S.18-115

SFU GRADUATE AND POSTDOCTORAL STUDIES

Simon Fraser University
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gradstudies@sfu.ca
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MEMORANDUM

ATTENTION Senate DATE October 18, 2018

FROM Jeff Derksen, Chair of Senate Graduate Studies Committee (SGSC)

RE: CSAR Master of Science in Accounting with Cognitive Analytics

For information:

At its meeting of September 11, 2018, SGSC approved the Cohort Special Arrangements proposal for Master of Science in Accounting with Cognitive Analytics in the Beedie School of Business. The proposal was received by SCUP at its meeting on October 10, 2018.

The following program proposal and new courses are to be effective Summer 2019.

Beedie School of Business

1) Program proposal: Master of Science in Accounting with Cognitive Analytics (Cohort Special Arrangements)
2) New calendar entry for Master of Science in Accounting with Cognitive Analytics
3) New Courses:
   - BUS 830 Foundations of Business Systems and Data
   - BUS 831 Analyzing and Visualizing Accounting Data
   - BUS 832 Data Analytics for Auditing Practice
   - BUS 838 Collaboration, Teaming, and Agile Methods
   - BUS 839 Applied Project
   - BUS 840 Data Mining and Business Intelligence
   - BUS 841 Predictive Analytics for Accounting
   - BUS 842 Advanced Analytical Auditing
   - BUS 844 Fraudulent Financial Reporting
   - BUS 845 Advanced Applied Project I
   - BUS 846 Advanced Applied Project II

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MEMORANDUM

ATTENTION Senate Committee on University Priorities (SCUP)

DATE September 24, 2018

FROM Jeff Derksen,
Chair of Senate Graduate Studies Committee (SGSC)

RE: Cohort Special Arrangements proposal for a Master of Science in Accounting with Cognitive Analytics

For Information:

At its meeting of September 11, 2018, SGSC approved the Cohort Special Arrangements proposal for a Master of Science in Accounting with Cognitive Analytics, effective **Summer 2019.**

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 | busadmin@sfu.ca

Memo to SGSC

To: Senate Graduate Studies Committee
From: Andrew Gemino, Associate Dean, Graduate Programs
Re: CSAR New Program Proposals
Date: August 23, 2018 REVISED: September 17, 2018

The following curriculum revisions have been approved by the Beedie School of Business and are forwarded to the Senate Graduate Studies Committee for approval. These curriculum items should be effective for **Summer 2019.**

Please include them on the next SGSC agenda.

- **CSAR new program proposal: Graduate Certificate in Accounting with Digital Analytics**
- **CSAR new program proposal: Master of Science in Accounting with Cognitive Analytics**

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

Dr. Andrew Gemino
Professor, Management Information Systems
Associate Dean, Graduate Programs, Beedie School of Business

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Additional Rationale Memo

To: Senate Graduate Studies Committee
From: Andrew Gemino, Associate Dean, Graduate Programs
Re: CSAR New Program Proposals
Date: September 17, 2018

The following curriculum revisions have been approved by the Beedie School of Business and are being forwarded to the Senate Graduate Studies Committee for approval. These curriculum items should be effective for **Summer 2019:**

- New program proposal (Cohort Special Arrangement):
  - **Graduate Certificate in Accounting with Digital Analytics**
- New program proposal (Cohort Special Arrangement):
  - **Master of Science in Accounting with Cognitive Analytics**

The credential names differ to reflect the different levels of knowledge associated with the graduate certificate and MSc degree. The graduate certificate program is intended to solidify the foundation for digital analytics, and the MSc builds upon this foundation with applications of predictive analytics and machine learning techniques that are signature to cognitive analytics approaches.

Students will receive either the graduate certificate credential or the MSc credential, depending on their entry pathway. Not all students will proceed from the graduate certificate to the MSc credential. As such, these programs are presented as stand-alone credentials which the naming now reflects.

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

Dr. Andrew Gemino
Professor, Management Information Systems
Associate Dean, Graduate Programs, Beedie School of Business

SFU SIMON FRASER UNIVERSITY
ENGAGING THE WORLD

Master of Science in Accounting with Cognitive Analytics

Cohort Special Arrangement Program Proposal

August 2018

Beedie School of Business

PART A: Information required by the Ministry of Advanced Education

EXECUTIVE SUMMARY

Overview of SFU's history, mission, and academic goals

As Canada's engaged university, Simon Fraser University is defined by its dynamic integration of innovative education, cutting-edge research and far-reaching community engagement. SFU was founded just over 50 years ago with a mission to be a different kind of university—to bring an interdisciplinary approach to learning, embrace bold initiatives, and engage with communities near and far. Today, SFU is a leader amongst Canada's comprehensive research universities. With campuses in British Columbia's three largest cities—Vancouver, Surrey and Burnaby—SFU has eight faculties, delivers almost 150 programs to over 30,000 students, and boasts more than 130,000 alumni in 130 countries around the world.

The Beedie School of Business is internationally accredited by both the AACSB (Association to Advance Collegiate Schools of Business) and EQUIS Quality award from the EFMD (European Federation for Management Development). These accreditations from globally recognized business school accrediting agencies place Beedie in the top 1% of business schools worldwide. Beedie has 100 world class faculty, 3500 undergraduate students and over 600 graduate students. The combination of expertise, experience, educational technology, and infrastructure necessary for sustained success allows Beedie to act on the calling of developing innovative and socially responsible business leaders with a global perspective through education, inspired by research and grounded in practice.

Proposed credential to be awarded

Master of Science in Accounting with Cognitive Analytics

Location of program

Primarily online, with some face-to-face sessions (Vancouver: Segal campus, and offsite)

Academic unit(s) offering proposed program

Beedie School of Business

Anticipated program start date

Summer 2019

Anticipated completion time

Five terms

Summary of proposed program

a) Aims, goals and/or objectives of the proposed program

Creating "next generation" accountants through innovative programming. To prepare accounting industry employees with analytical skills, and develop the "next generation" accountant who will be:

- knowledgeable about how the profession has evolved and will evolve technologically
- accomplished in best practices in accounting, auditing, tax, and financial reporting
- empowered with data and able to use advanced data and analytic technologies
- prepared to collaborate and innovate with teams of business professionals

The purpose of the Master of Science in Accounting with Cognitive Analytics is to further develop auditing with data analytics capabilities. With analytical capabilities at the heart of the program, Beedie aims to design practical and interactive courses empowering this next generation of auditors for excellence, embracing change, innovation, and critical thinking. To accomplish this objective, the integration of four skill dimensions is proposed:

i. advanced auditing techniques
ii. data and visualization skills
iii. statistical and analytical capabilities
iv. advanced leadership/teaming skills

The proposed MSc provides curriculum related to each of these skills to prepare accounting industry professionals to contribute and lead analytical teams in organizational projects. The final applied project course requirement, delivered with cooperation from industry partners, provides a capstone experience integrating the knowledge gained throughout the coursework. MSc students are challenged in a team environment to demonstrate significant benefits that could accrue from real-world analytic projects in accounting, enabling graduates to excel as participants and business leaders in complex data and analytic projects.

b) Anticipated contribution of the proposed program to the mandate and strategic plan of the institution

In 2017, the Beedie School identified its vision as the following statement: "We develop innovative and socially responsible business leaders with a global perspective through education, inspired by research and grounded in practice."

A focus on innovation and collaborative capabilities, with attention on data and analytical skills, educates business professionals by developing these skills and grounding them in everyday business practice. The program is therefore highly aligned with Beedie's mission statement. In turn, Beedie's focus on innovation also aligns with the SFU Innovates overall strategy (http://innovates.vpr.sfu.ca/our-strategy). The proposed MSc

stands on the entrepreneurial education pillar of the SFU Innovates strategy, and challenges business professionals to innovate their practice with data and analytic capabilities. Finally, the program aligns with SFU's Big Data strategic initiative and the "Engaging Students" goal noted in the Presidents Goals and Objectives 2017-18, which suggest SFU helps "To equip students with the knowledge, skills, and experiences that prepare them for life in an ever-changing and challenging world."

c) Linkages between the educational goals and the curriculum

The purpose of the program is to develop accounting professionals with analytic capabilities. By creating an educational program to support the advancement of these skills, Beedie will be preparing accounting business professionals to embrace the changes coming to the industry and provide the skills they need to play a vital role in helping client organizations create value. To accomplish this central objective, we have designed curriculum that integrates four data and analytic curricular dimensions:

i. advanced auditing techniques

ii. data and visualization skills

iii. statistical and analytical capabilities

iv. advanced leadership/teaming skills

Each of these four program learning objectives are developed through a corresponding series of courses. The students then participate in a capstone project experience. The capstone course serves as an integrative experience that challenges students to demonstrate their abilities in analytics within an accounting context. As the program is targeted at accounting industry professionals, we will encourage students to select topics that are directly related to their organization or industry. While there is no mandatory work experience required in this program, the capstone applied project can bring considerations of the student's work environment directly into the program. Techniques learned in earlier courses should be able to be applied directly in the capstone. In doing this, students will be demonstrating mastery in the curricular topics and achieving the goal of developing analytic capabilities.

d) Potential areas/sectors of employment for graduates and/or opportunities for further study

As the proposed program is geared towards students with high levels of familiarity with accounting, promotion within company and/or industry is a key target area for graduates. Career development will focus on collaborative teaming; as analytic projects continue to grow in complexity, the need for agile, team-based approaches to analytic projects will grow significantly. This will lead to new role definitions in the accounting profession including analytic translators, workflow integrators, delivery managers and analytic business leaders. Business professionals in the accounting area who are prepared with analytical skills, and advanced skills in business project leadership, will open pathways to the new roles and careers. While many of these analytic roles are not yet well defined,

MSc graduates will be well prepared to take leadership positions in the area of analytics within organizations as these emerging roles become clearer.

e) Delivery methods

A cohort-based, blended education delivery approach including face-to face-sessions integrated with an online learning management system (LMS). Online programming through CANVAS will provide the core of learning environment, enabling students to immerse themselves in learning on their own schedule while encouraging a collaborative, team-based approach. This collaborative approach is further supported by face-to-face sessions for each cohort. A cohort model is proposed in order for students to apply cumulative skills in the final course, which an integrative applied project capstone centered around teaming and applying data analytic skills learned throughout the MSc.

f) Program strengths

The Beedie School of Business collaborates with a wide range of clients to provide innovative strategic learning solutions. We approach each industry as a unique organizational learning opportunity and work closely with key stakeholders to ensure that learning resonates with individual and organizational goals. We have strong faculty in the area of data analytics combined with a history of innovative programming. Our 50 years in graduate business education combined with two decades of experience in on-line education provide the foundation for programming that allows students to effectively learn when and where it makes sense to them.

The proposed program develops foundational skills in Year 1. Year 2 includes four courses featuring advanced skill development offered. Participants will then be challenged to apply their advanced skills with a final integrative capstone project. This applied project is the essential feature of the program.

g) An overview of the level of support and recognition from other post-secondary institutions and relevant regulatory or professional bodies, where applicable, and plans for admissions and transfer within the British Columbia post-secondary education system

The Beedie School consulted with professionals in Accounting (Audit, Tax, Strategy and Information Systems Consulting) including presidents of big 4 firms to assess the demands for analytic training for professionals with a Certified Professional Accountant (CPA) designation. Data and analytics was clearly changing the way that the public accounting profession is providing services. An opportunity was identified to provide specific education to advance the education of accounting with D&A.

In addition, a number of Universities in the US have developed Accounting and Data Analytics programs since 2017 including:

— Villanova School of Business

— Ohio State University Max M. Fisher College of Business

— Arizona State University's W. P. Carey School of Business
— The University of Georgia's Terry College of Business
— The University of Mississippi's Patterson School of Accountancy
— The University of Missouri's Robert J. Trulaske, Sr. College of Business
— The University of Southern California's Leventhal School of Accounting

We have contacted Villanova and Ohio State and discussed the program, particularly the suggestions for developing and recruiting students. Both Universities suggested a high student demand and strong industry support for the program.

We also contacted the General Management Admissions Council and were provided access to the 2017 Prospective Student Survey. The report highlighted that the percentage of candidates considering applying to Master of Data Analytics programs grew from 7 percent in 2009 to 16 percent as of May 2017. We expect this increases recognition the importance of data and analytics skills continues.

The proposed MSc will utilize existing policies of Beedie Graduate Programs. Students within the British Columbia post-secondary education system will not be able to transfer into the program, due to the cohort model and required courses list. Advanced standing will not be granted, with the exception of students who complete the Graduate Certificate in Accounting with Digital Analytics courses at a suitable academic level.

h) Related programs in the institution or other British Columbia post-secondary institutions

There are several big data and analytic academic programs in post-secondary institutions within BC. Most of these programs are focused on developing computing science and technical skills for data scientists. The demand for these skills is high, and the need for new programs is clear. The proposed MSc program focuses on bringing basic data and analytic skills to business professionals in accounting. Business professionals in accounting see the value of adding data and analytical skills, but do not intend to become data scientists nor data management professionals. As the proposed MSc is intended to teach data and analytic skills in a business context, it will not duplicate programs with a more technical, statistical focus.

Internal: SFU – Master of Science in Computer Science with a specialization in Big Data

The SFU MSc in Computer Science with a specialization in Big Data is designed to develop data architects who apply a deep knowledge of computer science. The program is challenging and ideal for those with a strong aptitude in computer science and engineering. The MSc in Computer Science focuses on highly technical skill development rather than collaboration and basic analytic and data skills in a business environment. The proposed MSc program does not require, nor does it assume, a strong aptitude in computing science, and therefore intended to develop skills at a different level

than the MSc in Computer Science. While both programs will focus on skills relating Big Data, there is a significantly different learning outcome for business professionals than there would be for technical professionals.

External: UBC – Master of Data Science – http://masterdatascience.science.ubc.ca

The Master in Data Science is developed by the departments of Computer Science and Statistics at UBC to develop analytical skills for people with an undergraduate degree in any discipline. The program does not seek business professionals for admission, and covers a wide variety of interdisciplinary analytical situations. The Master of Data Science program does not focus on collaboration and as it is offered by the departments of computing science and statistics, does not focus on business applications in organizational environments. The proposed MSc is intended for a more mature business professional student and focuses on developing skills at a different level than the Master of Data Science program. While both programs will focus on analytical skills, there is a significantly different learning outcome for business professionals than there would be for more technical professionals or data scientists.

External: UBC – Master of Business Analytics - http://www.sauder.ubc.ca/Programs/Master_of_Business_Analytics

The UBC Master of Business Analytics (MBAN) provides broad analytical training that includes simulation, mathematical modeling and data management. The focus of the program is on operations management, supply chain, and marketing. Admissions are open to students in all faculties and not limited to business professionals. In contrast, the proposed MSc is focused on business professionals as students and provides data and analytic skills with no simulation or mathematical/optimization modeling. With a focus on data and analytical skills for the accounting profession, the proposed MSc differs in the type of student, the area of business focus (accounting versus operations), and the nature of the skills taught in the program.

Contact information

Ali Dastmalchian, Dean, Beedie School of Business: beedie_ea@sfu.ca 778.782.7664
Andrew Gemino, Associate Dean, Graduate Programs: gemino@sfu.ca 778.782.3653
Maria Szymczak, Executive Director, Graduate Programs: mdelguer@sfu.ca 778.782.5023
Jamal Nazari, Associate Professor, Accounting: jnazari@sfu.ca 778.782.4604

PART B: Information required by Simon Fraser University

PROGRAM DETAILS

a) Graduation requirements, target audience

The proposed Master of Science in Accounting with Cognitive Analytics consists of course work and a capstone applied project for a minimum of 33 units. Courses from other SFU graduate business programs, or a special topic course, may be substituted at the discretion of the academic director.

In Year 1, students must complete all of:
BUS 830 – Foundations of Business Systems and Data (3)
BUS 831 – Analyzing and Visualizing Accounting Data (3)
BUS 832 – Data Analytics for Auditing Practice (3)
BUS 838 – Collaboration, Teaming, and Agile Methods (3)
And a project:
BUS 839 – Applied Project (3)

In Year 2, students must complete all of:
BUS 840 – Data Mining and Business Intelligence (3)
BUS 841 – Predictive Analytics for Accounting (3)
BUS 842 – Advanced Analytical Auditing (3)
BUS 844 – Fraudulent Financial Reporting (3)
And a project:
BUS 845 – Advanced Applied Project I (3)
BUS 846 – Advanced Applied Project II (3)

Students are expected to complete the program requirements within five terms.

