hard coded in the student information management system (SIMS).] Students who have taken (place relevant course(s) in the blank below (ex: STAT 603)) first may not then take this course for further credit.	[is not hard coded in SIMS.] (Place relevant course(s) in the blank below (ex: STAT 603)) will be accepted in lieu of this course.	[is hard coded and enforced by SIMS.] Students with credit for (place relevant course(s) in the blank below (ex: STAT 603)) may not take this course for further credit.
		Students with credit for BUS 774 under the title "AI in Business" may not take this course for further credit.

Does the partner academic unit agree that this is a two-way equivalency? ☐ YES ☐ NO

Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).

Prerequisite and/or Corequisite

Criminal record check required? ☐ Yes (if yes is selected, add this as prerequisite) | **Additional course fees?** ☐ Yes ☑ No

Campus where course will be taught ☐ Burnaby ☐ Surrey ☑ Vancouver ☐ Great Northern Way ☑ Off campus

Course Components * ☐ Lecture ☑ Seminar ☐ Lab ☐ Capstone ☐ Practicum ☐ Online ☐ Other: _____

Grading Basis ☑ Letter grades ☐ Satisfactory/ Unsatisfactory ☐ In Progress / Complete

* See important definitions on the curriculum website.

Repeat for credit? ☐ Yes ☑ No	**Total completions allowed?** 1	**Repeat within a term?** ☐ Yes ☑ No
Required course? ☐ Yes ☑ No	**Final exam required?** ☐ Yes ☑ No	

Combined with an undergraduate course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students. Please include a copy of the undergraduate course outline and fill out the Equivalent Courses section above.

RESOURCES

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course Chaitanya Kaligotla, Jie Mein Goh, Michael Brydon
Additional faculty members, space, and/or specialized equipment required in order to offer this course

CONTACT PERSON

Academic Unit / Program Beedie Graduate Program	**Name (typically, Graduate Program Chair)** Maria Szymczak	**Email** mdelguer@sfu.ca

ACADEMIC UNIT APPROVAL

☐ A course outline / syllabus is included

Non-departmentalized faculties need not sign

Graduate Program Committee Sudheer Gupta	**Signature**	**Date** Oct 24, 2024
Department Chair	**Signature**	**Date**

FACULTY APPROVAL

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content

Overlap check done? ☒ YES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Faculty Graduate Studies Committee	**Signature**	**Date**

A library review will be conducted. If additional funds are necessary, Graduate Studies will contact the academic unit prior to SGSC.

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee Mary O'Brien	**Signature**	**Date** November 20, 2024

ADMINISTRATIVE SECTION (for Graduate Studies office only)

Library Check: _____
Course Attribute: _____
Course Attribute Value: _____
Instruction Mode: _____
Attendance Type: _____

If different from regular units:
Academic Progress Units: _____
Financial Aid Progress Units: _____

SFU BEEDIE SCHOOL OF BUSINESS
SEGAL GRADUATE SCHOOL

BUS 787: AI in Business

Instructor:	Semester:
Email:	Note:
Phone:	Office:

Course Description

The availability of computational resources coupled with the ever-increasing volume and speed of data generation has resulted in a paradigm shift in business over the last decade. The ability to harness raw data into useful information and knowledge is increasingly critical to businesses. Artificial Intelligence (AI) and Machine Learning (ML) techniques are increasingly used to transform raw data into business decisions.

This course introduces the analytical knowledge that enables participants to develop foundational knowledge of AI and ML. The course covers the foundational concepts of AI and ML, including the tools and methods of its application and associated risks and implementation issues. This course will enable participants to identify use cases and manage AI and ML projects across various business functions through lectures, case studies, workshops, and projects.

Objectives

This course aims to provide you with the foundational knowledge of ML and AI in the business context. Upon completion of the course, you will be able to:

- Understand how data-analytic methods (including AI) improve business decision-making
- Recognize how ML and AI deliver business value
- Apply ML and AI techniques and algorithms for classification and prediction problems
- Identify use cases for ML and AI projects
- Develop a plan to deploy ML and AI techniques within business operations
- Communicate the opportunities and risks of using ML & AI in business

Course Expectations and Structure

This course is taught in an adaptive-workshop style, consisting of lectures, case studies, and generative knowledge workshops using Python via google collab. The course is split into three modules supported by workshops and case studies:

- Module 1: Fundamental and Foundational Topics in Data Science (Sessions 1-4)
- Module 2: Basic and Advanced AI Methods (Sessions 5-8)
- Module 3: Managing AI in Organizations (Sessions 9-12)

You are expected to attend and participate in all class activities – sharing experiences and thoughts to learn from each other is essential to make this course a meaningful experience for yourself and your classmates.

