Board of Governors
Meeting Overview

TUESDAY, APRIL 30, 2019
S105B, Okanagan College Kelowna Campus

REGULAR MEETING SCHEDULE:

2:00pm	Open Session
2:35p.m	In Camera Session

ATTENDEES:

Appointed Board Members:

- Chris Derickson, Chair
- Gloria Morgan, Vice Chair
- Charity Gerbrandt
- Bob McGowan
- Shelley Cook
- Juliette Cunningham
- Tina Lee
- Dave Porteous

Elected Board Members:

- Blake Edwards
- Devin Rubadeau
- Shakti Singh
- Raghav Mahajan

Ex-Officio Board Members:

- Jim Hamilton, President
- Chris Newitt, Chair - Education Council
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Other Attendees:

- Curtis Morcom, Vice President, Employee & Corporate Services
- Andrew Hay, Vice President, Education
- Allan Coyle, Interim VP, Student Services and Director, Public Affairs
- Linda Le Gallee, Board Secretary

FUTURE MEETING DATES:

- Committees (Finance, HR, Governance, PRC and Executive) – May 14, 2019
- Board Regular Meeting – May 29, 2019 (Wednesday) in Kelowna

Board of Governors

Open Session Meeting Agenda

Tuesday, April 30, 2019
2:00 pm.
S103B, Okanagan College Kelowna Campus

We respectfully acknowledge that we are meeting on the unceded traditional lands of the indigenous people who inhabited and used the lands since time immemorial.

		Related Pages	*Time*
1.	**APPROVAL OF AGENDA** Recommended Motion: ***"BE IT RESOLVED THAT the April 30, 2019, Okanagan College Board of Governors Open Session meeting agenda is approved".***		2:00pm
2.	**DECLARATION OF CONFLICT**		
3.	**NEW BUSINESS/RESOLUTIONS** 3.1.1 Education Council Program Approval Motion: ***"BE IT RESOLVED THAT the Okanagan College Board of Governors approves the new program Post-Baccalaureate Diploma in Marketing and Data Analytics as recommended by Education Council and as presented."***	3-6	2:05pm
4.	**VERBAL REPORTS** 4.1 Board Chair Report 4.2 President's Report		2:20pm .
5.	**INFORMATION**		
6.	**TOPICS FOR NEXT MEETING**		
7.	**OTHER BUSINESS**		
8.	**FOR THE GOOD OF THE BOARD**		
9.	**ADJOURNMENT**		2:30pm

Date of the next regular Board meeting: May 29, 2019 (Wednesday) - Kelowna Campus

Education Council – Report to the Board

April 30, 2019

Post-Baccalaureate Diploma in Marketing and Data Analytics

Recommended Motion:

"BE IT RESOLVED THAT the Okanagan College Board of Governors approves the new program Post-Baccalaureate Diploma in Marketing and Data Analytics as recommended by Education Council and as presented."

Rationale:

Target Student:

The proposed Okanagan College Post-Baccalaureate Diploma in Marketing and Data Analytics (PBDMDA) program is designed for individuals who have completed a bachelor degree in any business or science program looking for further education in the new and exciting area of marketing and data analytics.

Labour Market and Industry:

Data Analytics is a sub-discipline of Data Science. The job of a data scientist has been referred to as "The Sexiest Job of the 21st Century" ([Davenport and Patil, 2012]). The same article goes on to state that "The shortage of data scientists is becoming a serious constraint in some sectors". Thus, there appears to be an opportunity for OC to serve our community by training students in the area of Marketing and Data Analytics.

A McKinsey Global Institute (MGI) report ([Manyika et al., 2011]) predicts a 40% growth in global data volume annually and a 5% annual growth in global information technology (IT) spending. The report states that the US healthcare system could realize a $300 billion yearly savings by exploiting data science. Retailers, using data science, could increase operating margins by more than 60%.
The follow-on MGI report ([Henke et al., 2016]) asserts that most companies are not capturing the full value of their data. In this regard, the recruitment and retention of appropriate talent are highlighted as significant constraints. The shortage of data scientists is projected to grow to 250,000 by 2026.
In order to estimate the future demand for data scientists, MGI published a set of required job skills: statistical modelling, predictive analytics, predictive modelling, natural language processing, logistic regression, support vector machines, neural networks, naive Bayes, k-means, principal components analysis, Python, and R. Most of these skills are developed in the PBDMDA.

MGI defines the role of the business translator. Business translators are professionals that have a firm backgrounds in business and also understand the technical concepts associated with data science. Business translators can summarize the results of complex data science investigations for senior management. MGI suggests that the ratio of business translators to pure data scientists should be between 4:1 and 8:1 in organizations trying to extract maximum value from their data. Consequently, the report estimates a US shortfall, for business translators, of between 2 million and 4 million by 2026.

Currently, about 10% of US business and science, technology, engineering, and mathematics (STEM) graduates enter business translator roles. However, given the current production of graduates, this number will need to more than double to meet demand. Consequently, many organizations have initiated in-house training programs to fill business translator positions.