The proposed program is geared towards employees already working within the accounting and auditing sector, primarily at the Junior Accountant level. Therefore, company employees will be the targeted recruitment group. Due to the blended delivery model, it is predicted that primarily domestic students will be interested. Students who are admitted to the proposed Graduate Certificate in Accounting with Digital Analytics will also make up the target audience to further their studies from the certificate to master's level.

b) Admission requirements

Applicants must satisfy the University admission requirements as stated in Graduate General Regulations 1.3 in the SFU Calendar. An undergraduate degree in business, management, commerce, or other suitable quantitatively oriented programs is required and a minimum of two years of applicable work experience. Candidates holding a professional designation such as a CPA and evidence of strong mathematics competency would also be ideal candidates. Advanced credit of equivalent courses may be granted from the Certificate in Accounting with Digital Analytics.

Option 1: Direct entry into the MSc in Accounting with Cognitive Analytics. Successful applicants must meet admission requirements outlined in Graduate General Regulations 1.3.3: Admission to a Master's Program. After Year 1, students who do not meet the

minimum CGPA requirement of 3.0 will have the option to graduate with a Graduate Certificate in Digital Analytics and forgo the MSc credential.

Option 2: Students start in the certificate in Accounting with Digital Analytics, complete a minimum of 12 units of course work with a CGPA of 3.0 or above and transfer into the MSc in Accounting with Cognitive Analytics. This may only be done before the certificate in Accounting with Digital Analytics has been granted. The only credential received is the Master of Science.

Due to the stakeholders involved, we will not be offering the option where students graduate with a certificate in Accounting with Digital Analytics and then apply into the MSc in Accounting with Cognitive Analytics program and receive both credentials.

c) Evidence of student interest and labour market demand

The Graduate Management Admissions Council (GMAC) owns and administers the Graduate Management Admission Test® (GMAT®) exam. The GMAT is used by more than 7,000 graduate programs worldwide. Approximately 9 out of 10 new MBA enrollments globally are made using a GMAT score and more than 200,000 candidates take the GMAT exam every year. The information they provide is perhaps the best source for considering student demand. In recent papers, GMAC has noted the significant demand for Masters of Analytics programs.[1] In addition, a 2011 report from McKinsey Consulting[2] has suggested that "by 2018, the United States alone could face a shortage of between 140,000 and 190,000 of works with analytical skills". Each of these reports suggests strong general demand for analytics programming. Evidence of the demand within the accounting profession is also significant. The Chartered Professional Accountant (CPA) has recognized the changes data and analytical skills are bringing to the profession.[3]

These articles suggest a significant unmet need for further education in the area of data analytics, specifically in the area of accounting/audit/tax. The type of jobs that candidates are likely to access after graduation include analytic team leads, lead business analysts, managers of business analytics teams. Emerging roles in organizations include:

- Delivery managers: Deliver data/analytic insights and work with end users
- Analytics translators: Ensure analytics solve critical business problems
- Workflow integrators: Build interactive decision tools and implement changes
- Visualization analysts: Visualize data and validate reports and dashboards

d) Eligibility for scholarships, awards, and financial aid

Not eligible for scholarships, awards, and financial aid at this time. The MSc in Accounting with Cognitive Analytics is proposed as a Cohort Special Arrangement program, which is not eligible for awards adjudicated by the Senate Graduate Awards Adjudication Committee.

e) Program evaluation and academic/administrative oversight

All graduate programs in the Beedie School are subject to accreditation. The Beedie School is double accredited by EQUIS[4] and AACSB. Each of these accreditation bodies

[1] For example, the following GMAC report released Jun 16, 2016 and accessed Jun 20, 2018: https://www.gmac.com/market-intelligence-and-research/research-insights/curriculum-and-delivery/data-analytics.aspx The trend has continued as noted in a follow-up article published July 13, 2-17 and accessed June 20, 2018: https://www.gmac.com/market-intelligence-and-research/research-insights/curriculum-and-delivery/demand-for-analytics-goes-beyond-master-of-data-analytics-programs.aspx

[2] Report accessed June 20, 2018. https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/big-data-the-next-frontier-for-innovation

[3] See for instance the following article accessed June 20, 2018: https://www.cpajournal.com/2017/06/26/big-data-business-analytics-implications-audit-profession

[4] For EQUIS accredited Schools see : http://www.efmd.org/accreditation-main/equis/accredited-schools

require 5-year re-evaluation cycles and our internal Assurance of Learning (AoL) processes run annually to collect data on program learning goals, outcomes and traits. Outcomes of this AoL process are reported to the Graduate AoL committee that then coordinate this information for the accreditation agencies and external reviews.

To avoid disruptive changes, program evaluations normally occur on a 3-year rotating basis across the major programs. Academic Directors are responsible for annual summaries of program performance that are reported in the graduate program committee. Members of the graduate program committee (GPC) include academic directors, faculty members and senior graduate staff members. Any changes to graduate programs must be passed through the graduate curriculum committee. The graduate curriculum committee (GCC) is chaired by the Associate Dean, Graduate Programs and composed of a majority of faculty members, a selection of academic directors, and senior staff.

f) Main competitors outside BC

There are a number of Canadian universities offering Master of Accounting degrees. These programs are not focused on data and analytics but rather serve to develop accounting professional in traditional areas of tax, audit and risk management. These programs normally require a previous undergraduate degree (BBA) in accounting. Examples include:

York University, Schulich School of Business:
http://schulich.yorku.ca/programs/macc/

Alberta School of Business:
https://www.ualberta.ca/business/programs/master-of-accounting

University of Saskatchewan, Edwards School of Business:
http://www.edwards.usask.ca/programs/mpacc/

There are a growing number of business schools offering a Masters of Business Analytics in Canada. These programs are not focused in the area of accounting and instead are intended to serve all areas of business. These programs do not require significant experience in a particular area of business. Many of the programs are directed at undergraduate students who are looking for a one-year program that provides business analytic training. Examples include:

McGill University, Desautels School of Business:
https://www.mcgill.ca/desautels/programs/mma

Queens University, Smith School of Business:
https://smith.queensu.ca/grad_studies/mma/index.php

HEC Montreal:
http://www.hec.ca/en/programs/masters/master-business-analytics/index.html

From our research to date, there are no business schools in Canada offering a Master's program in accounting with data and analytics. There are a larger number of business schools in the US that are running Masters programs in accounting, data and analytics. These include:

Arizona State University's W. P. Carey School of Business:
https://wpcarey.asu.edu/masters-programs/accounting/data-analytics-track

The University of Georgia's Terry College of Business:
http://www.terry.uga.edu/macc/

The University of Mississippi's Patterson School of Accountancy:
https://accountancy.wp.olemiss.edu/wp-content/uploads/sites/93/2013/07/2015-16-Master-of-AccountancyTax-flyer.pdf

The University of Missouri's Robert J. Trulaske, Sr. College of Business:
https://business.missouri.edu/news/2017/trulaske-joins-expanded-award-winning-kpmg-master-accounting-data-and-analytics-program

The University of Southern California's Leventhal School of Accounting:
https://www.marshall.usc.edu/programs/graduate-accounting-programs/master-accounting-emphasis-data-and-analytics

Virginia Tech's Pamplin College of Business:
https://acis.pamplin.vt.edu/

Villanova University, School of Business:
http://www1.villanova.edu/villanova/business/graduate/specializedprograms/mac.html

All of the American programs feature skills in data management and information technology along with descriptive and predictive statistics. The target is business professionals with accounting backgrounds. The programs seek to transition these accounting professionals into data and analytic roles. Most programs run between 8 months to 1 year in length and are offered exclusively within the business school. The

programs are slightly different in course structures focusing on tax, auditing, risk management and other areas of accounting. They vary in the number of credits required. All programs require a minimum of 30 credits with a maximum of 40 credits.

RESOURCES

a) Enrolment Plan

We expect to run a Certificate program in parallel with the MSc. Our expectations are that 50% of students who take the Certificate will move immediately into the MSc after completing the certificate coursework. Given current expressions of interest from potential students, and as indicated through the letter of support from KPMG (Appendix 2), we expect to be able to recruit 60-70 Certificate students in the first year (Summer 2019). This would suggest a total of 30-35 MSc students starting Year 2 in Summer 2020. Predicted enrolment numbers of 40-50 students per cohort per year for the proposed MSc program suggests 80-100 Certificate students. Advancement from the proposed Graduate Certificate in Accounting with Digital Analytics is expected to be a major factor for MSc admission numbers.

b) Resources required and/or available to implement the program (financial and personnel) including any new faculty appointments

Existing resources will be utilized. Canvas will be the online course delivery tool. Face-to-face sessions are minimal, meaning limited physical resources are needed. Face-to-face sessions will be held at the Segal Graduate School or offsite utilizing corporate space with an industry partner organization, with no requirement for additional lab space, library space, or other on-campus facilities. Students will not utilize in-house Beedie resources such as the Career Management Centre or student engagement opportunities. Administrative resources will come from existing Beedie Graduate Program staff at the Segal Graduate School. Existing faculty will be utilized, with no new hires planned.

c) Faculty member's teaching/supervision

SFU Beedie has exceptional, world class faculty with skills and expertise in data and analytics. Below provides example of credentials and profiles of some of our outstanding faculty in this area.

Accounting

Dr. Michael Favere-Marchesi: Ph.D. (University of Southern California), Master of Accountancy, B.Sc. (Brigham Young University), C.P.A. (California), Certified Internal Auditor profile

Dr. Jamal Nazari: Ph.D. Accounting (U of Calgary), MSc Accounting (U of Tehran), BA Accounting (U of Mashhad), CPA (BC), CMA, CGA (Alberta) profile

Dr. Kim Trottier: Ph.D. Accounting (UBC), MSc Accounting (UBC), BComm (Ottawa University), CPA, CA (Ontario) profile

Information Systems

Dr. Andrew Gemino: Ph.D. (University of British Columbia); M.B.A., M.A., B.A. (Simon Fraser University) profile

Dr. Nilesh Saraf: Ph.D. (University of Southern California), M.B.A. (Indian Institute of Management, Lucknow), B.Eng. (Maharaja Sayajirao U., India) profile

Dr. Peter Tingling: Ph.D. (U. of Western Ontario), M.B.A. (Wilfrid Laurier), CPA, CGA profile

Operations Management

Dr. Payman Jula: Ph.D. (UC Berkeley), M.Sc. (Western Michigan), B.Sc. (Tehran) profile

Dr. Michael Johnson: Ph.D., M.A.Sc., B.Eng, (Windsor) profile

Dr. Srini Krishnamoorthy: PhD (Columbia), PGDB (Indian institute of Management Lucknow), B.Tech. (Indian Institute of Technology, Madras) profile

Marketing

Dr. Bob Krider: Ph.D., M.Sc., B.Sc. (University of British Columbia) profile

Dr. Jason Ho: Ph.D. (University of British Columbia), Master of Philosophy in Marketing (Chinese University of Hong Kong) profile

Dr. Srabana Dasgupta: Ph.D. (University of Southern California), M.A. (Delhi School of Economics), B.A. (Jadavpur University) profile

d) Proposed tuition and other program fees including a justification

Tuition is to be charged on a per credit basis, using the existing Masters of Science in Finance (MSc Fin) tuition of $666.88 per unit plus additional student fees of approximately $200 per term (without a U-Pass, as the proposed program is primarily delivered online) as per the academic calendar.

MSc budget:

MSc Cohort		
FINANCIAL SUMMARY		
Revenue		
Tuition 1st year (40 students)	408,204	**Total Revenue per student**
Tuition 2nd year (40 students)	489,845	
Total Revenue	898,049	MSc 22,451
		Beedie Revenue per student
Tuition to Beedie minus VPA share (35.1)	**582,834**	
		MSc 14,571
One Time Development Fee	125,000	
Total Revenue To Beedie	**707,834**	
Expenses		
Program Salaries		
Academic Salaries:		
Certificate Faculty Salary	177,000	
MSC Faculty Salary	106,200	
TA	12,000	
Program Assistant Salary & Benefits (shared)	20,000	
Total Program Salaries	315,200	
Operations Cost		
Software Purchase Costs	3,000	Specialized software/
General Office Expenses	200	simulations may be used
Courier/Messenger Expense	750	
Program & Course Development	125,000	
Computing Services Charges	25	
Total Operations	128,975	
TOTAL EXPENSES	444,175	
Revenue - EXPENSES	263,659	

PART C: Appendices

Appendix 1 Calendar entry

Appendix 2 New course forms with course outlines

Appendix 3 Letter of support

Appendix 4 Faculty biographies

Accounting with Cognitive Analytics

Master of Science

Description of Program

The Master of Science in Accounting with Cognitive Analytics develops auditing with data analytics capabilities. With a curriculum integrating advanced auditing techniques, data and visualization skills, statistical and analytical capabilities, and agile teaming skills, accounting industry professionals will learn to contribute and lead analytical teams in organizational projects. Students are challenged in a team environment to demonstrate significant benefits that could accrue from real-world analytic projects in accounting, enabling graduates to excel as participants and business leaders in complex data and analytic projects.

Admission Requirements

Applicants must satisfy the University admission requirements as stated in Graduate General Regulation 1.3 in the SFU Calendar. An undergraduate degree in business, management, commerce, or other suitable quantitatively oriented programs is required and a minimum of two years of applicable work experience. Candidates holding a professional designation such as a CPA and evidence of strong mathematics competency would also be ideal candidates.

Advanced credit of equivalent courses may be granted from the Certificate in Accounting with Digital Analytics.

Program Requirements

The Master of Science in Accounting with Cognitive Analytics consists of course work (27 units) and an applied project (6 units) for a minimum of 33 units. Courses from other SFU graduate business programs, or a special topic course, may be substituted at the discretion of the academic director.

Students must complete all of

BUS 830 – Foundations of Business Systems and Data (3)

BUS 831 – Analyzing and Visualizing Accounting Data (3)

BUS 832 – Data Analytics for Auditing Practice (3)

BUS 838 – Collaboration, Teaming, and Agile Methods (3)

BUS 840 – Data Mining and Business Intelligence (3)

BUS 841 – Predictive Analytics for Accounting (3)

BUS 842 – Advanced Analytical Auditing (3)

BUS 844 – Fraudulent Financial Reporting (3)

and all of the projects

BUS 839 – Applied Project (3)

BUS 845 – Advanced Applied Project I (3)

BUS 846 – Advanced Applied Project II (3)

Standard Format for Graduate Program Calendar Entries

Program Length

Students are expected to complete the program requirements within five terms.

Other Information

Advanced credit of equivalent courses may be granted from the Certificate in Accounting with Digital Analytics with a final grade of B or higher.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the graduate general regulations, as well as the specific requirements for the program in which they are enrolled.

SFU GRADUATE AND POSTDOCTORAL STUDIES

New Graduate Course Proposal

Course Subject (eg. PSYC) BUS	Number (eg. 810) 830	Units (eg. 4) 3

Course title (max. 100 characters)

Foundations of Business Systems and Data

Short title (for enrollment/transcript - max. 30 characters) **Bus Systems & Data**

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)

Enterprise information systems, the relational database systems that underlie them, and creating value through competitive analytics. Develop an understanding of database querying and analytical applications to inspect, summarize, and transform data.

Rationale for introduction of this course

New course for the Master of Science in Accounting with Cognitive Analytics

Term of initial offering (eg. Fall 2019) Summer 2019	Course delivery (eg. 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks
Frequency of offerings/year Once/year	Estimated enrollment per offering 40-50

Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)

n/a

Prerequisite and/or Corequisite n/a

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 ☐ Independent ☐ Capstone ☐ _____

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

Repeat for credit? ☐ Yes ☑ No	Total repeats allowed? 0	Repeat within a term? ☐ Yes ☑ No
Required course? ☑ Yes ☐ No	Final exam required? ☐ Yes ☑ No	Capstone course? ☐ Yes ☑ No

Combined with a undergrad course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students:

* See important definitions on the curriculum website.

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
Andrew Gemino, Nilesh Saraf, Peter Tingling
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 Programs	Lesley McKay	buscoord@sfu.ca

ACADEMIC UNIT APPROVAL

A course outline must be 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	Signature	Date
Andrew Gemino		August 23, 2018

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

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature	Date
Jeff Derksen		SEP 2 4 2018

ADMINISTRATIVE SECTION (for DGS office only)
Library Check: SEP 07 2018
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

BUS 830: Foundations of Business Systems and Data

Instructor:
Office Phone:
Email:

Semester: Summer 2019
LMS: canvas.sfu.ca

COURSE DESCRIPTION

Introduces the foundations of business processes and the business value of data in enterprise systems. A focus is placed on business processes and the relational database management systems underlying these processes. Introductions to business process mapping (MS Visio), Structured Querying Language (SQL) and visual querying methods (MS Access) for accounting data are provided. Skills in using spreadsheets (MS Excel) to summarize, transform and clean imported accounting data are developed in addition to introductory skills in attaching to a relational database and developing descriptive summaries of accounting data using visual analytic software (Tableau).