Weekly Time Commitment

Completing readings and viewing pre-class material before they are discussed in class, completing assignments thoroughly and on time, and contributing to class discussions is essential for your success. The time commitment, including lecture and readings, will be about 6-8 hours per week. Depending on the assignments due, this could increase to 9-11 hours. Team meetings may be in addition to this.

Expectations for Instructor

I will follow the course outline as closely as possible and will notify you of modifications in the outline if they happen. I will attempt to create and maintain a class atmosphere in which you feel free to both listen to others and express your views and ask questions to increase your learning. Please talk with me before or after class or make an appointment to connect with me if there is anything you want to discuss or about which you are unclear. I want to be supportive of your learning and growth.

Books and Materials

1. Course pack (consisting of cases) – there will be a link posted on Canvas.
2. Selected readings (including through external links) for each session will be provided on Canvas

Textbooks: While there is no required textbook for this course, here are some useful supplemental references:

- (Open source) Gareth James et al., An Introduction to Statistical Learning, 2nd ed. https://www.statlearning.com/
- (Open source) Aston Zhang et al. Dive into Deep Learning https://d2l.ai/index.html
- Doug Rose, Artificial Intelligence for Business, 2nd ed. ISBN-13: 9780136556619 https://www.informit.com/store/artificial-intelligence-for-business-9780136556619
- Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach, 4th US ed. http://aima.cs.berkeley.edu/

Technology Requirements: BYOD policy: Please have a computing device that can run the following software: Microsoft Excel and PowerPoint (or equivalents), Python, Jupyter Notebook, and Google Colaboratory (requires a google account): https://colab.research.google.com/

Learning and Assessments

Assessment summary

Evaluation in the course will be based on a combination of group and individual work. As in all similar courses in the Beedie School of Business, grading norms will be observed. In other words, students with the top marks relative to the class average will receive the top grades.

Individual	Individual Assignments	30%
	Individual Case Writeups	15%
	Participation	15%
Group	Case Hackathon	10%
	Group Project	20%

	Group Project Peer Review	10%
Total		**100%**

Individual Assignments (30%)

Three individual assignments will be distributed on Canvas after sessions 1, 5 and 9 (tentatively). These assignments will be due two calendar weeks from the assigned date.

Individual Case Writeups (10%)

Our case analyses will illustrate the application of AI (and Data Science) concepts and tools to complex business situations. We will approach both cases in both – a traditional style discussion, as well as a hackathon-style. The success of case discussions is dependent mainly on the student's level of involvement, as good case discussions involve significant interaction among students.

For two traditional-style cases (Sessions 8 and 11), you will be responsible for preparing and submitting a case analysis deck in response to case questions posted on Canvas two weeks in advance. You are welcome and encouraged to discuss the questions and cases with your groups, but your writeups/decks must be your own.

Participation (10%)

Contribution grades will be awarded based on both the quantity and the quality of your participation. You are expected to attend all classes, arrive on time and prepared, listen actively, and share your ideas. The right comment at the right time, be it provocative, synthesis, or taking the discussion in a new direction, will define the course. The more actively you participate, the more valuable our classes will be.

I will evaluate your in-class contributions after each class using the following rubric:

- 4 – Outstanding. If this person were not contributing, the quality of the class discussion would have been significantly diminished. Their contribution(s) elevated the class and the discussion to a whole new level.
- 3 – Very Good. This person made one or several comments that offered deep insights, synthesis and/or analysis that moved the discussion along. Their participation was critical.
- 2 – Good. Helpful and on-target comments that moved the discussion along.
- 1 – Attended but made no substantive comments or no comments at all. Actively listened and showed nonverbal involvement in the discussion. • 0 – absent without a valid excuse, inattentive and/or disruptive

Case Hackathon (10%)

For a hackathon-style case in Session 4, I shall provide data and questions at the beginning of class. Teams will have limited time to analyze, discuss, and present their thesis.

Group Project (30%)

This assessment component involves an AI business case proposed by your group. This project will use real-world data to formulate an AI-powered business proposal delivered via a team presentation. Deliverables include an interim proposal and a final submission (code, slide decks, and presentations) due on Session 12. More instructions on this Group Project will be announced in in Finance Session 5.

Group Project Peer Review (10%)

This assessment component consists of a peer evaluation tool to discourage free riding in group work. The scale of assessment will be provided on Canvas. You will review and be reviewed by the rest of your group. Please inform me if a project group member remains absent during the project.

Course Schedule

The 12-week structure for the course is shown in the table below. Readings, Python code, data, and additional references will be posted on Canvas for each session.

