



# Computer Science (COMP) 684

## Business Intelligence (Revision 2)

**Delivery mode:** [Grouped study](#)  with [eText](#) 



**Credits:** 3

**Area of study:** Information Systems


**Prerequisites:** [COMP 607](#) and [COMP 657](#) are highly recommended, but not required. Familiarity with business practices and techniques in Artificial Intelligence is an asset to successfully complete the course. Students must get approval from the course coordinator before registering.

**Precluded:** None

**Faculty:** [Faculty of Science and Technology](#) 

**Status:** Replaced with new revision, see the [course listing](#)  for the current revision 

**Notes:** This is a graduate level course and students need to apply and be approved to one of the graduate programs or as a non-program [School of Computing and Information](#)

**Systems**  graduate student in order to take this course. Minimum admission requirements must be met. Undergraduate students who do not meet admission requirements will not normally be permitted to take this course.

Students registered in this course will **not** be allowed to apply for a course extension because of the interdisciplinary nature of the course activities.

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**Instructor:**

**Vivekanandan Kumar** 

## Overview

Business decision making requires a thorough understanding of business needs as well as of the computational tools required to optimally execute all decisions. To achieve optimal execution, decision makers need the capacity to collect first-hand, in-depth, and contextual business data from highly distributed systems around the globe; to employ analytics techniques to discover possible business relationships; to communicate and collaborate effortlessly with clients, partners, and analysts; and to evolve a highly successful business practice. Decision makers can acquire the necessary skills and strategies by studying and utilizing a seamlessly integrated set of computational and business techniques, together referred to as *business intelligence (BI)*.

The course approaches BI from both technological and managerial viewpoints. Learners are welcome to orient their study towards either viewpoint. The course closely follows the textbook by engaging learners in extensive, vivid examples from large corporations, small businesses, government, and not-for-profit agencies. Each topic addressed analyzes

business perspectives, technological advancements, and how they interrelate to open the world of business intelligence.

## Outline

- Weeks 1 and 2 introduce the three types of analytics – descriptive, predictive, and prescriptive.
- Week 3 provides a basic foundation for decision making in general and computer-supported decision making in particular.
- Week 4 presents an overview of descriptive or reporting analytics.
- Weeks 5 through 10 cover predictive analytics.
- Weeks 11 through 14 introduce big data analytics and emerging trends in business analytics.

## Learning outcomes

After completing this course, students will be able to:



- Identify the major frameworks of computerized decision support: decision support systems (DSS), data analytics and business intelligence (BI).
- Explain the foundations, definitions, and capabilities of DSS, data analytics and BI.
- List the definitions, concepts, and architectures of data warehousing.
- Demonstrate the impact of business reporting, information visualization, and dashboards.
- Explain data mining, neural networks, support vector machines, text analytics, text mining, sentiment analysis, web mining, web analytics, social analytics, social network analysis.
- Outline the definitions, concepts, and enabling technologies of big data analytics.

- Apply big data technologies in business intelligence using geospatial data, location-based analytics, social networking, Web 2.0, reality mining, and cloud computing.
- Identify the major ethical and legal issues of analytics.
- Describe how analytics are powering consumer applications and creating a new opportunity for entrepreneurship for analytics.
- Effectively communicate course work in writing and oral presentation.

## Objectives

The objectives of this course are to provide graduate students of M.Sc. Information Systems with comprehensive and in-depth knowledge of Business Intelligence (BI) principles and techniques by introducing the relationship between managerial and technological perspectives. This course is also designed to expose students to the frontiers of BI-intensive BIG data computing and information systems, while providing a sufficiently strong foundation to encourage further research.


## Evaluation

In order to **receive credit**  for COMP 684, you must achieve a cumulative course grade of **B- (70 percent)**  or better, and must achieve a minimum of 60 out of 100 in the formative assessment, 20 out of 35 in the final summative assessment, and 10 out of 15 in the weekly participation assessment. Students will work in small groups to solve and submit formative assessment problems. The final summative assessment is a three-day take-home assessment based on individual work. Your cumulative course grade will be based on the following assessment.



Activity	Weight
Formative Assessment: group work	50%

Activity	Weight
Summative assessment: individual work and oral defense	35%
Weekly participation assessment	15%
<b>Total</b>	<b>100%</b>

## Materials

*Business Intelligence and Analytics: Systems for Decision Support*, 10<sup>th</sup> edition, by Ramesh Sharda, Dursun Delen, and Efraim Turban. Upper Saddle River, NJ: Pearson Education, 2014.   
(eText)

### eText

Registration in this course includes an electronic textbook. For more information on [electronic textbooks](#) , please refer to our **eText Initiative site** .

All learning materials are distributed in electronic format from within Moodle. At this time, those materials include:

The COMP 684 Business Intelligence course in Moodle, which includes detailed descriptions of the requirements for the group assignments and the individual final assessment.

The required e-textbook, *Business Intelligence and Analytics: Systems for Decision Support*, 10<sup>th</sup> edition, by Ramesh Sharda, et al., provides systematic and comprehensive knowledge of business intelligence, while other reading materials cover state-of-the-art and in-depth topics it does not.

Articles selected from journals, conferences, and the Web as supplemental readings for reference.

Links to a variety of web resources such as BI software, systems, tools, techniques, and strategies.

## Software Tools

A number of free and/or open source development tools from the Internet are prescribed for use. Group work is to be performed using Adobe Connect. Groups are expected to record their discussions using Adobe Connect's recording facility.

## Special Course Features

COMP 684 is offered by computer mediated communications (CMC) mode, and can be completed at the student's workplace or home. Your computer must have sound capabilities. You are also required to use Adobe Connect to collaborate with other students in your study group to work on assignments and the final assessment.

## Important links

- › [Future Course Offerings](#) 
- › [Important Dates and Deadlines](#) 
- › [MScIS Contact Information](#) 

Athabasca University reserves the right to amend course outlines occasionally and without notice. Courses offered by other delivery methods may vary from their individualized study counterparts.

*Opened in Revision 2, December 8, 2014*

*Updated November 30, 2022, by Student & Academic Services*

View [previous revision](#) 

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