OBJECTIVES

The following are course level goals. It is expected that participants completing the course will demonstrate a proficiency in the following:

- Understanding fundamental technology elements underlying competitive analytics in organizations.
- Identifying business processes that could benefit from process redesign.
- Mapping business processes
- Interacting with relational database management systems that include structured and unstructured accounting data.
- Utilizing SQL to design and interpret basic join queries from a relational database.
- Importing data from SQL queries into spreadsheets (MS Excel) to further summarize, clean and transform accounting data as a basis for analysis.
- Attaching visual analytic applications (Tableau) to relational databases in order to generate descriptive visual summaries of accounting data.

COURSE WORKLOAD EXPECTATIONS

You can expect 8 - 10 hours of work weekly for each course you are registered in. These activities will include participating in online activities, preparing readings and cases, answering practice questions, doing library research and working on group assignments with other students. Courses may be scheduled in a compressed format where classes are held in intensive session, but expectations of consistent preparation and participation remain for the length of the course.

BOOK AND MATERIALS

1. Owen, G. (2016). *Using Microsoft Excel and Access 2016 for Accounting*. Cengage Learning.
2. Parker, D. J. (2013). *Microsoft Visio 2013 Business Process Diagramming and Validation*. Packt Publishing Ltd.
3. Ryan, L. (2018). Visual Data Storytelling with Tableau, Pearson Addison Wesley.

LEARNING AND ASSESSMENT

Evaluation in this course will be based on a combination of group and individual work. As in all 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.

SFU BEEDIE SCHOOL OF BUSINESS

Individual	Weekly Quizzes	15%
	Individual Querying Assignment	20%
	Individual Visual Analysis Assignment	20%
Group	Group Process Mapping Assignment	20%
	Group In-class Exercise	25%
	Total	100%

Weekly Quizzes Due: Weekly, Sunday at 11:00 pm

A series of weekly multiple-choice quizzes will be provided through Canvas. Questions are drawn randomly from a question pool and provided to students in a timed format. Questions are focused on the material to be presented in the week to come and quizzes serve as a preparation for this material. Students have 30 minutes to answer 10 questions in an open book format. Students will receive feedback on their mark once the quiz closes.

Group Business Process Assignment Due:

Students will work in groups of 3-4 to create a process map for a business process defined in a case. Students will be required to use MS Visio to map the business process. Assignment requirements also include a short analysis of the process along with 2 recommendations for how to improve the overall process. Groups will be assessed on their ability to effectively visualize the business process along with the quality of the process improvement recommendations.

Individual Querying Assignment Due:

Students will work through a series of questions and provide the SQL code for each of the proposed queries. In addition, students will be asked to query data compiled in a relational database and then import this data into MS Excel. Students then use spreadsheet features to clean and transform data as described in the project. Students will be evaluated on the quality of the resulting transformed Excel worksheet.

Individual Visual Analysis Assignment Due:

Students will compile a brief visual analysis of an accounting dataset. The data set will be created from a database query that the students design. Students will use a visual analytic tool (Tableau) to provide a summary of the data in the query. Students will be evaluated on the quality of the visual summary and a short write-up of the analysis.

Group In-class Exercise Due

Students will work in groups of 3-4 in a time-limited, in-class assignment to integrate their learning about processes, querying and visual analysis. Students will be given a business process analysis case and then will be required to develop a business process map, develop queries that provide data about the process and then create a brief analysis of the process with some suggestions for improvement. Groups will be assessed on their ability to effectively visualize the business process, create the necessary queries and provide high-quality process improvement recommendations.

COURSE STRUCTURE

This course will consist of a blended approach with face-to-face and on-line components. Students work individually and as part of a group to complete course requirements.

SFU BEEDIE SCHOOL OF BUSINESS

READING SCHEDULE

Readings are available electronically and can be found on Canvas or from the library. They are labelled accordingly on the course website under the heading "Resources".

Session 1: Competing on Analytics

1. Davenport, T. H. (2006). Competing on analytics. *Harvard Business Review*, *84*(1), 98.
2. Parker, D. J. (2013). *Microsoft Visio 2013 Business Process Diagramming and Validation*. Packt Publishing Ltd., Chapter 1.

Session 2: Business Process Mapping

1. Parker, D. J. (2013). *Microsoft Visio 2013 Business Process Diagramming and Validation*. Packt Publishing Ltd., Chapters 2, 3 and 4.

Session 3: Business Process Mapping and Validation

1. Parker, D. J. (2013). *Microsoft Visio 2013 Business Process Diagramming and Validation*. Packt Publishing Ltd., Chapters 5, 6 and 7.

Session 4: Business Process Improvement

1. Borthick, A. F., Schneider, G. P., & Vance, A. (2011). Using graphical representations of business processes in evaluating internal control. *Issues in Accounting Education*, *27*(1), 123-140.
2. Parker, D. J. (2013). *Microsoft Visio 2013 Business Process Diagramming and Validation*. Packt Publishing Ltd., Chapters 8 and 9.

Session 5: Business Process Improvement Reporting

1. Parker, D. J. (2013). *Microsoft Visio 2013 Business Process Diagramming and Validation*. Packt Publishing Ltd., Chapter 10 and 11.

Session 6: Introduction to SQL in Accounting

1. Rezaee, Z., Sharbatoghlie, A., Elam, R., & McMickle, P. L. (2002). Continuous auditing: Building automated auditing capability. *Auditing: A Journal of Practice & Theory*, *21*(1), 147-163.
2. Owen, G. (2016). *Using Microsoft Excel and Access 2016 for Accounting*. Cengage Learning., Chapter 1 through 5 (for review).

Session 7: Introduction to Database Querying

1. Owen, G. (2016). *Using Microsoft Excel and Access 2016 for Accounting*. Cengage Learning., Chapters 6 and 7.

Session 8: Visual Querying using MS Access

1. Owen, G. (2016). *Using Microsoft Excel and Access 2016 for Accounting*. Cengage Learning., Chapters 8 and 9.

Session 9: Developing Reports

1. Owen, G. (2016). *Using Microsoft Excel and Access 2016 for Accounting*. Cengage Learning. Chapters 10 and 11.

Session 10: Introduction to Data Visualization

1. Ryan, L. (2018). Visual Data Storytelling with Tableau, Pearson Addison Wesley. Chapter 1 and 2.

SFU BEEDIE SCHOOL OF BUSINESS

Session 11: Data Visualization in Accounting

1. Dilla, W., Janvrin, D. J., & Raschke, R. (2010). Interactive data visualization: New directions for accounting information systems research. *Journal of Information Systems*, *24*(2), 1-37.
2. Ryan, L. (2018). Visual Data Storytelling with Tableau, Pearson Addison Wesley. Chapter 3.

Session 12

No readings. In-class exercise.

ACADEMIC HONESTY

Plagiarism is the unacknowledged use of other people's ideas or work. Plagiarism is often unintentional and can be avoided through careful work habits and familiarity with academic conventions. But whether intentional or unintentional, plagiarism is recognized as a serious academic offence. The university's strong stance against plagiarism reflects our shared commitment to intellectual honesty, and the original contributions of each student and faculty member validate and sustain the university as a vital centre of knowledge and research. It is your responsibility, as a student and a member of the academic community, to ensure that you have correctly acknowledged and cited all the resources you have used in writing your work.

The following examples are representative but not exhaustive of activities constituting academic dishonesty:

- Plagiarism (presenting the work of another person as your own)
- Submitting the same work more than once without prior approval
- Translating a work from one language to another without complete and proper citation.
- Cheating
- Impersonation (having someone else write your exam)
- Submitting false records or information (forged medical notes)
- Stealing or destroying the work of another student
- Unauthorized or inappropriate use of computers, cell phones, calculators and other forms of technology in course work, assignments or examinations
- Falsifying material that is subject to academic evaluation
- Any activity not specifically outlined in this document that is intended to circumvent the standards of academic honesty

You are expected to post comments, and write reports and exams in your own words. Whenever you take an idea or passage from another author, you must acknowledge it by appropriately citing the source. If you are struggling to complete an assignment, please see your instructor or the program office for additional assistance.

Ignorance of these standards will not preclude the imposition of penalties for academic dishonesty.

For more information you will find the full SFU policy on Academic Honesty (from which the above was summarized) at: http://www.sfu.ca/policies/gazette/student.html

SFU GRADUATE AND POSTDOCTORAL STUDIES

New Graduate Course Proposal

Course Subject (eg. PSYC) BUS	Number (eg. 810) 831	Units (eg. 4) 3

Course title (max. 100 characters)

Analyzing and Visualizing Accounting Data

Short title (for enrollment/transcript - max. 30 characters) **Analyzing & Visualizing Data**

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)

An exploration of financial and non-financial data using summary measures, predictive models for decision-making, and graphic visualizations.

Rationale for introduction of this course

New course for the Master of Science in Accounting with Cognitive Analytics

Term of initial offering (eg. Fall 2019) Summer 2019	Course delivery (eg. 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks
Frequency of offerings/year Once/year	Estimated enrollment per offering 40-50

Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)

n/a

Prerequisite and/or Corequisite n/a

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 ☐ Independent ☐ Capstone ☐ _____

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

Repeat for credit? ☐ Yes ☑ No	Total repeats allowed? 0	Repeat within a term? ☐ Yes ☑ No
Required course? ☑ Yes ☐ No	Final exam required? ☐ Yes ☑ No	Capstone course? ☐ Yes ☑ No

Combined with a undergrad course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students:

* See important definitions on the curriculum website.

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
Michael Favere-Marchesi, Jamal Nazari, Kim Trottier
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 Programs	Lesley McKay	buscoord@sfu.ca

ACADEMIC UNIT APPROVAL

A course outline must be included.

Non-departmentalized faculties need not sign

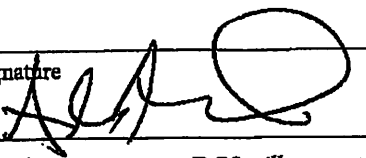
Graduate Program Committee	Signature	Date
Department Chair	Signature	Date

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

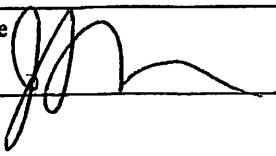
Overlap check done? ☑ YES

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	Signature	Date
Andrew Gemino		August 23, 2018

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

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature	Date
Jeff Derksen		SEP 24 2018

ADMINISTRATIVE SECTION (for DGS office only)
Library Check: SEP 07 2018
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

BUS 831: Analyzing and Visualizing Accounting Data

Instructor:
Office Phone:
Email:

Semester: Summer 2019
LMS: canvas.sfu.ca

COURSE DESCRIPTION

Explores accounting data using univariate descriptive statistics, sampling and testing procedures for summary measures. Develops exploratory data analysis techniques and graphic visualizations to display relationships in accounting data that can be communicated to an executive audience. Introduces basics for multivariate predictive models that support accounting decision making. Develops basic multivariate predictive models to explore and validate data relationships and develops skills in communicating these relationships to business professionals.

OBJECTIVES

The following are course level goals. It is expected that participants completing the course will demonstrate a proficiency in the following:

- Apply spreadsheet function (Excel) to create randomized samples and validate procedure.
- Use pivot tables in spreadsheet (Excel) for exploratory data analysis of accounting data.
- Apply visual analytic software (Tableau) to visualize descriptive statistics from accounting data.
- Perform a confirmatory data analysis and identify outliers in an accounting data population.
- Identify appropriate statistical techniques and test statistic(s) for several business hypotheses.
- Understand the value of data mining and using a data analysis method (e.g. CRISP-DM).
- Utilize several multivariate predictive techniques for an accounting related issue.
- Develop and validate a multivariate predictive analytic model for an accounting issue.

COURSE EXPECTATIONS

You can expect 8 - 10 hours of work weekly for each course you are registered in. These activities will include participating in online activities, preparing readings and cases, answering practice questions, doing library research and working on group assignment with other students. Courses may be scheduled in a compressed format where classes are held in intensive session, but expectations of consistent preparation and participation remain for the length of the course.

BOOK AND MATERIALS

1. Appelbaum, D. (2017). Introduction to Data Analysis for Auditors and Accountants. The CPA Journal, 7.
2. Black, Ken and Castillo, Ignacio. (2014). Business Statistics for Contemporary Decision Making, 2nd Canadian Edition. Wiley.
3. Ferrari, Alberto and Russo, Marco, (2017). The Definitive Guide to DAX: Business intelligence with MS Excel, MS SQL Server, and Power BI. Microsoft Press.
4. Ryan, L. (2018). Visual Data Storytelling with Tableau, Pearson Addison Wesley.
5. Selected readings and custom courseware may be provided on Canvas.

LEARNING AND ASSESSMENT

Evaluation in this course will be based on a combination of group and individual work. As in all large 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.

SFU BEEDIE SCHOOL OF BUSINESS

Individual	Individual Assignment: Sampling Procedure	20%
	Individual Assignment: Descriptive Statistics	30%
Group	Predictive Model Report	30%
	Predictive Model Presentation	20%
	Total	100%

Individual Sampling Procedure Assignment Due:

Students will work on business questions and apply their knowledge of spreadsheets to create randomized samples and validate these procedures. Student will then work toward a confirmatory data analysis with a holdback sample to identify outliers in an accounting data population. Students will be evaluated on the quality of the analysis and depth of analysis on identification of outliers.

Individual Descriptive Statistics Assignment Due:

Students will develop an exploratory data analysis using pivot tables in spreadsheets (Excel) combined with visual analytic (Tableau) techniques to communicate important aspects of accounting data. A concise report will be developed that focuses on the business value of the exploratory analysis. Students will be evaluated on the quality of the combination of exploratory and visual summaries as well as the identification and communication of the business value associated with the exploratory analysis.

Group Predictive Modeling Report Due:

Students will work in groups of 3-4 to create a predictive model from an accounting data set. The report will be written for a business executive audience, so an emphasis on the business impacts of the predictive model is essential. Groups will be assessed on their ability to effectively communicate the business implications of the predictive model along with the quality of the predictive modeling process recommendations.

Group Predictive Modeling Presentation Due:

In the final session, students will make a time restricted, business presentation in groups of 3-4. This presentation should integrate their learning about sampling, exploratory analysis and predictive modeling. The presentation should be formatted for a business executive audience. Groups will be assessed on their ability to effectively visualize and communicate the business issue and on the quality of the recommendations emerging from their analysis.

COURSE STRUCTURE

This course will consist of a blended approach with face-to-face and on-line components. Students work individually and as part of a group to complete course requirements.

READING SCHEDULE

Readings are available electronically and can be found on Canvas or from the library. They are labelled accordingly on the course website under the heading "Resources".

Session 1: Visual Storytelling with Tableau

1. Appelbaum, D. (2017). Introduction to Data Analysis for Auditors and Accountants. The CPA Journal, 7.
2. Ryan, L. (2018). Visual Data Storytelling with Tableau, Pearson Addison Wesley. Chapters 1.

Session 2: Visual Analytics and Choosing the Right Visual Aid

1. Ryan, L. (2018). Visual Data Storytelling with Tableau, Pearson Addison Wesley. Chapters 2 and 3.

Session 3: Intermediate Visual Analytics I

1. Ryan, L. (2018). Visual Data Storytelling with Tableau, Pearson Addison Wesley. Chapters 4, 5 and 6.

Session 4: Intermediate Visual Analytics II

1. Ryan, L. (2018). Visual Data Storytelling with Tableau, Pearson Addison Wesley. Chapters 7, 8 and 9.

Session 5: Analysis with MS Excel I

1. Ferrari, Alberto and Russo, Marco, (2017). The Definitive Guide to DAX: Business intelligence with MS Excel, MS SQL Server, and Power BI. Microsoft Press. Chapter 1 and 2.

Session 6: Analysis with MS Excel II

1. Ferrari, Alberto and Russo, Marco, (2017). The Definitive Guide to DAX: Business intelligence with MS Excel, MS SQL Server, and Power BI. Microsoft Press. Chapter 3 and 4.

Session 7: Analysis with MS Excel III

1. Ferrari, Alberto and Russo, Marco, (2017). The Definitive Guide to DAX: Business intelligence with MS Excel, MS SQL Server, and Power BI. Microsoft Press. Chapter 5, 6 and 7.

Session 8: Analysis with MS Excel IV

1. Ferrari, Alberto and Russo, Marco, (2017). The Definitive Guide to DAX: Business intelligence with MS Excel, MS SQL Server, and Power BI. Microsoft Press. Chapter 8 and 9.

Session 9: Sampling and Sample Distributions

1. Black, Ken and Castillo, Ignacio. (2014). Business Statistics for Contemporary Decision Making, 2nd Canadian Edition. Wiley. Chapter 7 and 8.