Session	Session Title	Topics Covered
1	Foundations: Statistical Learning	1. Introduction to data science, AI and ML 2. Probability and statistics refresher 3. Introduction to model thinking and algorithms
2	Fundamentals: Data and Perception Models	1. Managing data- bias, errors and 2. Standard regression techniques (OLS, LOGIT, stepwise) 3. Perception model selection
3	Fundamentals: Prediction Models & Prototyping	1. Prediction models (LASSO) 2. Data Partitioning (testtrain) and cross-validation techniques 3. Prediction performance 4. Prototyping
4	Case Hackathon: Data-Science backed Decision-Making	Chimera Case
5	Basic AI Methods: Introduction to ML	1. Intro to ML methods and applications 2. Decision Trees and tree-based methods 3. Classification and Regression Trees (CART)
6	Basic AI Methods 2: Supervised & Semi Supervised Learning	1. Introduction to ensemble methods 2. Supervised learning techniques and applications 3. Semi-supervised learning techniques and applications
7	Advanced AI Methods	1. Neural Networks - techniques and applications 2. Introduction to Reinforcement Learning 3. Introduction to Deep Learning 4. Managerial use cases of advanced AI methods
8	Case Analysis: AI methods in business	Infosys Case
9	Managing AI: Part 1 1	1. AI Business Risks - AI Radar 2. Ethics, Bias, and privacy issues with AI 3. Governance considerations for AI 4. Responsible AI
10	Managing AI: Part 2	1. Developing and managing a portfolio of AI projects 2. AI Projects - business cases and implementation roadmaps 3. Communicating the business value of AI projects 4. AI Capability Maturity Model
11	Case Analysis: AI risks in business	Alexa Case
12	Group Project Presentations	Team Presentations and Discussions

Academic Integrity

SFU's Academic Integrity website http://www.sfu.ca/students/academicintegrity.html is filled with information on what is meant by academic dishonesty, where you can find resources to help with your studies and the consequences of cheating. Check out the site for more information and videos that help explain the issues in plain English.

Each student is responsible for his or her conduct as it affects the University community. Academic dishonesty, in whatever form, is ultimately destructive of the values of the University. Furthermore, it is unfair and discouraging to the majority of students who pursue their studies honestly. Scholarly integrity is required of all members of the University. http://www.sfu.ca/policies/gazette/student/s10-01.html

If you are using any assistive technology to produce content that will be part of your graded work in the course, you must be transparent about the tools that you use. Undeclared use of the tool/technology will be considered a violation of the academic integrity policy. For example, if you use ChatGPT to assist you in your submission, you must acknowledge the use of the software and ocument the prompts used to generate the results. Be aware that any tool used will require you to evaluate the output for accuracies and be responsible for making the appropriate corrections.

About the Course Instructor

SFU GRADUATE STUDIES

NEW GRADUATE COURSE PROPOSAL

Course Subject (eg. PSYC)	Number (eg. 810)	Units (eg. 4)
BUS	788	3

Course title (max. 100 characters): Customer Analytics

Short title (for enrollment/transcript, max. 30 characters): Customer Analytics

Course description for SFU Calendar (course descriptions should be brief and should never begin with phrases such as "This course will..." or "The purpose of this course is..." If the grading basis is satisfactory/unsatisfactory include this in the description. Max. 50 words)

Offers a comprehensive overview of advanced analytical and machine learning techniques used to predict customer behaviors such as patterns, responses to marketing initiatives, and customer loyalty.

Rationale for introduction of this course (if more space is required, add a separate page)

This course is an advanced elective in the business analytics subject matter area. It is proposed as one of the electives within the revised Certificate in Business Analytics.

Term of initial offering (eg. Fall 2019): Fall 2025	**Course delivery** (eg. 3 hrs/week for 13 weeks): 3.5 hours for 10 weeks
Frequency of offerings/year: 2	**Estimated enrollment per offering**: 25

EQUIVALENT COURSES

Courses that replicates the content of this course to such an extent that students should not receive credit for both courses. Please select the one that is most relevant.

☐ **SEQUENTIAL COURSE**	☐ **ONE-WAY EQUIVALENCY**	☐ **TWO-WAY EQUIVALENCY**
[is not hard coded in the student information management system (SIMS).] Students who have taken (place relevant course(s) in the blank below (ex: STAT 603)) first may not then take this course for further credit.	[is not hard coded in SIMS.] (Place relevant course(s) in the blank below (ex: STAT 603)) will be accepted in lieu of this course.	[is hard coded and enforced by SIMS.] Students with credit for (place relevant course(s) in the blank below (ex: STAT 603)) may not take this course for further credit.