The conversion of STEM and business graduates to the role of Business Translator represents a significant opportunity for OC. The proposed PDBMDA addresses this opportunity in two ways. Business graduates can gain technical expertise while STEM graduates can learn how to apply extant technical expertise in the area of Marketing.

A Google search (on July 28, 2017) for the phrase "data science" returned a staggering 23.8 million results. The results point to sites for courses and programs, professional sites, blogs, job opportunities, etc. The investigation is also complicated by the existence of numerous data-driven disciplines: business analytics, data analytics, data analysis, healthcare analytics, etc. For instance, despite comparable skills, a data scientist at one company might be labelled a business analyst at another company.
A search (on August 17, 2017) for the phrase "data scientist", on the job site Indeed, produced 188 postings for Canadian jobs. A search for "data analyst" produced 371 postings and a search for "business analytics" produce 230 postings. The postings were subsequently partitioned according to the keywords "machine learning" (ML), "mathematics", "statistics", and "Python". The results are summarized in the table below.

Discipline	ML	Mathematics	Statistics	Python
Data Scientist	72%	36%	49%	68%
Data Analyst	6.5%	16%	24%	16%
Business Analytics	5.2%	9.6%	18%	8.8%

Table 1: Canadian Job Postings (Indeed Job Trends)

As we move away from Canadian job postings, the demand for data scientists and data analysts versus time tells a different story. The demand for data scientists appears to be overtaking the demand for data analysts (see Appendix 3 for graph).

A distribution of data scientist salaries is given in a table in the appendix. The average salary is reported as $167K (USD). This average includes annual and signing bonuses as well as equity. Additional and updated information can be found on the Paysa Data Science Salaries.

Marketing & Data Analytics as a High Demand Occupation
Students interested in the PBDMDA are potentially employable in a number of industries including:
· Health Care Authorities
· Digital Marketing Firms
· Marketing Research Firms
· Accounting & Consulting Firms
· Insurance and Actuarial Companies
· Financial Institutions & Banks
· Municipal, Provincial and Federal Governments

Students interested in Marketing and Data Analytics are employable in traditional marketing firm as well as those specializing in social media. The health care, finance, insurance and banking industries, along

with the government sector are all areas adopting data analytics as part of their core operations. Some are creating new data analytics departments while others are housing them in their Finance, Research, Human Resources or Marketing departments.

Locally, a number of major employers have an data analytics department including the Interior Health Authority (IHA), Tolko Industries and Kal Tire. Most recently the City of Kelowna has also opened an analytics department. In addition, locally based credit unions including Valley First and Interior Savings also have analytics department and are looking for employees. These employers advise us that it is difficult to recruit employees for these departments and IHA advises they fully support the development of this program at Okanagan College.

Calendar description:
This unique two-year post-baccalaureate diploma (60 credit/20 course) is aimed at students with a bachelor degree in any business or science program who wish to pursue a career in Marketing and Data Analytics. Students will receive thorough training in statistics and data science. Term one of this program sets the mathematical and statistical foundation for higher level learning in the marketing and data science area. In subsequent terms, students build on, and apply, these foundational skills to a diverse set of areas. While many of the applications have a business or marketing focus, the mathematical, statistical, and data science concepts learned are universally applicable to a wide range of disciplines.

Program Learning Outcomes:
At the end of this program students will:
Apply mathematical, statistical and machine learning techniques to support organizational decisions as well as to identify new data driven opportunities.

Manage and manipulate data and create data visualizations using a variety of mathematical and statistical software.

Participate in the planning and execution of a data science project culminating in recommendations based on the results of the analysis.

Evaluate, define and explain data-analytic problems that offer the greatest opportunities for organizational benefits.

Understand digital marketing and the business applications of marketing analytics.
Perform both primary and secondary marketing research, analyze data, and present in a professional format.

Admission requirements:
Successful completion of a recognized Bachelor Degree in any business or science program. A post-secondary basic calculus course, or equivalent, is highly recommended.

Graduation requirements:
Successful completion of the prescribed and elective courses as listed in the program outline with a minimum graduating grade average of 60%.

Addition of courses:
DSCI 100, DSCI 101, DSCI 110, DSCI 200, DSCI 390

Revision of courses:
MATH 147, MATH 251/CSCO 221, MATH 314, STAT 230/BIOL 202, STAT 310

Program outline:

Semester 1:

DSCI 100	Introduction to Data Science 1
DSCI 110	Mathematical Computation
BUAD 116	Marketing
STAT 230	Elementary Applied Statistics
MATH 314	Calculus and Linear Algebra for Business

Semester 2:

DSCI 101	Introduction to Data Science 2
BUAD 123	Management Principles
BUAD 200	Digital Marketing
BUAD 210	Introduction to Marketing Research
STAT 240	Applied Statistics II

Semester 3:

DSCI 200	Introduction to Data Science 3
BUAD 283	Management Information Systems
STAT 310	Regression Analysis
BUAD 344	Marketing Analytics and Data Analysis
Elective	Any 3 credit academic course

Semester 4:

MATH 251	Introduction to Discrete Structures
STAT 311	Modern Statistical Methods
BUAD 315	Management Science
DSCI 390	Data Science Project
Elective	Any 3 credit academic course

Implementation date: July 2019

Cost: N/A