Session 10: Hypothesis Testing I

1. Black, Ken and Castillo, Ignacio. (2014). Business Statistics for Contemporary Decision Making, 2nd Canadian Edition. Wiley. Chapter 8 and 9.

Session 11: Hypothesis Testing II

1. Black, Ken and Castillo, Ignacio. (2014). Business Statistics for Contemporary Decision Making, 2nd Canadian Edition. Wiley. Chapter 10 and 11.

Session 12

No readings. In-class group presentations.

ACADEMIC HONESTY

Plagiarism is the unacknowledged use of other people's ideas or work. Plagiarism is often unintentional and can be avoided through careful work habits and familiarity with academic conventions. But whether intentional or unintentional, plagiarism is recognized as a serious academic offence. The university's strong stance against plagiarism reflects our shared commitment to intellectual honesty, and the original contributions of each student and faculty member validate and sustain the university as a vital centre of knowledge and research. It is your responsibility, as a student and a member of the

academic community, to ensure that you have correctly acknowledged and cited all the resources you have used in writing your work.

The following examples are representative but not exhaustive of activities constituting academic dishonesty:

- Plagiarism (presenting the work of another person as your own)
- Submitting the same work more than once without prior approval
- Translating a work from one language to another without complete and proper citation.
- Cheating
- Impersonation (having someone else write your exam)
- Submitting false records or information (forged medical notes)
- Stealing or destroying the work of another student
- Unauthorized or inappropriate use of computers, cell phones, calculators and other forms of technology in course work, assignments or examinations
- Falsifying material that is subject to academic evaluation
- Any activity not specifically outlined in this document that is intended to circumvent the standards of academic honesty

You are expected to post comments, and write reports and exams in your own words. Whenever you take an idea or passage from another author, you must acknowledge it by appropriately citing the source. If you are struggling to complete an assignment, please see your instructor or the program office for additional assistance.

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For more information you will find the full SFU policy on Academic Honesty (from which the above was summarized) at: http://www.sfu.ca/policies/gazette/student.html

SFU GRADUATE AND POSTDOCTORAL STUDIES

New Graduate Course Proposal

Course Subject (eg. PSYC) BUS	Number (eg. 810) 832	Units (eg. 4) 3

Course title (max. 100 characters)

Data Analytics for Auditing Practice

Short title (for enrollment/transcript - max. 30 characters) **Data Analytics for Auditing**

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 gradingbasis is satisfactory/unsatisfactory include this in the description)

The use of information technology across audit processes. Applying analytics to deliver a high-quality audit and improve internal and external reporting quality.

Rationale for introduction of this course

New course for the Master of Science in Accounting with Cognitive Analytics

Term of initial offering (eg. Fall 2019) Summer 2019	Course delivery (eg. 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks
Frequency of offerings/year Once/year	Estimated enrollment per offering 40-50

Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)

n/a

Prerequisite and/or Corequisite n/a

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 ☐ Independent ☐ Capstone ☐ _____

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

Repeat for credit? ☐ Yes ☑ No	Total repeats allowed? 0	Repeat within a term? ☐ Yes ☑ No
Required course? ☑ Yes ☐ No	Final exam required? ☑ Yes ☐ No	Capstone course? ☐ Yes ☑ No

Combined with a undergrad course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students:

* See important definitions on the curriculum website.

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
Andrew Gemino, Nilesh Saraf, Peter Tingling
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 Programs	Lesley McKay	buscoord@sfu.ca

ACADEMIC UNIT APPROVAL

A course outline must be 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	Signature	Date
Andrew Gemino		August 23, 2018

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

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature	Date
Jeff Derksen		SEP 2 4 2018

ADMINISTRATIVE SECTION (for DGS office only)
Library Check: SEP 07 2018
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

BUS 832: Data Analytics for Auditing Practice

Instructor:
Office Phone:
Email:

Semester: Summer 2019
LMS: canvas.sfu.ca

COURSE DESCRIPTION

Learn to apply information technology across the end-to-end audit and accounting process. Access large quantities of accounting data, and use analysis to dig deeper, and deliver a high-quality audit, that provide clients with valuable insights to make better informed business decisions and improve their internal and external reporting quality.

OBJECTIVES

The following are course level goals. It is expected that participants completing the course will demonstrate a proficiency in the following:

- Recognizing how data analytics can address accounting and business questions
- Understand the process to clean and prepare financial and non-financial data for analysis
- Recognize how completeness, reliability, or validity can affect data quality
- Perform basic data analysis to address business and accounting issues.
- Communicate the results of analysis to relevant stakeholders

COURSE EXPECTATIONS

You can expect 8 - 10 hours of work weekly for each course you are registered in. These activities will include participating in online activities, preparing readings and cases, answering practice questions, doing library research and working on group assignment with other students. Courses may be scheduled in a compressed format where classes are held in intensive session, but expectations of consistent preparation and participation remain for the length of the course.

BOOK AND MATERIALS

1. Richardson V.J., Teeter, R., & Terrell, K. (2018). Data Analytics for Accounting, McGraw-Hill Higher Education.
2. Additional selected readings will be provided on Canvas

LEARNING AND ASSESSMENT

Evaluation in this course will be based on a combination of group and individual work. As in all large 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	Weekly Quizzes	20%
	Final Exam	40%
Group	Group Case 1	20%
	Group Case 2	20%
	Total	100%

SFU BEEDIE SCHOOL OF BUSINESS

Weekly Quizzes Due: Every week, Saturday at Midnight

A series of weekly multiple-choice and short answer quizzes will be provided through Canvas. Students will have about 40 minutes to answer 10 multiple-choice questions and two short answer questions. Students will receive feedback within 48 hours after finishing each quiz.

Final Exam Due:

Final exam will be based on all the materials and concepts covered in the course.

Group Case 1 Due:

Students will work in groups of 3-4 to develop an audit plan from the available financial and non-financial datasets. Students will set up a could folder, review the changes to the working papers, identify audit data requirements, and prepare an audit plan. The audit plan developed by the groups will be assessed based on the procedures outlined in the audit plan. Each of these procedures should be supported by supplemental information and analysis.

Group Case 2 Due:

Students will work in groups of 3-4 on a case of financial statement analytic tool. Students will use XBRLAnalyst to access XBRL data, use XBRLAnalyst to create dynamic common size financial statements, and use SQL to query an XBRL databse. Students will be assessed based on the quality of analysis performed using the XBRLAnalyst.

COURSE STRUCTURE

This course will consist of a blended approach with face-to-face and on-line components. Students work individually and as part of a group to complete course requirements. A mixture of case study discussions, small group exercises, case analysis, and group assignments may be utilized.

READING SCHEDULE

Additional selected readings are available electronically and can be found on Canvas. Solution to select cases and exercises will also be posted to Canvas. Students are expected to read the background materials and related chapters prior to attending each module.

TENTATIVE TIMETABLE

DATE	TOPIC	CHAPTER
Week 1	**Data Analytics in Accounting:** • Explain why data analytics matter to accountants and how it affects auditing, financial accounting, and tax • Describe the data analytics process using the IMPACT cycle • Identify accounting and auditing issues that data analytics can address • Describes the skills needed by accountants to perform data analysis	1
Week 2	**Accounting Data Preparation and Cleaning:** • Understand how data are organized in an accounting information system	2

	• Understand how financial data are stored in a relational database • Explain and apply extraction, transformation, and loading technique	
Week 3	**Accounting Data Preparation and Cleaning:** • Define data analytics approaches in accounting • Explain the profiling approach to accounting data analytics • Describe the data reduction approaches to data analytics used in accounting • Regression approach to accounting data analytics • Classification approach to accounting data analytics • Clustering approach to accounting data analytics	3
Week 4	**Data Visualization and Summaries to Communicate With Stakeholders** • Identify the objective of data visualization • Selecting the best charts to present data • Chart refinement for effective and efficient communication • Identifying the audience, tone and content of the reports	4
Week 5	**The Modern Audit and Continuous Auditing** • Understand modern auditing techniques • Evaluate an audit plan • Understand the nature, extent, and timing of audit tests • Select appropriate audit tasks and approaches • Evaluate audit alarms as part of continuous auditing • Understanding working paper platforms	5
Week 6	**Introduction to Caseware IDEA Analytics tools** • IDEA data analytics • IDEA Sampling techniques • IDEA Statistical methods	Readings on Canvas
Week 7	**Audit Data Analytics** • Understand different types of analysis for auditing and when to use them • Understand basic descriptive audit analyses • Understand more complex statistical analyses, including Benford's law • Understand advanced predictive and prescriptive audit analytics	6
Week 8	**Introduction to KPMG Automated Audit Procedures** Using KPMG Automated Audit Procedures to: • Detection of unusual transaction data • Preparation of analysis data by collecting data from ERP (Enterprise Resource Planning) • Statistical Evaluation of audit risk by using financial and non-financial data	Readings on Canvas

Week 9	**Introduction to Electronic Account Analysis Tool (eAAT)** Using eAAT to: • Detection of unusual transaction data • Preparation of analysis data by collecting data from ERP (Enterprise Resource Planning) • Statistical Evaluation of audit risk by using financial and non-financial data	Readings on Canvas
Week 10	**Generating Key Performance Indicators** • Evaluate management requirements and identify useful KPIs from a list • Evaluate underlying data quality used for KPI • Create dashboard using KPIs	7
Week 11	**Financial Statement Analytics** • Describe how XBRL tags financial reporting data • Understand how different types of ratio analysis can be facilitated by XBRL • Explain how to create and read visualizations of financial statement data • Describe the value of text mining and sentiment analysis of financial reporting	8
Week 12	**FINAL EXAM**	

ACADEMIC HONESTY

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The following examples are representative but not exhaustive of activities constituting academic dishonesty:

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- Submitting the same work more than once without prior approval
- Translating a work from one language to another without complete and proper citation.
- Cheating
- Impersonation (having someone else write your exam)
- Submitting false records or information (forged medical notes)
- Stealing or destroying the work of another student
- Unauthorized or inappropriate use of computers, cell phones, calculators and other forms of technology in course work, assignments or examinations
- Falsifying material that is subject to academic evaluation
- Any activity not specifically outlined in this document that is intended to circumvent the standards of academic honesty

SFU BEEDIE SCHOOL OF BUSINESS

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SFU GRADUATE AND POSTDOCTORAL STUDIES

New Graduate Course Proposal

Course Subject (eg. PSYC) BUS	Number (eg. 810) 838	Units (eg. 4) 3

Course title (max. 100 characters)

Collaboration, Teaming, and Agile Methods

Short title (for enrollment/transcript - max. 30 characters) **Collaboration & Teaming**

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)

Working collaboratively to practice agile project management techniques through team-based learning.

Rationale for introduction of this course

New course for the Master of Science in Accounting with Cognitive Analytics

Term of initial offering (eg. Fall 2019) Summer 2019	Course delivery (eg. 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks
Frequency of offerings/year Once/year	Estimated enrollment per offering 40-50

Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)

n/a

Prerequisite and/or Corequisite n/a

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 ☐ Independent ☐ Capstone ☐ _____

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

Repeat for credit? ☐ Yes ☑ No	Total repeats allowed? 0	Repeat within a term? ☐ Yes ☑ No
Required course? ☑ Yes ☐ No	Final exam required? ☐ Yes ☑ No	Capstone course? ☐ Yes ☑ No

Combined with a undergrad course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students:

* See important definitions on the curriculum website.

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
Andrew Gemino, Payman Jula, Michael Johnson
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 Programs	Lesley McKay	buscoord@sfu.ca

ACADEMIC UNIT APPROVAL

A course outline must be included.

Non-departmentalized faculties need not sign

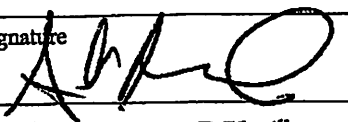
Graduate Program Committee	Signature	Date
Department Chair	Signature	Date

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

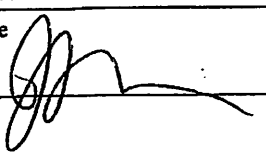
Overlap check done? ☑ YES

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	Signature	Date
Andrew Gemino		August 23, 2018

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

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature	Date
Jeff Derksen		SEP 2 4 2018

ADMINISTRATIVE SECTION (for DGS office only)
Library Check: SEP 0 7 2018
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

BUS 838: Collaboration, Teaming, and Agile Methods

Instructor:
Office Phone:
Email:

Semester: Summer 2019
LMS: canvas.sfu.ca

COURSE DESCRIPTION

Analytic projects in accounting require significant collaboration, project management and teaming skills. No individual alone has all the requisite skills for a complete, complex analysis. Students will work collaboratively practicing agile project management techniques. Learning how to work productively in agile project environments is a critical skill for project success. These skills will be developed throughout the course in team-based assignments.

OBJECTIVES

The following are course level goals. It is expected that participants completing the course will demonstrate proficiency in the following:

- Understanding the elements of creating effective teams and how to support other team members.
- Using aspects of "teaming" in short term project teams.
- Utilizing traditional project management methods to create a project plan.
- Applying agile project management techniques, focusing on Scrum methodology, to deliver a short-term project.

COURSE EXPECTATIONS

You can expect 8 - 10 hours of work weekly for each course you are registered in. These activities will include participating in online activities, preparing readings and cases, answering practice questions, doing library research and working on group assignment with other students. Courses may be scheduled in a compressed format where classes are held in intensive session, but expectations of consistent preparation and participation remain for the length of the course.

BOOK AND MATERIALS

1. Duhigg, C. (2016). What Google learned from its quest to build the perfect team. *The New York Times Magazine*, *26*, 2016.
   reWork,. https://rework.withgoogle.com/print/guides/5721312655835136/
2. Edmondson, A. C. (2012). Teamwork on the fly. *Harvard Business Review*, *90*(4), 72-80.
3. Project Management Institute. (2017). Agile Practice Guide. Project Management Institute. ISBN 9781628253993
4. Selected readings may be provided on Canvas

LEARNING AND ASSESSMENT

Evaluation in this course will be based on a combination of group and individual work. As in all large 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	Weekly Quizzes	15%
	Team Feedback Assignment	20%
	Self-report – Final report	20%

SFU **BEEDIE SCHOOL OF BUSINESS**

Group	Project Proposal – Proposal and Presentation	15%
	Final Project Plan and Presentation	30%
	Total	100%

Weekly Quizzes Due: Weekly, Sunday at 11:00 pm

A series of weekly multiple-choice quizzes will be provided through Canvas. Questions are drawn randomly from a question pool and provided to students in a timed format. Questions are focused on the material to be presented in the week to come and quizzes serve as a preparation for this material. Students will have 30 minutes to answer 10 questions in an open book format. Students will receive feedback on their mark once the quiz closes.

Team Feedback Assignment Due:

Students will work in groups on the proposal and project plan. This group work will enable team members to gauge the effectiveness of other groups members. Each team member will commit to a process of providing feedback to other group members and listening to feedback from others. Each student will be evaluated on the quality of the feedback provided to team members by both instructors and team members.

Self-report Final Report Due:

A final self-report will be collected for each team member. This reflexive self-report should consider the experiences and knowledge gained in completing the project proposal and project plan. Students are asked to demonstrate how they have improved their ability to team and participate in project-based work. Students are asked to integrate readings and other experiences and include specific examples whenever possible. Students will be evaluated on the breadth and depth of the reflexive narrative and the quality of the writing provided in the document.

Group Project Proposal and Presentation Due:

Students will work in groups of 3-4 to create a proposal for their final project to be completed in the final Year 1 course BUS 839: Applied Project. Students will make a time restricted, business presentation of this proposal in their groups. The proposal will follow a project management format including introduction, work breakdown structure proposed schedule and budget along with risk analysis. Groups will be assessed on the quality of the proposal and the group 's ability to effectively communicate project details and create a compelling proposal for further development.

Group Project Plan and Presentation Due

The Group Project Plan builds on the Group Project Proposal document. The plan should include all elements of the proposal plus a detailed schedule and work breakdown structure for the final project for BUS 839. In the final sessions, students will make a time restricted, business presentation in groups of 3-4. This presentation should integrate their learning about traditional and agile project management. The presentation should be formatted for a business executive audience. Groups will be assessed on their ability to effectively visualize and communicate the project plan and on the quality of the project plan emerging from their team work.

COURSE STRUCTURE

This course will consist of a blended approach with face-to-face and on-line components. Students work individually and as part of a group to complete course requirements. A mixture of case study discussions, small group exercises, case analysis, and group assignments may be utilized.

SFU BEEDIE SCHOOL OF BUSINESS

READING SCHEDULE

Readings are available electronically and can be found on Canvas or from the library. They are labelled accordingly on the course website under the heading "Resources".