Does the partner academic unit agree that this is a two-way equivalency? ☐ YES ☐ NO

Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).

Prerequisite and/or Corequisite

Criminal record check required? ☐ Yes (if yes is selected, add this as prerequisite)

Additional course fees? ☐ Yes ☑ No

Campus where course will be taught ☐ Burnaby ☐ Surrey ☑ Vancouver ☐ Great Northern Way ☑ Off campus

Course Components * ☐ Lecture ☑ Seminar ☐ Lab ☐ Capstone ☐ Practicum ☐ Online ☐ Other: _____

Grading Basis ☑ Letter grades ☐ Satisfactory/ Unsatisfactory ☐ In Progress / Complete

* See important definitions on the curriculum website.

Repeat for credit? ☐ Yes ☑ No	**Total completions allowed?** 1	**Repeat within a term?** ☐ Yes ☑ No
Required course? ☐ Yes ☑ No	**Final exam required?** ☐ Yes ☑ No	

Combined with an undergraduate course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students. Please include a copy of the undergraduate course outline and fill out the Equivalent Courses section above.

RESOURCES

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course

Srabana Dasgupta, Jason Ho, Miremad Soleymanian, Yupin Yang

Additional faculty members, space, and/or specialized equipment required in order to offer this course

CONTACT PERSON

Academic Unit / Program	**Name (typically, Graduate Program Chair)**	**Email**
Beedie Graduate Program	Maria Szymczak	mdelguer@sfu.ca

ACADEMIC UNIT APPROVAL

☐ A course outline / syllabus is included

Non-departmentalized faculties need not sign

Graduate Program Committee Sudheer Gupta	**Signature**	**Date** Oct 30, 2024
Department Chair	**Signature**	**Date**

FACULTY APPROVAL

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content

Overlap check done? ☒ YES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Faculty Graduate Studies Committee	**Signature**	**Date**

A library review will be conducted. If additional funds are necessary, Graduate Studies will contact the academic unit prior to SGSC.

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee Mary O'Brien	**Signature**	**Date** November 20, 2024

ADMINISTRATIVE SECTION (for Graduate Studies office only)

Library Check: _____
Course Attribute: _____
Course Attribute Value: _____
Instruction Mode: _____
Attendance Type: _____

If different from regular units:
Academic Progress Units: _____
Financial Aid Progress Units: _____

SFU BEEDIE SCHOOL OF BUSINESS
SEGAL GRADUATE SCHOOL

BUS 788: Customer Analytics

Instructor:	Semester:
Email:	Note:
Phone:	Office:

Course Description

This course offers a comprehensive overview to advanced analytical and machine learning techniques used to predict customer behaviors, such as purchasing patterns, responses to marketing initiatives, and customer loyalty. Students will learn how to apply these techniques to enhance marketing decisions, including segmentation, targeting, upselling, cross-selling, and promotional strategies. Students get hands-on experiences building and interpreting predictive models so as to understand customers' behaviors at individual level.

Through detailed exploration of machine learning applications in customer analytics, this course will not only teach you how to perform complex data processing and predictive modeling but will also help you understand the strategic implications of these analytics in real-world business contexts. While the course will provide substantial coding experience, its primary goal is not to produce data scientists but to enable students to integrate machine learning insights into business decision-making, effectively communicating both with technical and non-technical stakeholders—a highly valued capability in the industry.

Objectives

The course is designed to empower students to:

1. **Structure the business decisions and define the right questions:** Learn to effectively structure business decisions and define the right questions for applying machine learning, ensuring that analysis is directly aligned with strategic business objectives and results in actionable insights.
2. **Data Exploration and Preprocessing:** Gain proficiency in handling real-world data with understanding the variables and addressing issues like missing values, noise, and data transformation to ensure robust analysis.
3. **Predictive Modeling:** Build and refine predictive models using both traditional statistical methods and advanced machine learning techniques to understand customer behaviors
4. **Critical Evaluation:** Assess the performance and implications of various models, emphasizing the ability to interpret and critique results in the context of business impacts
5. **Strategic Decision Support:** Use analytical results to inform and enhance marketing strategies, improving decision-making processes within a business setting
6. **Communication and Presentation:** Master the art of "storytelling with data" to make compelling arguments that align technical findings with business objectives, ensuring clear and impactful communication with stakeholders.

Course Expectations and Structure

This course integrates theoretical learning with practical application, using the popular R platform in RStudio for weekly coding. The structured learning path follows the CRISP-DM methodology, guiding you from data understanding to deploying models that drive decision-making. Weekly classes will include

discussions on statistical and machine learning methods, hands-on sessions in RStudio, and case studies that highlight the practical use of analytics in marketing.