Session 1: Essentials of Teaming

1. Edmondson, A. C. (2012). Teamwork on the fly. *Harvard Business Review*, *90*(4), 72-80
2. Duhigg, C. (2016). What Google learned from its quest to build the perfect team. *The New York Times Magazine*, *26*, 2016

Session 2: Building Effective Teams

1. Duhigg, C. (2016). What Google learned from its quest to build the perfect team. *The New York Times Magazine*, *26*, 2016.
    - reWork,. https://rework.withgoogle.com/print/guides/5721312655835136/

Session 3: Essentials of Project Management I

1. Project Management Institute. (2017). Agile Practice Guide. Project Management Institute. Chapter 1.

Session 4: Essentials of Project Management II

1. Project Management Institute. (2017). Agile Practice Guide. Project Management Institute. Chapter 2.

Session 5: Essentials of Project Management III

1. Project Management Institute. (2017). Agile Practice Guide. Project Management Institute. Chapter 3.

Session 6: In-class Presentations

No readings. In-class group presentations.

Session 7: Introduction to Agile Project Management

1. Project Management Institute. (2017). Agile Practice Guide. Project Management Institute. Chapter 4.
2. Edmondson, A. C. (2012). Teamwork on the fly. *Harvard Business Review*, *90*(4), 72-80

Session 8: Agile Project Management Methods I

1. Project Management Institute. (2017). Agile Practice Guide. Project Management Institute. Chapter 5.

Session 9: Agile Project Management Methods II

1. Project Management Institute. (2017). Agile Practice Guide. Project Management Institute. Chapter 6.

SFU BEEDIE SCHOOL OF BUSINESS

Session 10: Hybrid Approaches to Project Management

1. Project Management Institute. (2017). Agile Practice Guide. Project Management Institute. Chapter 7.

Session 11: In-class Presentations

No readings. In-class group presentations.

Session 12: In-class Presentation

No readings. In-class group presentations.

ACADEMIC HONESTY

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- Cheating
- Impersonation (having someone else write your exam)
- Submitting false records or information (forged medical notes)
- Stealing or destroying the work of another student
- Unauthorized or inappropriate use of computers, cell phones, calculators and other forms of technology in course work, assignments or examinations
- Falsifying material that is subject to academic evaluation
- Any activity not specifically outlined in this document that is intended to circumvent the standards of academic honesty

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SFU GRADUATE AND POSTDOCTORAL STUDIES

New Graduate Course Proposal

Course Subject (eg. PSYC) BUS	Number (eg. 810) 839	Units (eg. 4) 3

Course title (max. 100 characters)

Applied Project

Short title (for enrollment/transcript - max. 30 characters) **Applied Project**

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)

A team-based strategic business analysis and essay supervised by a Simon Fraser University faculty member with support from a senior industry partner. Graded on a satisfactory/unsatisfactory basis.

Rationale for introduction of this course

New course for the Master of Science in Accounting with Cognitive Analytics

Term of initial offering (eg. Fall 2019) Summer 2019	Course delivery (eg. 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks
Frequency of offerings/year Once/year	Estimated enrollment per offering 40-50

Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)

n/a

Prerequisite and/or Corequisite n/a

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 ☐ Independent ☐ Capstone ☐ _____

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

Repeat for credit? ☐ Yes ☑ No

Total repeats allowed? 0

Repeat within a term? ☐ Yes ☑ No

Required course? ☑ Yes ☐ No

Final exam required? ☐ Yes ☑ No

Capstone course? ☐ Yes ☑ No

Combined with a undergrad course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students:

* See important definitions on the curriculum website.

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
Andrew Gemino, Michael Johnson, Peter Tingling, Jamal Nazari
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 Programs	Lesley McKay	buscoord@sfu.ca

ACADEMIC UNIT APPROVAL

A course outline must be 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	Signature	Date
Andrew Gemino		August 23, 2018

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

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature	Date
Jeff Derksen		SEP 24 2018

ADMINISTRATIVE SECTION (for DGS office only)
Library Check: SEP 07 2018
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 | MASTER OF BUSINESS ADMINISTRATION

BUS 839: Applied Project

Instructor:
Office Phone:
Email:

Semester: Fall 2019
LMS: canvas.sfu.ca

COURSE DESCRIPTION

The applied project is designed for students to undertake a team-based strategic business analysis to further their learning and career goals. Students will undertake a strategic business analysis and write an extended essay jointly supervised by a Simon Fraser University faculty member and an industry partner. A faculty member will negotiate the purpose, content and deliverables of each project with the students and the sponsoring organization. Common topics include a broad strategic analysis, an in-depth analysis of a specific business problem, a business plan, or a detailed functional strategy.

OBJECTIVES

The Applied Project course is an opportunity for students to use their knowledge and ability to create a team-based, high quality analysis to develop strategic value for themselves and a client (typically, the student's organization).

The project provides students with an opportunity to comprehensively integrate the various subjects studied during the certificate program. Collaborative learning is facilitated through a final presentation to the industry partner organization.

BOOK AND MATERIALS

There are no required readings for this course. Resources provided on Canvas:

1. Detailed information and schedule of deadlines
2. Selected readings and information about resources
3. Submission requirements information
4. Examples of various project types

LEARNING AND ASSESSMENT

Each project is assessed on a satisfactory/unsatisfactory basis and will be approved only after it meets a minimum quality threshold determined by the course instructor. Students will be expected to revise their work until that threshold is met. The quality threshold is a function of content, including analytical processes and conclusions, and University standards for written communications.

Individual	Self-reflection	20 %
	Peer review	20 %
	Participation	10 %
Group	Team Presentation	30 %
	Team Report	20 %
	Total	100 %

Group Project Plan

Previously developed in Summer 2019 in BUS 838

Students will work in groups of 3-4 to operationalize the applied project proposal and plan created in BUS 838: Collaboration, Teaming, and Leading Change. A project management format including introduction, work breakdown structure, proposed schedule, and budget along with risk analysis will be

used. The plan should include all elements of the proposal plus a detailed schedule and work breakdown structure for the term.

Group Project Presentation Due:

In the final sessions, students will make a business presentation in groups of 3-4. This presentation should integrate their learning across Certificate courses. The presentation should be formatted for a business executive audience. Groups will be assessed on their ability to effectively visualize and communicate the project plan and on the quality of the project that emerges from their team work.

Team Report Due:

Management requires you to deliver a report to accompany your presentation. In it, you should include detailed charts, projections, figures, and analysis, etc., that would be inappropriate to include in your presentation, but which would be necessary to develop a complete picture of your proposed solution. You should also include a copy of your slide deck with your report.

Self-reflective Essay Due:

An individual paper (5 pages – 1200 words max) reflecting on your learnings throughout the Certificate program. Some considerations are as follows:

- What did you learn from the team-based applied project?
- What did you learn about managing organizations?
- What experiences did you find most interesting/informative? Why?
- Any impact on future career moves?

You are strongly encouraged to do additional research, as well as integrate relevant material from other Certificate courses.

COURSE STRUCTURE

This course will consist of a blended approach with face-to-face and on-line components. Students work individually and as part of a group to complete course requirements.

Session	Date	Topic
1	September	Introductions, Teams and Project Plans, High-level Overview
2	Sept-Nov	Teams work with instructor and industry partner to develop applied project content
3	November	Practice Presentations
4	Late November	Practice Presentations and Adjudication Panel
5	December	Presentations to organization executives

ACADEMIC HONESTY

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Ignorance of these standards will not preclude the imposition of penalties for academic dishonesty.

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ABOUT THE COURSE INSTRUCTOR

Instructors may write their own short biography, or use the existing one on the Beedie staff directory.

SFU GRADUATE AND POSTDOCTORAL STUDIES

New Graduate Course Proposal

Course Subject (eg. PSYC) BUS	Number (eg. 810) 840	Units (eg. 4) 3

Course title (max. 100 characters)

Data Mining and Business Intelligence

Short title (for enrollment/transcript - max. 30 characters) **Data Mining & Bus Intelligence**

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)

The application of data warehousing solutions to develop an integrated system of policies, applications, and network technologies designed to convert operational data into accessible business information.

Rationale for introduction of this course

New course for the Master of Science in Accounting with Cognitive Analytics

Term of initial offering (eg. Fall 2019) Summer 2019	Course delivery (eg. 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks
Frequency of offerings/year Once/year	Estimated enrollment per offering 40-50

Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)

n/a

Prerequisite and/or Corequisite n/a

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 ☐ Independent ☐ Capstone ☐ _____

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

Repeat for credit? ☐ Yes ☑ No	Total repeats allowed? 0	Repeat within a term? ☐ Yes ☑ No
Required course? ☑ Yes ☐ No	Final exam required? ☐ Yes ☑ No	Capstone course? ☐ Yes ☑ No

Combined with a undergrad course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students:

* See important definitions on the curriculum website.

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
Andrew Gemino, Peter Tingling, Nilesh Saraf
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 Programs	Lesley McKay	buscoord@sfu.ca

ACADEMIC UNIT APPROVAL

A course outline must be 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	Signature	Date
Andrew Gemino		August 23, 2018

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

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature	Date
Jeff Derksen		SEP 24 2018

ADMINISTRATIVE SECTION (for DGS office only)
Library Check: SEP 07 2018
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

BUS 840: Data Mining & Business Intelligence

Instructor:
Office Phone:
Email:

Semester: Summer 2020
LMS: canvas.sfu.ca

COURSE DESCRIPTION

Extends understanding of relational databases into data warehousing and business intelligence systems. Develops awareness of how data warehousing helps achieve business value through an integrated system of databases, data transformations and network technologies designed to convert operational data into accessible business information. This provides the foundation for introducing data mining tools and applying automated techniques for data analysis to support business decision making.

COURSE OBJECTIVES

The following are course level goals. It is expected that participants completing the course will demonstrate proficiency in the following:

- Apply querying, data cleaning and aggregation techniques to support data warehouse development.
- Understand dimensional model and fact tables underlying storage in data warehouse systems
- Understand meta data and how to populate a data dictionary
- Create queries in dimensional models and use filtering for drill-down capabilities
- Create reports using business intelligence software attached to a data warehouse.
- Contrast real time data warehousing with traditional data warehousing
- Apply data mining techniques on a data set with multiple data types

COURSE EXPECTATIONS

You can expect 8 - 10 hours of work weekly for each course you are registered in. These activities will include participating in online activities, preparing readings and cases, answering practice questions, doing library research and working on group assignment with other students. Courses may be scheduled in a compressed format where classes are held in intensive session, but expectations of consistent preparation and participation remain for the length of the course.

BOOK AND MATERIALS

1. Davenport, T. H. (2017). Competing on analytics. *Harvard Business Review*.
2. Kimball, R., & Ross, M. (2013). *The data warehouse toolkit: The definitive guide to dimensional modeling*. John Wiley & Sons.
3. Witten, I. H., Frank, E., Hall, M. A., & Pal, C. J. (2016). *Data Mining: Practical machine learning tools and techniques*. Morgan Kaufmann.

LEARNING AND ASSESSMENT

Evaluation in this course will be based on a combination of group and individual work. As in all large 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	Weekly Quizzes	15%
	Business Report Design	35%
Group	Dimensional Modeling	20%
	Data Mining for Business Value	30%
	Total	100%

SFU BEEDIE SCHOOL OF BUSINESS

Weekly Quizzes Due: Weekly, Sunday at 11:00 pm

A series of weekly multiple-choice quizzes will be provided through Canvas. Questions are drawn randomly from a question pool and provided to students in a timed format. Questions are focused on the material to be presented in the week to come and quizzes serve as a preparation for this material. Students have 30 minutes to answer 10 questions in an open book format. Students will receive feedback on their mark once the quiz closes.

Individual Business Report Design Due:

Students will work through a series of data to develop a standardized report and the queries underlying it. The goal is to develop an extraction, transformation and load process (including queries for extraction and data transformations) that can be replicated into a weekly report. Students can use spreadsheet features to clean and transform data as necessary. Students will be evaluated on the quality of the process and the quality of the resulting report.

Group Dimensional Modeling Assignment Due:

Students will work in groups of 3-4 to create a dimensional for a business area defined in the case. Students will be required to document the dimensional design with a data dictionary. Assignment requirements also include 2 examples of reports that can be easily developed from the dimensional model. Groups will be assessed on their ability to effectively model the business area along with the quality of the example reports suggested.

Group Data Mining for Business Value Due

Students will work in groups of 3-4 in a time-limited, in-class assignment to integrate their learning about dimensional modeling, reporting and data mining. Students will be given a business case with a dimensional model and will be required to develop a report, run one automated data mining process and comment on the results of the data mining process. Groups will be assessed on their ability to build effective reports and the interpret significant automated data mining procedures.

COURSE STRUCTURE

This course will consist of a blended approach with face-to-face and on-line components. Students work individually and as part of a group to complete course requirements. A mixture of case study discussions, small group exercises, case analysis, and group assignments will be utilized.

READING SCHEDULE

Readings are available electronically and can be found on Canvas and Harvard. They are labeled accordingly. Please ensure that citations are in full APA (or other popular citation style), in order to ensure that the correct version of cases and articles are obtained for your course, and that copyright law is met.

Session 1: Business Intelligence

1. Davenport, T. H. (2017). Competing on analytics. *Harvard Business Review*. Chapter 1 and 2

Session 2: Business Intelligence and Data Warehouses

1. Davenport, T. H. (2017). Competing on analytics. *Harvard Business Review*. Chapter 3 and 4
2. Kimball, R., & Ross, M. (2013). *The data warehouse toolkit: The definitive guide to dimensional modeling*. John Wiley & Sons. Chapter 1.

SFU BEEDIE SCHOOL OF BUSINESS

Session 3: Data Warehousing: Dimensional Models I

1. Kimball, R., & Ross, M. (2013). *The data warehouse toolkit: The definitive guide to dimensional modeling*. John Wiley & Sons. Chapter 2, 3 and 4.

Session 4: Data Warehousing: Dimensional Models II

1. Kimball, R., & Ross, M. (2013). *The data warehouse toolkit: The definitive guide to dimensional modeling*. John Wiley & Sons. Chapter 5, 6 and 7.

Session 5: Creating Effective Business Reports

1. Kimball, R., & Ross, M. (2013). *The data warehouse toolkit: The definitive guide to dimensional modeling*. John Wiley & Sons. Chapter 7, 8 and 9.

Session 6: Introduction to SQL in Accounting

No Reading. In class assignment. Creating Business Reports.

Session 7: Introduction to Data Mining

1. Witten, I. H., Frank, E., Hall, M. A., & Pal, C. J. (2016). Data Mining: Practical machine learning tools and techniques. Morgan Kaufmann. Chapter 1 and 2.

Session 8: Extraction, Transformation and Loading (ETL)

1. Witten, I. H., Frank, E., Hall, M. A., & Pal, C. J. (2016). Data Mining: Practical machine learning tools and techniques. Morgan Kaufmann. Chapter 3 and 4.

Session 9: Machine Learning Tools I

1. Witten, I. H., Frank, E., Hall, M. A., & Pal, C. J. (2016). Data Mining: Practical machine learning tools and techniques. Morgan Kaufmann. Chapter 5, 6 and 7.

Session 10: Machine Learning Tools II

1. Witten, I. H., Frank, E., Hall, M. A., & Pal, C. J. (2016). Data Mining: Practical machine learning tools and techniques. Morgan Kaufmann. Chapter 8, 9 and 10.

Session 11: Data Mining Group Presentations

No readings. In-class presentations.

Session 12: Data Mining Group Presentations

No readings. In-class presentations.

ACADEMIC HONESTY

Plagiarism is the unacknowledged use of other people's ideas or work. Plagiarism is often unintentional and can be avoided through careful work habits and familiarity with academic conventions. But whether intentional or unintentional, plagiarism is recognized as a serious academic offence. The university's strong stance against plagiarism reflects our shared commitment to intellectual honesty, and the original contributions of each student and faculty member validate and sustain the university as a vital centre of knowledge and research. It is your responsibility, as a student and a member of the academic community, to ensure that you have correctly acknowledged and cited all the resources you have used in writing your work.

SFU BEEDIE SCHOOL OF BUSINESS

The following examples are representative but not exhaustive of activities constituting academic dishonesty:

- Plagiarism (presenting the work of another person as your own)
- Submitting the same work more than once without prior approval
- Translating a work from one language to another without complete and proper citation.
- Cheating
- Impersonation (having someone else write your exam)
- Submitting false records or information (forged medical notes)
- Stealing or destroying the work of another student
- Unauthorized or inappropriate use of computers, cell phones, calculators and other forms of technology in course work, assignments or examinations
- Falsifying material that is subject to academic evaluation
- Any activity not specifically outlined in this document that is intended to circumvent the standards of academic honesty

You are expected to post comments, and write reports and exams in your own words. Whenever you take an idea or passage from another author, you must acknowledge it by appropriately citing the source. If you are struggling to complete an assignment, please see your instructor or the program office for additional assistance.