Throughout the course, special emphasis is placed on the real-world applications of machine learning in marketing decisions, preparing you to leverage these advanced analytical techniques effectively in a business environment. You will also engage in storytelling presentations that focus on conveying complex information without technical jargon, practicing how to communicate effectively across different levels of an organization.

By the end of this course, you will have developed a deep understanding of how to define the right customer analytics problems in the business context, apply appropriate machine learning methods to solve those problems and how to translate these solutions into strategies that significantly enhance business outcomes.

Weekly Time Commitment

Completing readings and viewing pre-class material before they are discussed in class, completing assignments thoroughly and on time, and contributing to class discussions is essential for your success. The time commitment, including lecture and readings, will be about 6-8 hours per week. Team meetings may be in addition to this.

Expectations for Instructor

If you find yourself struggling, do not hesitate to make an appointment for assistance. It's important not to fall behind, and I am here to help you get back on track efficiently.

I will follow the course outline as closely as possible and will notify you of modifications in the outline if they happen. I will attempt to create and maintain a class atmosphere in which you feel free to both listen to others and express your views and ask questions to increase your learning. Please talk with me before or after class or make an appointment to connect with me if there is anything you want to discuss or about which you are unclear. I want to be supportive of your learning and growth.

Books and Materials

Canvas (https://canvas.sfu.ca) will be used for posting weekly reading, administering weekly quizzes, assignment submission, etc.

Communication: SFU student email addresses will be used for communicating information and disseminating class materials. It is your responsibility to check your SFU email and the course's Canvas site frequently.

Required Reading: Custom chapters from R. E. Krider, D. S. Putler, and R. P. Tavakol, alongside selected HBR articles and case studies will be provided.

Technology Requirements:

- PC or Laptop for coding exercises
- Software: RStudio, available for free download (https://www.rstudio.com/products/rstudio/download/)

Learning and Assessments

Assessment summary

Evaluation in the course will be based on a combination of group and individual work. The grade distribution for this course is not fixed. Grading is based on rank order performance relative to your peers, and the cut-offs for the various letter grades will vary depending on how the class as a whole performs.

Individual	Weekly Quizzes	15%
	Two Assignments	10%
	Participation	15%
	Final Exam	35%
Group	Storytelling with Data	25%
Total		**100%**

Weekly Quizzes (15%)

Students are required to watch posted videos and complete the assigned readings, followed by a quiz that relates to the content covered in both the video and the reading. These quizzes will be available 24 hours before each class and will close 30 minutes prior to the start of class. All reading materials will be posted one week in advance on Canvas. The aim of these quizzes is to ensure that students engage with the material thoroughly in preparation for discussions in class. Please note that late submissions of quizzes will not be accepted.

Two Assignments (10%)

You will complete two assignments throughout the course, requiring you to build, estimate, and critically evaluate your models while also deriving and explaining their managerial implications. More details will be provided on Canvas.

Participation (15%)

Class participation is critical to the success of this course and includes:

Adequate preparation for each class session. You are expected to come to class prepared to engage in an informed conversation about class material. Primarily this requires that you read, think about, and develop a point of view regarding the case study assigned for that day.

Regular and timely attendance. As a co-production, class success hinges critically upon your attendance. You bear the responsibility for making up work missed during an absence. Classes will start on time, so please be punctual.

Contributions to in-class discussions. Your class contributions will be judged as to whether they facilitate the process of collective learning in the classroom. High-quality contributions are efficient and to-the-point, relevant to the discussion at hand, and cognizant of the flow of arguments on the table. A quality contribution is not made off-the-cuff; it reflects thoughtful, creative, and incisive analysis, and is never a simple repetition of case facts or previous commentary. Quality contributions also help others in the classroom learn, perhaps by synthesizing multiple points of view, redirecting a discussion that has hit an impasse, clarifying ambiguities, or provoking debate. Class participants share in these responsibilities by avoiding disruptions and respecting others. They attack the point when responding to an opinion, not the person. They do not dominate the conversation or interrupt others. Frequency is obviously a factor in

class participation performance. You cannot have quality comments if you are not consistently in the game.

Group Project: Storytelling with Data (25%)

In teams of 5-6 students, you will select a real dataset, with guidance from the instructor, to analyze throughout the semester. Your task will be to define and address a marketing analytics problem with significant managerial implications derived from your dataset. The project concludes in a live presentation and a written report at the end of the term, with further instructions to be provided on Canvas.

Final Exam (35%)

The final exam will consist of paragraph-length responses to conceptual questions, analysis of reported metrics, short answer questions, and some calculations to demonstrate your understanding of the course material.