Ignorance of these standards will not preclude the imposition of penalties for academic dishonesty.

For more information you will find the full SFU policy on Academic Honesty (from which the above was summarized) at: http://www.sfu.ca/policies/gazette/student.html

SFU GRADUATE AND POSTDOCTORAL STUDIES

New Graduate Course Proposal

Course Subject (eg. PSYC) BUS	Number (eg. 810) 841	Units (eg. 4) 3

Course title (max. 100 characters)

Predictive Analytics for Accounting

Short title (for enrollment/transcript - max. 30 characters) **Predictive 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)

Provides an understanding of business intelligence tools beyond the univariate measures addressed in BUS 831. Multivariate modeling approaches are extended to build statistical models relating target behaviour to predictor variables.

Rationale for introduction of this course

New course for the Master of Science in Accounting with Cognitive Analytics

Term of initial offering (eg. Fall 2019) Summer 2019	Course delivery (eg. 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks
Frequency of offerings/year Once/year	Estimated enrollment per offering 40-50

Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)

n/a

Prerequisite and/or Corequisite BUS 841: Prerequisite BUS 831

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 ☐ Independent ☐ Capstone ☐ _____

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

Repeat for credit? ☐ Yes ☑ No	Total repeats allowed? 0	Repeat within a term? ☐ Yes ☑ No
Required course? ☑ Yes ☐ No	Final exam required? ☑ Yes ☐ No	Capstone course? ☐ Yes ☑ No

Combined with a undergrad course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students:

* See important definitions on the curriculum website.

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
Michael Favere-Marchesi, Jamal Nazari, Kim Trottier
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 Programs	Lesley McKay	buscoord@sfu.ca

ACADEMIC UNIT APPROVAL

A course outline must be 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	Signature	Date
Andrew Gemino		August 23, 2018

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

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature	Date
Jeff Derksen		SEP 24 2018

ADMINISTRATIVE SECTION (for DGS office only)
Library Check: SEP 07 2018
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**

BUS 841: Predictive Analytics for Accounting

Instructor:
Office Phone:
Email:

Semester: Summer 2020
LMS: canvas.sfu.ca

COURSE DESCRIPTION

Students learn to summarize data using business intelligence tools that go beyond the univariate measures addressed in BUS 831. Several multivariate predictive modeling approaches useful in accounting context will be introduced and extended. Material goes beyond traditional business intelligence questions of "what happened" and "why did it happen", towards "what is likely to happen in the future." Students will also learn to communicate results of models to an executive audience.

OBJECTIVES

The following are course level goals. It is expected that participants completing the course will demonstrate a proficiency in the following:

- Explore and understand data relevant to a business problem
- Clean and transform raw data from multiple sources
- Build predictive models of the target behaviour using statistical and machine learning techniques
- Produce evidence-based decisions, with a concrete measure of the expected improvement in dependent variables.
- Practice the art of storytelling-with-data in short business-focused presentations that emphasize the importance of clear communication, with neither formulae nor jargon.

COURSE EXPECTATIONS

You can expect 8 - 10 hours of work weekly for each course you are registered in. These activities will include participating in online activities, preparing readings and cases, answering practice questions, doing library research and working on group assignment with other students. Courses may be scheduled in a compressed format where classes are held in intensive session, but expectations of consistent preparation and participation remain for the length of the course.

BOOK AND MATERIALS

1. Putler, D. and Krider, R. (2012). Customer and Business Analytics: Applied Data Mining for Business Decision Making Using R, 1st Edition. ISBN: 978-1466503960.
2. Witten, I. H., Frank, E., Hall, M. A., & Pal, C. J. (2016). *Data Mining: Practical machine learning tools and techniques*. Morgan Kaufmann.
3. Selected readings may be provided on Canvas.

LEARNING AND ASSESSMENT

Evaluation in this course will be based on a combination of group and individual work. As in all large 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	Pre-class Quizzes	10%
	Individual Assignment 1 - Presentation	10%
	Final Exam	35%

SFU BEEDIE SCHOOL OF BUSINESS

Group	Short Module Assignments (teams of 2)	10%
	Individual Assignment 1 - Presentation	10%
	Group Assignment 2 - Presentation	25%
	Total	100%

Pre-class Individual Quizzes: 10%
Individual quizzes will be done online on Canvas before class. Quizzes will be available 24 hours before class and closed 10 minutes before class.

Assignment 1: Model Comparison, Assessment and Evaluation 10% (Due Week 6)
Individual Assignment. *Purpose*: Confirming understanding and providing feedback

Final exam: 35%
Covers all materials in the course. Purpose: Assessment

Short Module Exercises 10%
Each module will have an exercise to be turned in by the pair of students within 48 hours after the class is over.

Group Storytelling 10%:
Starting in session 4, a student group will give a short (approximately 5 minutes) presentation of the previous weeks' module. *Purpose*: Practice clear persuasive communication of technical topics to non-technical audiences.

Assignment 2: Predictive Modeling Competition 25% (Week 10)
Team Assignment. *Purpose:* Application and Feedback.

COURSE STRUCTURE

This course will consist of a blended approach with face-to-face and on-line components. Students work individually and as part of a group to complete course requirements. A mixture of case study discussions, small group exercises, case analysis, and group assignments may be utilized.

READING SCHEDULE

Week 1: Analytics Overview:	• Obstacles & methods; • Importance of Business Understanding • Frameworks: CRISP-DM & Rapid Model Development • Introduction to R	**Preparation:** • Read Text Chapters 1 and 2, and Chapter 3 pages 33-37 and 48 - 57. Skip pages 38-47.
Week 2: Describing and Massaging Data	• Measurement Scales; • Binning • Summary Statistics • Contingency Tables	**Preparation:** • Chapter 3, section 3.1 P 34-36 • Natural and Measured Scales handout (posted on Canvas)

SFU BEEDIE SCHOOL OF BUSINESS

Predictive Modeling

Week 3: Exploring and Visualizing Data	• Scatterplots • Boxplots • Line plots • Multiple Regression • Model Fit (Adj. R^2) • Indicator Variables • Log transforms for diminishing returns	**Preparation** • Chapter 4 Sections 4.1, 4.2, 4.3, 4.4:
Week 4: Modeling Individual Decisions	• Plot of Means • Logistic Regression • Model Fit (AIC) • Oversampling	**Preparation** • Chapter 5 Sections 5.1, 5.2, 5.3
Week 5: Model Assessment & Validation	• Holdout / Validation Samples • Overfitting • Lift Charts	**Preparation** • Read Chapter 6.1 and 6.2 • Work through Tutorial 6.3 • Study Model Assessment
Week 6: Machine Learning Models (No statistics!)	• Classification Trees	**Preparation** • Chapter 7 Section 7.1 p 165-172
Week 7:	• Neural Networks • Missing Values	**Preparation:** • Chapter 8 Sections 8.1, 8.2 • Missing Values Handout
Week 8: Putting it all Together	• Rapid Model Development Framework • Pros and Cons of different Models • Targeting the best prospects	**Preparation** • Chapter 9 Sections 9.1 and 9.2

Other Business Problems and Methods

Week 9 Location / Geodemographics (not in text)	• Geographical Info Systems	**Preparation:** • Read Retail Site Selection Handout • Work through QGIS Tutorial (posted)
Week 10 Decision Calculus (not in text)	• Judgmental Calibration - Modeling without data	**No Preparation**
Week 11 Cluster Analysis	• Cluster Analysis	**Preparation:** • Chapter 10 p 235-248
Week 12	In-class Presentations	

SFU BEEDIE SCHOOL OF BUSINESS

ACADEMIC HONESTY

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The following examples are representative but not exhaustive of activities constituting academic dishonesty:

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- Cheating
- Impersonation (having someone else write your exam)
- Submitting false records or information (forged medical notes)
- Stealing or destroying the work of another student
- Unauthorized or inappropriate use of computers, cell phones, calculators and other forms of technology in course work, assignments or examinations
- Falsifying material that is subject to academic evaluation
- Any activity not specifically outlined in this document that is intended to circumvent the standards of academic honesty

You are expected to post comments, and write reports and exams in your own words. Whenever you take an idea or passage from another author, you must acknowledge it by appropriately citing the source. If you are struggling to complete an assignment, please see your instructor or the program office for additional assistance.

Ignorance of these standards will not preclude the imposition of penalties for academic dishonesty.

For more information you will find the full SFU policy on Academic Honesty (from which the above was summarized) at: http://www.sfu.ca/policies/gazette/student.html

SFU GRADUATE AND POSTDOCTORAL STUDIES

New Graduate Course Proposal

Course Subject (eg. PSYC) BUS	Number (eg. 810) 842	Units (eg. 4) 3

Course title (max. 100 characters)

Advanced Analytical Auditing

Short title (for enrollment/transcript - max. 30 characters) **Advanced Analytical Auditing**

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)

The use of information technology across auditing processes through advanced data analytics techniques.

Rationale for introduction of this course

New course for the Master of Science in Accounting with Cognitive Analytics

Term of initial offering (eg. Fall 2019) Summer 2019	Course delivery (eg. 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks
Frequency of offerings/year Once/year	Estimated enrollment per offering 40-50

Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)

n/a

Prerequisite and/or Corequisite BUS 842: Prerequisite BUS 832

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 ☐ Independent ☐ Capstone ☐ _____

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

Repeat for credit? ☐ Yes ☑ No	Total repeats allowed? 0	Repeat within a term? ☐ Yes ☑ No
Required course? ☑ Yes ☐ No	Final exam required? ☑ Yes ☐ No	Capstone course? ☐ Yes ☑ No

Combined with a undergrad course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students:

* See important definitions on the curriculum website.

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
Andrew Gemino, Nilesh Saraf, Peter Tingling
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 Programs	Lesley McKay	buscoord@sfu.ca

ACADEMIC UNIT APPROVAL

A course outline must be 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	Signature	Date
Andrew Gemino		August 23, 2018

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

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature	Date
Jeff Derksen		SEP 2 4 2018

ADMINISTRATIVE SECTION (for DGS office only)
Library Check: SEP 07 2018
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

BUS 842: Advanced Analytical Auditing

Instructor:
Office Phone:
Email:

Semester: Summer 2020
LMS: canvas.sfu.ca

COURSE DESCRIPTION

Digital disruption continues to redefine what it takes to compete in the accounting business environment. As decision-making is automated, trusting the integrity of the data, algorithms, and analytic capabilities is key for future success. Students will consider the use of information technology across the end-to-end audit process. Advanced data analytics (ADA) techniques for audit processes are explored and students are provided opportunities to communicate data findings and audit recommendations to different audiences.

OBJECTIVES

The following are course level goals. It is expected that participants completing the course will demonstrate a proficiency in the following:

- Appreciation of emerging technologies for audit
- Cases of analytics use in auditing
- Advanced auditing data analytic techniques.

COURSE EXPECTATIONS

You can expect 8 - 10 hours of work weekly for each course you are registered in. These activities will include participating in online activities, preparing readings and cases, answering practice questions, doing library research and working on group assignment with other students. Courses may be scheduled in a compressed format where classes are held in intensive session, but expectations of consistent preparation and participation remain for the length of the course.

BOOK AND MATERIALS

1. Shields, G.P. (2018). CPA Canada Guide to Audit Data Analytics, Chartered Professional Accountants of Canada Publications.
2. Additional selected readings will be provided on Canvas

LEARNING AND ASSESSMENT

Evaluation in this course will be based on a combination of group and individual work. As in all large 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	Weekly Quizzes	15%
	Final Exam	35%
Group	Group Case 1 -report and presentation	25%
	Group Case 2 -report and presentation	25%
	Total	100%

SFU BEEDIE SCHOOL OF BUSINESS

Weekly Quizzes Due: Every week, Saturday at Midnight

A series of weekly multiple-choice and short answer quizzes will be provided through Canvas. Students will have about 40 minutes to answer 10 multiple-choice questions and two short answer questions. Students will receive feedback within 48 hours after finishing each quiz.

Final Exam Due:

Final exam will be based on all the materials and concepts covered in the course.

Group Case 1 Due:

Students will work in groups of 3-4 to use ADAs in performing substantive analytical procedures. Cases that students will perform the analyses on include non-predictive statistical modeling to assess revenues and regression analysis of revenues from sale. The ADA used in conducting substantive analytical procedures will be presented to the class by the groups and will form the base for group project assessment. Each of these procedures should be supported by supplemental information and analysis and sent in a professional report form to the instructor.

Group Case 2 Due:

Students will work in groups of 3-4 to use ADAs in performing test of details. Cases that students will perform the detail test on include cash receipt to sales invoice matching, match of sales invoices, shipping documents, and a master price list. The ADA used in conducting test of details will be presented to the class by the groups and will form the base for group project assessment. Each of these procedures should be supported by supplemental information and analysis and sent in a professional report form to the instructor.

COURSE STRUCTURE

This course will consist of a blended approach with face-to-face and on-line components. Students work individually and as part of a group to complete course requirements. A mixture of case study discussions, small group exercises, case analysis, and group assignments may be utilized.

READING SCHEDULE

Additional selected readings are available electronically and can be found on Canvas. Solution to select cases and exercises will also be posted to Canvas. Students are expected to read the background materials and related chapters prior to attending each module.

TENTATIVE TIMETABLE

DATE	TOPIC	CHAPTER
Week 1	**Choosing the Appropriate Audit Data Analytics (ADA):** • Using Graphics and Tables (Visualization) • Accessing and Preparing Data for Purposes of an ADA • Relevance and Reliability of Data	1
Week 2	• Documenting ADA Procedures • Requirements of Canadian Assurance Standards on ADA documentations	1,2

	Using ADAs in Performing Risk Assessment Procedures • Specific Generally Accepted Auditing Standards Relevant to Use of ADAs in Performing Risk Assessment Procedures	
Week 3	**Applying Five Basic Steps for an ADA** • Planning the ADA • Accessing and preparing the data for purposes of the ADA • Considering the relevance and reliability of the data used • Performing the ADA • Evaluating the results and concluding on whether the purpose and specific objectives of performing the ADA have been achieved.	2
Week 4	**Using ADAs in Performing Substantive Analytical Procedures** • Nature and Objectives of Substantive Analytical Procedures • Steps in Planning, Performing, and Evaluating a Substantive Analytical Procedure: Setting the expectation, Precision, Level of assurance • Plausibility and Predictability of Relevant Relationships • Level of Disaggregation of Data • Amount of Acceptable Difference of Recorded Amounts from Expected Values • Investigation of a Significant Difference	3
Week 5	**Effectiveness of Method Used to Develop the Auditor's Expectation** • Trend Analysis • Ratio Analysis • Non-Statistical Predictive Modeling • Regression Analysis • Documentation **Using ADAs in Performing Tests of Details** • Canadian Assurance Standards Relevant to the Use of ADAs in Performing Tests of Details • Nature and Extent of Substantive Procedures • Evaluation of Misstatements	3,4
Week 6	**Advanced use of Caseware IDEA Analytics tools** • IDEA data analytics • IDEA Sampling techniques • IDEA Statistical methods	Readings on Canvas
Week 7	• Using Caseware IDEA, Perform the ADA by Identification of Possible Misstatements and Actual Misstatements	4
Week 8	**Advanced use of KPMG Automated Audit Procedures** Using Automated Audit Procedures to:	Readings on Canvas

	• Detection of unusual transaction data • Preparation of analysis data by collecting data from ERP (Enterprise Resource Planning) • Statistical Evaluation of audit risk by using financial and non-financial data	
Week 9	**Advanced use of Electronic Account Analysis Tool (eAAT)** Using eAAT to: • Detection of unusual transaction data • Preparation of analysis data by collecting data from ERP (Enterprise Resource Planning) • Statistical Evaluation of audit risk by using financial and non-financial data	Readings on Canvas
Week 10	**Group Case 1 Presentations**	
Week 11	**Group Case 2 Presentations**	
Week 12	**FINAL EXAM**	

ACADEMIC HONESTY

Plagiarism is the unacknowledged use of other people's ideas or work. Plagiarism is often unintentional and can be avoided through careful work habits and familiarity with academic conventions. But whether intentional or unintentional, plagiarism is recognized as a serious academic offence. The university's strong stance against plagiarism reflects our shared commitment to intellectual honesty, and the original contributions of each student and faculty member validate and sustain the university as a vital centre of knowledge and research. It is your responsibility, as a student and a member of the academic community, to ensure that you have correctly acknowledged and cited all the resources you have used in writing your work.