Course Schedule

Session	Topics
1	Overview and Introduction to Customer Analytics
2	Measurement Scales, Data Preprocessing, and Exploratory Analysis
3	Machine Learning in Customer Analytics: Case discussion and activity
4	Predictive Analytics for Marketing: Linear Regression
5	Predicting Customer Churn: Logistic Regression
6	Model Assessment and non-linear effects
7	Advanced Methods: Tree model, Random Forest, Neural Network
8	Unsupervised Learning: Customer Segmentation with Clustering and Principal Components Analysis
9	Customer Voice: Natural Language Processing for Customer Feedback

10	**Conjoint Analysis**
11	**Machine Learning in Action: Real-World Applications**

Academic Integrity

SFU's Academic Integrity website http://www.sfu.ca/students/academicintegrity.html is filled with information on what is meant by academic dishonesty, where you can find resources to help with your studies and the consequences of cheating. Check out the site for more information and videos that help explain the issues in plain English.

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ACADEMIC INTEGRITY: YOUR WORK, YOUR SUCCESS

About the Course Instructor

SFU GRADUATE STUDIES

NEW GRADUATE COURSE PROPOSAL

Course Subject (eg. PSYC) BUS	**Number (eg. 810)** 789	**Units (eg. 4)** 3

Course title (max. 100 characters): Marketing and Generative AI

Short title (for enrollment/transcript, max. 30 characters): Marketing & Generative AI

Course description for SFU Calendar (course descriptions should be brief and should never begin with phrases such as "This course will..." or "The purpose of this course is..." If the grading basis is satisfactory/unsatisfactory include this in the description. Max. 50 words)

Develops conceptual, analytics and decision-making skills related to Generative AI use in marketing, with a focus on product development, design thinking and communication strategies.

Rationale for introduction of this course (if more space is required, add a separate page)

This is proposed an elective within the new/revised certificate in Digital Transformation and Business Analytics.

Term of initial offering (eg. Fall 2019) Fall 2025	**Course delivery** (eg. 3 hrs/week for 13 weeks) 3.5 hrs/week for 10 weeks
Frequency of offerings/year 2	**Estimated enrollment per offering** 35

EQUIVALENT COURSES

Courses that replicates the content of this course to such an extent that students should not receive credit for both courses. Please select the one that is most relevant.

☐ **SEQUENTIAL COURSE**	☐ **ONE-WAY EQUIVALENCY**	☐ **TWO-WAY EQUIVALENCY**
[is not hard coded in the student information management system (SIMS).] Students who have taken (place relevant course(s) in the blank below (ex: STAT 603)) first may not then take this course for further credit.	[is not hard coded in SIMS.] (Place relevant course(s) in the blank below (ex: STAT 603)) will be accepted in lieu of this course.	[is hard coded and enforced by SIMS.] Students with credit for (place relevant course(s) in the blank below (ex: STAT 603)) may not take this course for further credit.

Does the partner academic unit agree that this is a two-way equivalency? ☐ YES ☐ NO

Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).

Prerequisite and/or Corequisite

Criminal record check required? ☐ Yes (if yes is selected, add this as prerequisite) **Additional course fees?** ☐ Yes ☐ No

Campus where course will be taught ☐ Burnaby ☐ Surrey ☑ Vancouver ☐ Great Northern Way ☐ Off campus

Course Components * ☑ Lecture ☐ Seminar ☐ Lab ☐ Capstone ☐ Practicum ☐ Online ☐ Other: _____

Grading Basis ☑ Letter grades ☐ Satisfactory/ Unsatisfactory ☐ In Progress / Complete

* See important definitions on the curriculum website.

Repeat for credit? ☐ Yes ☑ No	**Total completions allowed?**	**Repeat within a term?** ☐ Yes ☑ No
Required course? ☐ Yes ☑ No	**Final exam required?** ☐ Yes ☑ No	

Combined with an undergraduate course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students. Please include a copy of the undergraduate course outline and fill out the Equivalent Courses section above.

RESOURCES

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course

Lily Lin, Jason Ho, Aishwarya Shukla

Additional faculty members, space, and/or specialized equipment required in order to offer this course

CONTACT PERSON

Academic Unit / Program	**Name (typically, Graduate Program Chair)**	**Email**
Beedie Grad Programs	Ariel Johnson	busgradprogram@sfu.ca

ACADEMIC UNIT APPROVAL

☑ A course outline / syllabus is included

Non-departmentalized faculties need not sign

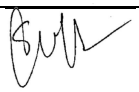
Graduate Program Committee	**Signature**	**Date**
Department Chair	**Signature**	**Date**

FACULTY APPROVAL

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content

Overlap check done? ☑ YES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Faculty Graduate Studies Committee Sudheer Gupta	**Signature** 	**Date** November 15, 2024

A library review will be conducted. If additional funds are necessary, Graduate Studies will contact the academic unit prior to SGSC.