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- Impersonation (having someone else write your exam)
- Submitting false records or information (forged medical notes)
- Stealing or destroying the work of another student
- Unauthorized or inappropriate use of computers, cell phones, calculators and other forms of technology in course work, assignments or examinations
- Falsifying material that is subject to academic evaluation
- Any activity not specifically outlined in this document that is intended to circumvent the standards of academic honesty

You are expected to post comments, and write reports and exams in your own words. Whenever you take an idea or passage from another author, you must acknowledge it by appropriately citing the source. If you are struggling to complete an assignment, please see your instructor or the program office for additional assistance. Ignorance of these standards will not preclude the imposition of penalties for academic dishonesty. For more information you will find the full SFU policy on Academic Honesty (from which the above was summarized) at: http://www.sfu.ca/policies/gazette/student.html

SFU GRADUATE AND POSTDOCTORAL STUDIES

New Graduate Course Proposal

Course Subject (eg. PSYC) BUS	Number (eg. 810) 844	Units (eg. 4) 3

Course title (max. 100 characters)

Fraudulent Financial Reporting

Short title (for enrollment/transcript - max. 30 characters) **Fraudulent Fin Reporting**

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)

Provides an understanding of the potential data analytics has in finding fraudulent financial reporting.

Rationale for introduction of this course

New course for the Master of Science in Accounting with Cognitive Analytics

Term of initial offering (eg. Fall 2019) Summer 2019	Course delivery (eg. 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks
Frequency of offerings/year Once/year	Estimated enrollment per offering 40-50

Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)

n/a

Prerequisite and/or Corequisite n/a

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 ☐ Independent ☐ Capstone ☐ _____

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

Repeat for credit? ☐ Yes ☑ No	Total repeats allowed? 0	Repeat within a term? ☐ Yes ☑ No
Required course? ☑ Yes ☐ No	Final exam required? ☑ Yes ☐ No	Capstone course? ☐ Yes ☑ No

Combined with a undergrad course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students:

* See important definitions on the curriculum website.

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
Michael Favere-Marchesi, Jamal Nazari, Kim Trottier
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 Programs	Lesley McKay	buscoord@sfu.ca

ACADEMIC UNIT APPROVAL

A course outline must be 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	Signature	Date
Andrew Gemino		August 23, 2018

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

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature	Date
Jeff Derksen		SEP 2 4 2018

ADMINISTRATIVE SECTION (for DGS office only)
Library Check: SEP 0 7 2018
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

BUS 844: Fraudulent Financial Reporting

Instructor:
Office Phone:
Email:

Semester: Summer 2020
LMS: canvas.sfu.ca

COURSE DESCRIPTION

Data and Analytics (D&A) in identifying anomalous and suspicious activity and combating it is critical as tech-savvy fraudsters increasingly use technology to perpetrate frauds. If a detection program is going to succeed, it must have access to reliable data. Students will explore the potential of D&A in finding fraudulent financial reporting.

OBJECTIVES

The following are course level goals. It is expected that participants completing the course will demonstrate a proficiency in the following:

- Analyze large populations of financial and non-financial data for fraudulent activity
- Analyze information for fraudulent activity; Document audit procedures
- Develop techniques for deterring and detecting fraudulent reporting.
- Automation of fraud detection process

COURSE EXPECTATIONS

You can expect 8 - 10 hours of work weekly for each course you are registered in. These activities will include participating in online activities, preparing readings and cases, answering practice questions, doing library research and working on group assignment with other students. Courses may be scheduled in a compressed format where classes are held in intensive session, but expectations of consistent preparation and participation remain for the length of the course

BOOK AND MATERIALS

1. Nigrini M.J. (2011). Forensic Analytics: Methods and Techniques for Forensic Accounting Investigations, Wiley.
2. Additional selected readings will be provided on Canvas

LEARNING AND ASSESSMENT

Evaluation in this course will be based on a combination of group and individual work. As in all large 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	Weekly Quizzes	15%
	Final Exam	35%
Group	Weekly Group Assignments	30%
	Group Project	20%
	Total	100%

Weekly Quizzes

Due: Every week, Saturday at Midnight

A series of weekly multiple-choice and quizzes will be provided through Canvas. Students will have about 30 minutes to answer 10 multiple-choice questions. Students will receive feedback within 48 hours after finishing each quiz.

SFU BEEDIE SCHOOL OF BUSINESS

Final Exam Due:

Final exam will be based on all the materials and concepts covered in the course.

Group Case Due:

Students will work in groups of 3-4 to on application of one of the forensic analytics techniques learned in class to a practical senior. Students will be provided the option to chose the case that they would be working on but this has to be with prior approval of the instructor. The results of analysis should be clearly written up and communicated professionally. Students will be evaluated based on the quality of analysis and communication of the results.

Weekly Group Assignment Due:

Students will work in groups of 3-4 on series of weekly assignments. These assignments are based on the topics covered in the course and require application to practical cases. Students will be assessed based on the quality of the responses on each of these assignments. Feedback will be provided within a week after finishing each assignment.

COURSE STRUCTURE

This course will consist of a blended approach with face-to-face and on-line components. Students work individually and as part of a group to complete course requirements. A mixture of case study discussions, small group exercises, case analysis, and group assignments may be utilized.

READING SCHEDULE

Additional selected readings are available electronically and can be found on Canvas. Solution to select cases and exercises will also be posted to Canvas. Students are expected to read the background materials and related chapters prior to attending each module.

TENTATIVE TIMETABLE

DATE	TOPIC	CHAPTER
Week 1	**Using Access in Forensic Investigations** • A Review of Access Tables • Importing Data into Access • A Review of Access Queries • Converting Excel Data into a Usable Access Format **Using Excel in Forensic Investigations** • Pitfalls in Using Excel • Importing Data into Excel • Reporting Forensic Analytics Results • Protecting Excel Spreadsheet	1 & 2
Week 2	**Using PowerPoint in Forensic Presentations** • Overview of Forensic Presentations • Planning the Presentation • Color Schemes for Forensic Presentations • Problems with Forensic Reports	3 & 4

	High-Level Data Overview Tests • The Forensic Data Profile • The Forensic Data Histogram • The Periodic Graph • Preparing the Data Profile Using Access • Preparing the Data Profile Using Excel • Calculating the Inputs for the Periodic Graph in Access	
Week 3	**Benford's Law: The Basics** • An Overview of Benford's Law • From Theory to Application in 60 Years • Which Data Sets Should Conform to Benford's Law? • The Effect of Data Set Size • The Basic Digit Tests • Running the First-Two Digits Test in Access	5
Week 4	**Benford's Law: Assessing Conformity** • One Digit at a Time: The Z-Statistic • The Chi-Square and Kolmogorov-Smirnoff Tests • The Mean Absolute Deviation (MAD) Test • Tests Based on the Logarithmic Basis of Benford's Law • Creating a Perfect Synthetic Benford Set • The Mantissa Arc Test **Benford's Law: The Second-Order and Summation Tests** • A Description of the Second-Order Test	6,7
Week 5	**Benford's Law: The Number Duplication and Last-Two Digits Tests** • The Number Duplication Test • Running the Number Duplication Test in Access • Running the Number Duplication Test in Excel • The Last-Two Digits Test **Testing the Internal Diagnostics of Current Period and Prior Period Data** • A Review of Descriptive Statistics • An Analysis of Alumni Gifts • An Analysis of Fraudulent Data	8,9
Week 6	**Identifying Fraud Using the Largest Subsets and Largest Growth Tests** • Findings from the Largest Subsets Test • Running the Largest Subsets Test in Access • Running the Largest Growth Test in Access • Running the Largest Subsets Test in Excel • Running the Largest Growth Test in Excel	10
Week 7	**Identifying Anomalies Using the Relative Size Factor Test** • Relative Size Factor Test Findings • Running the RSF Test	11

	• Running the Relative Size Factor Test in Access • Running the Relative Size Factor Test in Excel	
Week 8	**Identifying Fraud Using Abnormal Duplications within Subsets** • The Same-Same-Same Test • The Same-Same-Different Test • The Subset Number Duplication Test • Running the Same-Same-Same Test in Access • Running the Same-Same-Different Test in Access • Running the Subset Number Duplication Test in Access • Running the Same-Same-Same Test in Excel • Running the Same-Same-Different Test in Excel • Running the Subset Number Duplication Test in Excel	12
Week 9	**Identifying Fraud Using Correlation** • The Concept of Correlation • Correlation Calculations • Using Correlation to Detect Fraudulent Sales Numbers • Using Correlation to Detect Electricity Theft • Using Correlation to Detect Irregularities in Election Results • Detecting Irregularities in Pollution Statistics • Calculating Correlations in Access • Calculating the Correlations in Excel	13
Week 10	**Identifying Fraud Using Time-Series Analysis** • Time-Series Methods • An Application Using Heating Oil Sales • An Application Using Stock Market Data • An Application Using Construction Data • An Analysis of Streamflow Data • Running Time-Series Analysis in Excel • Calculating the Seasonal Factors • Running a Linear Regression • Fitting a Curve to the Historical Data • Calculating the Forecasts	14
Week 11	**The Detection of Financial Statement Fraud** • The Digits of Financial Statement Numbers • Detecting Biases in Accounting Numbers • An Analysis of Enron's Reported Numbers • An Analysis of Biased Reimbursement Numbers • Detecting Manipulations in Monthly Subsidiary Reports • Predictor Weightings	17
Week 12	**FINAL EXAM**	

SFU BEEDIE SCHOOL OF BUSINESS

ACADEMIC HONESTY

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- Cheating
- Impersonation (having someone else write your exam)
- Submitting false records or information (forged medical notes)
- Stealing or destroying the work of another student
- Unauthorized or inappropriate use of computers, cell phones, calculators and other forms of technology in course work, assignments or examinations
- Falsifying material that is subject to academic evaluation
- Any activity not specifically outlined in this document that is intended to circumvent the standards of academic honesty

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SFU GRADUATE AND POSTDOCTORAL STUDIES

New Graduate Course Proposal

Course Subject (eg. PSYC) BUS	Number (eg. 810) 845	Units (eg. 4) 3

Course title (max. 100 characters)

Advanced Applied Project I

Short title (for enrollment/transcript - max. 30 characters) **Advanced Applied Project I**

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)

A team-based strategic business analysis and extended essay supervised by a Simon Fraser University faculty member with support from a senior industry partner. This is the first part of a two part course. Graded on a satisfactory/unsatisfactory basis.

Rationale for introduction of this course

New course for the Master of Science in Accounting with Cognitive Analytics

Term of initial offering (eg. Fall 2019) Summer 2019	Course delivery (eg. 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks
Frequency of offerings/year Once/year	Estimated enrollment per offering 40-50

Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)

n/a

Prerequisite and/or Corequisite n/a

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 ☐ Independent ☐ Capstone ☐ _____

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

Repeat for credit? ☐ Yes ☑ No	Total repeats allowed? 0	Repeat within a term? ☐ Yes ☑ No
Required course? ☑ Yes ☐ No	Final exam required? ☐ Yes ☑ No	Capstone course? ☐ Yes ☑ No

Combined with a undergrad course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students:

* See important definitions on the curriculum website.

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
Andrew Gemino, Michael Johnson, Jamal Nazari, Peter Tingling
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 Programs	Lesley McKay	buscoord@sfu.ca

ACADEMIC UNIT APPROVAL

A course outline must be 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	Signature	Date
Andrew Gemino		August 23, 2018

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

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature	Date
Jeff Derksen		SEP 24 2018

ADMINISTRATIVE SECTION (for DGS office only)
Library Check: SEP 07 2018
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 | MASTER OF BUSINESS ADMINISTRATION

BUS 845: Advanced Applied Project I

Instructor:
Office Phone:
Email:

Semester: Fall 2020
LMS: canvas.sfu.ca

COURSE DESCRIPTION

Integrates the frameworks and content of the MSc in Accounting and Data Analytics courses. This is the first part of a two-part course.

The applied project capstone course is an opportunity for students to make use of knowledge related to major topics of courses throughout the program to address a specific, practical issue, problem or opportunity. Students will undertake a strategic business analysis and write an extended essay jointly supervised by a Simon Fraser University faculty member. A faculty member will negotiate the purpose, content and deliverables of each project with the students and the sponsoring organization. Common topics include a broad strategic analysis, an in-depth analysis of a specific business problem, a business plan, or a detailed functional strategy.

OBJECTIVES

The applied project provides students with an opportunity to comprehensively integrate the various subjects studied during the MSc program. Collaborative learning is facilitated through a final presentation to the industry partner organization. Success in this course is predicated on:

- To consolidate knowledge gained over the two-year MSc to develop well-reasoned solutions to the problems currently faced by the industry partner.
- Delivering a clear, compelling, and well-rehearsed presentation.
- Delivering a detailed, well-written report.
- Working effectively in a small team.
- Demonstrating professionalism in all aspects of your relationship with the firm and its management.
- Evaluating the performance of your peers in a fair and objective fashion.
- At the end of the course, you will prepare a concise self-reflection summarizing your key learning outcomes.

COURSE EXPECTATIONS

During the semester students can expect at least 10 hours of out-of-class work weekly for each course. These out-of-class activities may include, participating in online activities, preparing readings and cases, answering practice questions, doing library research and reviewing sources, conducting interviews, and project planning.

Courses may be scheduled in a compressed format where classes are held in intensive session, but expectations of consistent preparation and participation remain for the length of the semester.

BOOK AND MATERIALS

There are no required readings for this course. Provided on Canvas:

1. Detailed information and schedule of deadlines
2. Selected readings and information about resources
3. Submission requirements information

4. Examples of various project types

LEARNING AND ASSESSMENT

Each project is assessed on a satisfactory/unsatisfactory basis and will be approved only after it meets a minimum quality threshold determined by the course instructor. Students will be expected to revise their work until that threshold is met. The quality threshold is a function of content, including analytical processes and conclusions, and University standards for written communications.

Individual	Self-report	20 %
	Peer review	20 %
	Participation	10 %
Group	Project Proposal and Presentation	20%
	Project Plan and Presentation	30%
	Total	100%

Self-report Final Report Due:

A final self-report will be collected for each team member. This reflective self-report should consider the experiences and knowledge gained in completing the project proposal and project plan. Students are asked to demonstrate how they have improved their ability to team and participate in project-based work. Students are asked to integrate readings and other experiences and include specific examples whenever possible. Students will be evaluated on the breadth and depth of the narrative and the quality of the writing provided in the document.

Group Project Proposal and Presentation Due:

Students will work in groups to create a proposal for their final project to be completed in BUS 846: Advanced Applied Project II. During the face-to-face session, students will make a time restricted, business presentation of this proposal in their groups. The proposal will follow a project management format including introduction, work breakdown structure proposed schedule and budget along with risk analysis. Projects will be assessed on the quality of the proposal and the ability to effectively communicate project details and create a compelling proposal for further development.

Group Project Plan and Presentation Due

The Group Project Plan builds on the Group Project Proposal document. The plan should include all elements of the proposal plus a detailed schedule and work breakdown structure for BUS 846: Advanced Applied Project II. In the final sessions, students will make a time restricted, business presentation in groups of 3-4. This presentation should integrate their learning about traditional and agile project management. The presentation should be formatted for a business executive audience. Projects will be assessed on their ability to effectively visualize and communicate the project plan and on the quality of the project plan emerging from their team work.

COURSE STRUCTURE

The majority of work will be online and/or independently, in collaboration with project supervisors. A Thursday-Sunday face-to-face session will allow for final presentations in-person.

SFU BEEDIE SCHOOL OF BUSINESS | MASTER OF BUSINESS ADMINISTRATION

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SFU GRADUATE AND POSTDOCTORAL STUDIES

New Graduate Course Proposal

Course Subject (eg. PSYC) BUS	Number (eg. 810) 846	Units (eg. 4) 3

Course title (max. 100 characters)
Advanced Applied Project II

Short title (for enrollment/transcript - max. 30 characters) Advanced Applied Project II

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)

A team-based strategic business analysis and extended essay supervised by a Simon Fraser University faculty member with support from a senior industry partner. The final project will be examined by two readers. This is the second part of a two part course. Graded on a satisfactory/unsatisfactory basis.

Rationale for introduction of this course
New course for the Master of Science in Accounting with Cognitive Analytics

Term of initial offering (eg. Fall 2019) Summer 2019	Course delivery (eg. 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks
Frequency of offerings/year Once/year	Estimated enrollment per offering 40-50

Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)
n/a

Prerequisite and/or Corequisite BUS 846: Prerequisite BUS 845

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 ☐ Independent ☑ Capstone ☐ _____

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

Repeat for credit? ☐ Yes ☑ No
Total repeats allowed? 0
Repeat within a term? ☐ Yes ☑ No

Required course? ☑ Yes ☐ No
Final exam required? ☐ Yes ☑ No
Capstone course? ☑ Yes ☐ No

Combined with a undergrad course? ☐ Yes ☑ No If yes, identify which undergraduate course and the additional course requirements for graduate students:

* See important definitions on the curriculum website.