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee Mary O'Brien	**Signature** 	**Date** November 20, 2024

ADMINISTRATIVE SECTION (for Graduate Studies office only)

Library Check: _____
Course Attribute: _____
Course Attribute Value: _____
Instruction Mode: _____
Attendance Type: _____

If different from regular units:
Academic Progress Units: _____
Financial Aid Progress Units: _____

BUS 789: Marketing and Generative AI

Course/Section:	**Semester:**
Title:	**Instructor:**
Day/Time:	**Office**:
Room:	**Phone:**
Office Hours:	**Email**:

Course Overview and Objectives

This is an advanced marketing course and is designed to build on the foundational material covered in the introductory marketing class. The goal of the course is to develop conceptual, analytical, and decision-making skills expected of marketers and managers in the age of Generative Artificial Intelligence (Gen AI).

This course is designed to study the role Gen AI has played in multiple aspects of marketing, including product development, design thinking, and communication strategy. Students will have hands on experience designing and testing digital touchpoints with customers using Gen AI tools, such as chatbots and AI created communication contents

This course has four main components to it. We will start by understanding the concept of Gen AI and its presence in the customer journey. We will then examine how Gen AI presents opportunities and challenges in various industries in marketing. We will then look at the adoption of Gen AI in services and experiential marketing, and how service providers should communicate with consumers through Gen AI. We will also discuss how Gen AI is used in other critical areas of marketing, such as the development of consumer personas, marketing research, and integrated marketing communications. Finally, we will look at the implications of Gen AI, such as sustainability and ethical issues.

Learning and Course Objectives

At the end of this course, students will be able to:

1. Create personas (consumer profiles) for idea generation and product development through consumer data and the use of Gen AI
2. Understand and analyze touchpoints for customer journeys using Gen AI
3. Identify opportunities for using GenAI as a marketing tool across different industries (e.g., hospitality, entertainment, insurance, physical goods, traditional markets, mental health, online dating/companionship)
4. Understand the advantages and disadvantages of one-to-one personalization marketing through Gen AI
5. Design variants of marketing contents using GenAI (e.g., AI influencers, communication messages) and testing them with A/B testing
6. Design and test GenAI chatbots for customer support, and exam their effectiveness in contexts like service failures and post-purchase management
7. Examine ethical, sustainability and regulatory issues of using GenAI in marketing

Teaching Approach and Methodology

This course is designed like a workshop and will use the following pedagogical format:

- Lectures – basic concepts to the student
- Cases – how theoretical concepts have been applied in practical situations
- Assignments/Projects – application of the principles learned in class
- Presentations – communication skills

This format is intended to provide students with a holistic and interactive learning experience of Gen AI and marketing. Sessions are primarily workshop-oriented discussions covering material from the readings and cases. Please note that the lectures and class discussions are designed to go beyond the readings.

Course Organization

This is primarily a case-based course and has several lectures that draw on assigned reading material. The required readings will help you get more from my lecture presentations and will be relevant to the case discussions.

The course has three hours of lecture per week. All case analyses, exercise, project-related discussions, exams, and group and individual presentations will take place during allocated lecture times. Additional cases, readings, etc. will be handed out in class, or made available through Canvas.

Consultations with the Professor

If you find yourself struggling, do not hesitate to make an appointment for assistance. It's important not to fall behind, and I am here to help you get back on track efficiently.

Learning Management System & Communication

- Canvas (https://canvas.sfu.ca) will be used for posting **weekly reading**, administering **weekly quizzes**, **assignment submission**, etc.
- SFU student email addresses will be used for communicating information and disseminating class materials. It is your responsibility to check your SFU email and the course's Canvas site frequently.

Text and Materials

Required Reading: Selected HBR articles, journal articles, and case studies.

Technology Requirements

- Laptop for in-class exercises
- Software: SPSS, ChatGPT AI

November 20, 2024

Learning and Assessments

Assessment summary

Evaluation in the course will be based on a combination of individual and group work:

Individual	Class Participation	15%
	Weekly Quizzes	15%
	Individual Assignments	20%
	Take-Home Exam	25%
Team	Group Project	25%
	Total	**100%**

The grade distribution for this course is not fixed. Grading is based on ***rank order performance*** relative to your peers, and the cut-offs for the various letter grades will vary depending on how the class as a whole performs.