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
Andrew Gemino, Michael Johnson, Jamal Nazari, Peter Tingling
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 Programs	Lesley McKay	buscoord@sfu.ca

ACADEMIC UNIT APPROVAL

A course outline must be 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	Signature	Date
Andrew Gemino		August 23, 2018

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

SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature	Date
Jeff Derksen		SEP 24 2018

ADMINISTRATIVE SECTION (for DGS office only)
Library Check: SEP 07 2018
Course Attribute: GCAP
Course Attribute Value: Project
Instruction Mode:
Attendance Type:

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

SFU BEEDIE SCHOOL OF BUSINESS | MASTER OF BUSINESS ADMINISTRATION

BUS 846: Advanced Applied Project II

Instructor:
Office Phone:
Email:

Semester: Spring 2021
LMS: canvas.sfu.ca

COURSE DESCRIPTION

Integrate the frameworks and content of the MSc in Accounting and Data Analytics courses. This is the second part of a two-part course to provide students with adequate time to integrate the learning from the entire program with the needs of their industry.

The applied project capstone course is an opportunity for students to make use of knowledge related to major topics of courses throughout the program to address a specific, practical issue, problem or opportunity.
Students will undertake a strategic business analysis and write an extended essay. A faculty member will negotiate the purpose, content and deliverables of each project with the students and the sponsoring organization. Common topics include a broad strategic analysis, an in-depth analysis of a specific business problem, a business plan, or a detailed functional strategy.

OBJECTIVES

The applied project provides students with an opportunity to comprehensively integrate the various subjects studied during the MSc program. Collaborative learning is facilitated through a final presentation to the industry partner organization. Success in this course is predicated on:

- To consolidate knowledge gained over the two-year MSc to develop well-reasoned solutions to the problems currently faced by the industry partner.
- Delivering a clear, compelling, and well-rehearsed presentation.
- Delivering a detailed, well-written report.
- Working effectively in a small team.
- Demonstrating professionalism in all aspects of your relationship with the firm and its management.
- Evaluating the performance of your peers in a fair and objective fashion.
- At the end of the course, you will prepare a concise self-reflection summarizing your key learning outcomes.

COURSE EXPECTATIONS

During the semester students can expect at least 10 hours of out-of-class work weekly for each course. These out-of-class activities may include, participating in online activities, preparing readings and cases, answering practice questions, doing library research and reviewing sources, conducting interviews, and project planning.

Courses may be scheduled in a compressed format where classes are held in intensive session, but expectations of consistent preparation and participation remain for the length of the semester.

BOOK AND MATERIALS

There are no required readings for this course. Provided on Canvas:

1. Detailed information and schedule of deadlines
2. Selected readings and information about resources

3. Submission requirements information
4. Examples of various project types

LEARNING AND ASSESSMENT

Each project is assessed on a satisfactory/unsatisfactory basis and will be approved only after it meets a minimum quality threshold determined by the course instructor. Students will be expected to revise their work until that threshold is met. The quality threshold is a function of content, including analytical processes and conclusions, and University standards for written communications.

Individual	Self-reflection	20 %
	Peer review	20 %
	Participation	10 %
Group	Team Presentation	30 %
	Team Report	20 %
	Total	100 %

Group Project Plan Previously developed in Summer 2019 in BUS 845

Students will work in groups to operationalize the applied project proposal and plan created in BUS 845: Advanced Applied Project I. A project management format including introduction, work breakdown structure, proposed schedule, and budget along with risk analysis will be used. The plan should include all elements of the proposal plus a detailed schedule and work breakdown structure for the term.

Group Project Presentation Due:

In the final face-to-face session, teams will make a business presentation to industry partner executives. This presentation should integrate their learning across MSc courses. The presentation should be formatted for a business executive audience. Groups will be assessed on their ability to effectively visualize and communicate the project plan and on the quality of the project that emerges from their team work.

Team Report Due:

Management requires you to deliver a report to accompany your presentation. In it, you should include detailed charts, projections, figures, and analysis, etc., that would be inappropriate to include in your presentation, but which would be necessary to develop a complete picture of your proposed solution. You should also include a copy of your slide deck with your report.

Self-reflective Essay Due:

An individual paper (5 pages – 1200 words max) reflecting on your learnings throughout the MSc program. Some considerations are as follows:

- What did you learn from the team-based applied project?
- What did you learn about managing organizations?
- What experiences did you find most interesting/informative? Why?
- Any impact on future career moves?

You are strongly encouraged to do additional research, as well as integrate relevant material from other MSc courses.

COURSE STRUCTURE

The majority of team work will be online and/or independently, in collaboration with faculty supervisors and the industry partner. A Thursday-Sunday face-to-face session will allow for final presentations in-person.

ACADEMIC HONESTY

Plagiarism is the unacknowledged use of other people's ideas or work. Plagiarism is often unintentional and can be avoided through careful work habits and familiarity with academic conventions. But whether intentional or unintentional, plagiarism is recognized as a serious academic offence. The university's strong stance against plagiarism reflects our shared commitment to intellectual honesty, and the original contributions of each student and faculty member validate and sustain the university as a vital centre of knowledge and research. It is your responsibility, as a student and a member of the academic community, to ensure that you have correctly acknowledged and cited all the resources you have used in writing your work.

The following examples are representative but not exhaustive of activities constituting academic dishonesty:

- Plagiarism (presenting the work of another person as your own)
- Submitting the same work more than once without prior approval
- Translating a work from one language to another without complete and proper citation.
- Cheating
- Impersonation (having someone else write your exam)
- Submitting false records or information (forged medical notes)
- Stealing or destroying the work of another student
- Unauthorized or inappropriate use of computers, cell phones, calculators and other forms of technology in course work, assignments or examinations
- Falsifying material that is subject to academic evaluation
- Any activity not specifically outlined in this document that is intended to circumvent the standards of academic honesty

You are expected to post comments, and write reports and exams in your own words. Whenever you take an idea or passage from another author, you must acknowledge it by appropriately citing the source. If you are struggling to complete an assignment, please see your instructor or the program office for additional assistance.

Ignorance of these standards will not preclude the imposition of penalties for academic dishonesty.

For more information you will find the full SFU policy on Academic Honesty (from which the above was summarized) at: http://www.sfu.ca/policies/gazette/student.html

August 29, 2018

Dr. Andrew Gemino
Associate Dean, Graduate Programs
Beedie School of Business
500 Granville Street
Vancouver, BC
Canada, V6C W6

Dear Dr. Gemino,

Re: New Program Proposal for Certificate and Masters of Science Program focused on data & analytics and technology skills

This letter communicates KPMG's support for the creation of both a Certificate and a Masters of Science Program to provide technology and data and analytics (D&A) education for KPMG employees (program name to be determined). The proposed graduate-level education programs would fill an existing skills gap for KPMG employees.

Institutions and their audit committees are increasingly concerned with the impacts of technology and D&A on the audit. KPMG is mobilizing to provide the D&A knowledge its people need to bring innovation to the audit to advance audit quality. In developing educational programs to support the development of D&A skills, KPMG will be preparing its professionals to embrace the changes facing the profession and develop the skills they need to play a vital role in helping client organizations create value.

Developing internal D&A programs to more widely educate KPMG professionals will require significant resources. Given the rapid pace of industry change, and the short supply of D&A expertise world-wide, KPMG Canada could reduce its timeframe and resource use while maintaining high quality outcomes by utilizing an academic partner to deliver professional D&A programming within KPMG.

In forming an educational partnership with SFU Beedie, we are excited to work with an institution that has demonstrated strength in D&A programming, a successful history of innovative programming, as well as experience in working with corporations to provide custom and online programming.

We look forward to news about the program being implemented and to providing this opportunity to our people. If you have any questions, please contact the undersigned.

Yours sincerely,

Kristen Carscallen
Canadian Managing Partner, Audit

Andrew Gemino

Biography

Dr. Andrew Gemino is an award-winning teacher who has twice received the Canada Trust Distinguished Teacher award from the Beedie School of Business and also received two teaching awards during his years at the University of British Columbia. Andrew's academic research focuses on information technology project management, business systems analysis and the design of technology-mediated collaborative environments that includes examining how corporate teams can best collaborate using technologies such as instant messaging. Andrew holds a National Sciences and Research Council of Canada (NSERC) grant to study the effective communication of information system requirements. He is also the co-founder of a software company that develops commercial software for professional sports teams in the NHL and NBA, as well as automated employee scheduling for sports and entertainment companies. Andrew also provides his expertise to the Surgeon Information System Working Group for the Provincial Surgical Oncology Council which is affiliated with the BC Cancer Agency. An accomplished bass and piano player, Andrew played for many years in a local rock and roll band, a gig he says was "more than fun".

https://beedie.sfu.ca/profiles/AndrewGemino

Nilesh Saraf

Biography

Professor Saraf is currently on sabbatical at the Department of Business Economics, Erasmus University, Rotterdam, Netherlands

Professor Saraf focuses his research on the diffusion of enterprise information technology and its role in creating business value. He also conducts research on open source software development, strategic behavior of IT product and service vendors and on the emergence of technology standards.

Professor Saraf's research has appeared in top journals namely, MIS Quarterly and Information Systems Research. His research has won competitive awards including the Emerald Management Reviews Citations of Excellence Awards for 2011 & 2014, and the runner-up award for the Best Doctoral Dissertation competition (ACM-SIGMIS) in 2004. He

has also won competitive external grants from the Social Sciences and Humanities Research Council of Canada. His current academic service roles include the following:

- Associate Editor for Management Information Systems Quarterly (2018-) (click)
- Editorial board of IEEE Transactions on Engineering Management
- Academic Director, Business Technology Management (BTM) Certificate Program

Professor Saraf completed his Ph.D. in Business Administration from the Marshall School of Business, University of Southern California, Los Angeles. He has an undergraduate degree in Electronics Engineering from M.S. University, India, and an MBA from the Indian Institute of Management. He is married and has two children.

https://beedie.sfu.ca/profiles/nileshsaraf

Peter Tingling

Biography

Peter joined the Beedie School of Business at SFU from the Richard Ivey School of Business at the University of Western Ontario where his thesis examined organizational decision-making. Peter has had a long association with higher education and has taught at several business schools. Prior to academia, Peter had more than two decades of industrial experience working in a number of senior line and staff positions as well as consulting to a diverse range of Fortune 500, government, and start-up organizations across North America.

The University, says Peter, meets several of his life goals, allows him to make a greater contribution to society and offers new challenges. "Many industry practitioners are preoccupied with 'what' rather than the more useful 'why' and how' of theory," he says. "These are my interests."

Peter has always considered himself a 'closet academic' with a curious passion for eclectic reading. Some of his favourite authors include Daniel Kahneman (Thinking Fast and Slow), James Gleick (Genius: The biography of Richard Feynman), Peter Bernstein (Against the Gods: The Remarkable Story of Risk), David Halberstam (The Coldest Winter), Margaret MacMillan (Paris 1919, Six Months that Changed the World) and Neil Postman (*Amusing Ourselves to Death: Public Discourse in the Age of Show Business).*

Peter is a member of the Senate Commitee on University Priorities (SCUP), the Senate Commitee on University Honours (SCUH), the Electoral Standing Commitee (ESC), Calendar Committee (CC (Chair)) and the Senate Commitee on Agenda and Rules (SCAR). He serves as Vice-Chair of the Senate and as Associate Dean Undergraduate Programs he serves on a

number of Beedie committees.

Outside of the University, Peter is the president and CEO of Octothorpe Software Corporation, a decision sciences company.

https://beedie.sfu.ca/profiles/PeterTingling

Michael Favere-Marchesi

Biography

After several years in public and private accounting practice, Dr. Michael Favere-Marchesi started an academic career to fulfill his love for research and teaching. Today, as an associate professor of accounting and auditing, his public accounting and industry experiences enhance his lectures in auditing and managerial accounting. Prior to joining the Beedie School of Business, Dr. Favere-Marchesi taught at the Monterey Institute of International Studies in California, the National Institute of Development Administration (NIDA) in Thailand, and the University of Southern California. His research interests include audit judgment and decision-making, audit quality, fraud and international accounting. Dr. Favere-Marchesi earned his undergraduate and graduate degrees in the U.S. and spent several years in Thailand as director of NIDA'S Global MBA program in Bangkok. He speaks French, Spanish and conversational Thai. He served for several years as Chair of the international activities committee for SFU Business. This position included arranging a quality portfolio of university exchange arrangements between SFU Business and leading business schools around the world. Dr. Favere-Marchesi is currently a member of the University Senate and serves on the Senate's Committee on International Activities and the Senate's Committee on Disciplinary Appeal. Externally, Dr. Favere-Marchesi serves as the President-Elect of the Canadian Academic Accounting Association, and served as a member of the Board of Examiners of the American Institute of Certified Public Accountants and the Chair of its International Uniform CPA Qualification Examination Committee. Dr. Favere-Marchesi is currently a reviewer for *Auditing, Behavioral Research in Accounting, Accounting Perspectives,* and various accounting conferences.

https://beedie.sfu.ca/profiles/MichaelFavere-Marchesi

Jamal A. Nazari

Biography

Dr. Jamal Nazari came to Vancouver from Alberta. He completed his Ph.D. in accounting at the University of Calgary. He has taught various financial and management accounting courses at the undergraduate and graduate levels at Simon Fraser University, Mount Royal University, University of Calgary, and Sharif University. Jamal holds the designations of Chartered Professional Accountant, Certified General Accountant, and Certified Management Accountant. He has facilitated courses and programs for CMA and CPA Canada. He is currently serving on the Sustainability Advisory Board of the CPA Canada. His past industry experience includes holding the position of CFO for an investing and a trading company in the automotive industry. Jamal's research interests include corporate social responsibility, sustainability reporting, and intellectual capital. He has presented his research at many recognized conferences. His published work appears in outlets such as Journal of Business Ethics, Journal of Management Accounting Research, Journal of Cleaner Production, Journal of Intellectual Capital, and Methodological Issues in Accounting Research.

https://beedie.sfu.ca/profiles/JamalA.Nazari

Kim Trottier

Biography

Profesor Trottier is an Associate Professor of Accounting at the Beedie School of Business. She holds a Masters degree and PhD in Accounting and Economics from the *University of British Columbia*, and a BCom from *l'Université d'Ottawa*. Her PhD covers archival research as well as mathematical modeling and econometrics. Her research spans several areas of the literature such as valuation models, event study methodology, experiments, behavioural studies, classification classification models, and topical issues in the banking and pharmaceutical industry. Her current focus is on forensics, analytics, big data, and machine learning. Dr. Trottier's teaching experience ranges from theoretical to applied, across all levels of education from undergraduate to PhD students and Executive MBAs. With years spent in professional practice as a Chartered Accountant, Dr. Trottier brings real-world experience to her teaching and research, applying insight from her work as a financial analyst, consultant, manager, corporate controller, and external auditor in corporations ranging in size from $500 million to $270 billion in assets. She holds board positions at the *Canadian Academic Accounting Associationand* and at *460 MIC.*

https://beedie.sfu.ca/profiles/KimTrottier

Payman Jula

Biography

Payman Jula is an Associate Professor at Beedie School of Business, SFU, where he teaches courses related to operations management, and decision making under uncertainty. Payman has a PhD in Industrial Engineering and Operations Research from University of California at Berkeley. His research interests are in transportation and logistics, and applications of operations management in the manufacturing and service (particularly healthcare delivery) industries. Payman has studied the economics of Asia - North America supply chains. He has worked with many international high tech companies such as Samsung Semiconductor, Cypress Semiconductor, Micron Technology, and IMFlash Technologies on issues related to cycle time reduction, production planning, scheduling, and supply chain management.

Payman enjoys Vancouver ski hills in winter and soccer fields in summer.

https://beedie.sfu.ca/profiles/paymanjula

Michael Johnson

Biography

Michael Johnson is a Lecturer at the Beedie School of Business at Simon Fraser University. He is passionate about teaching statistics, quantitative methods and operations management courses and is the recipient of the 2011 Canada Trust Excellence in Teaching Award. Michael spent 10 years teaching in the Operations Management program at BCIT prior to joining the Beedie School of Business. Prior to carrying out his PhD, Michael worked for several years as an engineer improving productivity and operational work flows in high-tech, automotive and process related industries. He has also worked as a consultant on a number of industry and research related projects related to operations research and management science.

https://beedie.sfu.ca/profiles/MichaelJohnson