Class Participation (15%)
Class participation is critical to the success of this course and includes:

Adequate preparation for each class session. You are expected to come to class prepared to engage in an informed conversation about class material. Primarily this requires that you read, think about, and develop a point of view regarding the case study assigned for that day.

Regular and timely attendance. As a co-production, class success hinges critically upon your attendance. You bear the responsibility for making up work missed during an absence. Classes will start on time, so please be punctual.

Contributions to in-class discussions. Your class contributions will be judged as to whether they facilitate the process of collective learning in the classroom. High-quality contributions are efficient and to-the-point, relevant to the discussion at hand, and cognizant of the flow of arguments on the table. A quality contribution is not made off-the-cuff; it reflects thoughtful, creative, and incisive analysis, and is never a simple repetition of case facts or previous commentary. Quality contributions also help others in the classroom learn, perhaps by synthesizing multiple points of view, redirecting a discussion that has hit an impasse, clarifying ambiguities, or provoking debate. Class participants share in these responsibilities by avoiding disruptions and respecting others. They attack the point when responding to an opinion, not the person. They do not dominate the conversation or interrupt others. Frequency is obviously a factor in class participation performance. You cannot have quality comments if you are not consistently in the game.

Weekly Quizzes (15%)

Students are required to complete the weekly assigned readings, followed by a quiz that relates to the content covered in the readings. These quizzes will be available 24 hours before each class and will close 30 minutes prior to the start of class. All reading materials will be posted one week in advance on Canvas. The aim of these quizzes is to ensure that students engage with the material thoroughly in preparation for discussions in class.
Please note that late submissions of quizzes will not be accepted.

Individual Assignments (20%)

You will complete two assignments throughout the course that will require you to apply your understanding of the concepts in the course. More details will be provided on Canvas.

Take-Home Exam (25%)

The take-home exam will require you to demonstrate your holistic understanding of the course materials. It will consist of paragraph-length responses to a series of conceptual questions that will be related to the readings and exercises given throughout the term.

Group Project (25%)

In teams of 5-6 students, your team will be required to walk through the customer journey in the context of Gen AI. Through your team's research and analyses, your team will develop and test a series of questions a company is facing in the real world using the Gen AI concepts and tools discussed. The project will consist of 2 presentations during class time and a written report at the end of the term, with further instructions to be provided on Canvas.

Course Schedule

Module	Topics
1	**Overview of Gen AI & Its Role in Marketing**
2	**Using Consumer Data & Gen AI in Creating Consumer Personas**
3	**Gen AI & Touchpoints for the Customer Journey**
4	**Gen AI as a Marketing Tool in Different Industries**
5	**Gen AI in Experiential Marketing & Dealing with Service Failures**
6	**Group Presentations #1** **A/B Testing in Marketing and Gen AI in Marketing Research**
7	**Designing and Testing Marketing Contents With GenAI**
8	**One-to-One Personalization Marketing Through Gen AI**

9	**Ethical, Sustainability and Regulatory Issues Related to GenAI in Marketing**
10	**Group Presentations #2**

Academic Integrity

All members of the university are expected to uphold the values of academic integrity: honesty, trust, fairness, respect, responsibility, and courage. SFU considers any act of falsification, misrepresentation or deception to be destructive because it is unfair to students who pursue their studies honestly, it compromises the worth of other's work, and ultimately prevents students from meaningfully reaching their own scholarly potential. (Please see: https://www.sfu.ca/students/academicintegrity.html)

You are responsible for your own academic conduct as it affects the University community. Academic Dishonesty, in whatever form, is ultimately destructive of the values of the university and to you, your peers, and your friends. It is destructive because it is unfair to everyone who works hard and pursues their studies honestly, it compromises their work, and ultimately prevents students from meaningfully reaching their own academic potential.

All academic dishonesty activities that involve any assessment in this course will be pursued and penalized to the maximum extent allowable under SFU academic conduct policies and procedures. This could include a maximum score of zero for the assessment, a grade of F for the course, or a designation of FD (Fail with academic discipline) on your transcript. All incidents will be reported to the Academic Director of the Beedie School of Business and to the SFU's Academic Integrity Office.

DON'T RISK IT. It's not worth it!

Students are responsible to familiarize themselves with academic conduct policies and procedures. Some additional resources:

- What is Academic Dishonesty? https://www.sfu.ca/students/academicintegrity/what-is-it.html
- SFU Academic Honesty and Student Conduct Policies:
    - SFU Student Academic Integrity Policy: https://www.sfu.ca/policies/gazette/student/s10-01.html
    - SFU Student Conduct Policy: https://www.sfu.ca/policies/gazette/student/s10-05.html