

**College of Management
Georgia Institute of Technology
Atlanta, GA 30308**

**Special Topics: Business Intelligence and Analytics
(MGT 8803 EM4/MGT8803 TSZ)**

Spring 2011

Instructor: Dr. Han Zhang
Class Location: Tech Square 222
Class Day and Time: Tuesday, 6:05 – 8:55 pm
Class Website: T-Square
Office Location: Management 473
Phone: (404)894-4373
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Office Hours: Tuesday 4:30 – 5:45pm or by appointment. I will also respond to e-mails as soon as possible.

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Course description:

This course provides an introduction to business intelligence (BI) and analytics, including the processes, methodologies, infrastructure, and current practices used to transform business data into useful information and support business decision-making. BI and analytics requires foundation knowledge in data storage and retrieval, thus this course will review logical data models for both database management systems and data warehouses. Students will learn to extract and manipulate data from these systems by using structured query language (SQL). OLAP, Data mining, text mining, Web mining, and visualization along with reporting options such as management dashboards and balanced scorecards will be covered. Technologies utilized in the course include SAS Enterprise Miner, R, Weka and Tableau. The classes are mixture of lectures, guest speaker presentations and case discussions. The main components of this course include:

1. The foundation technologies (e.g., data warehousing) of BI & analytics.
2. Data analysis using SQL.
3. Major user models and methodologies (e.g., OLAP, data mining, text mining, Web mining)
4. The BI life cycle and BI implementation, maintenance and enhancement
5. The BI & analytics market

Course Objectives:

After you take this class, you will find out how to:

- Understand the principles and practical elements of BI & analytics
- Determine what your business needs
- Compare different approaches to BI & analytics
- Build a solid BI & analytics architecture and roadmap
- Design, develop, and deploy your BI & analytics plan
- Relate BI & analytics to data warehousing, ERP, CRM, and e-commerce
- Analyze emerging trends and developing BI & analytics tools to see what else may be useful

Text (required):

Turban, Efraim, Ramesh Sharda, Dursun Delen and David King, *Business Intelligence: A Managerial Approach*, 2nd Edition, Pearson Prentice Hall, 2011 (ISBN-10: 013610066X; ISBN-13: 9780136100669).

Other course materials will be posted on T-Square. Some handouts will be provided by the instructor.

Other suggested texts (not required):

Sabherwal, R. and I. Becerra-Fernandez, *Business Intelligence: Practices, Technologies, and Management*, John Wiley & Sons, Inc., 2011 (ISBN-13: 978-0-470-46170-9).

Rud, O. P., *Business Intelligence Success Factors*, John Wiley & Sons, Inc., 2009 (ISBN-13: 978-0-470-39240-9).

Turban, E., J. E. Aronson, T. P. Liang, R. Sharda, *Decision Support and Business Intelligence Systems*, 8th Edition, Pearson Prentice Hall, 2007 (ISBN-10: 0-13-198660-0).

Davenport, T. H. and J. G. Harris, *Competing on Analytics*, Harvard Business School Press, 2007 (ISBN-13: 978-1-4221-0332-6).

Loshin, D., *Business Intelligence: The Savvy Manager's Guide*, Morgan Kaufmann Publishers, 2003 (ISBN-13: 978-1-55860-916-7).

Howson, C., *Successful Business Intelligence: Secrets to Making BI a Killer App*, McGraw-Hill Companies, 2008 (ISBN-13: 978-0-07-149851-7).

Harts, D., *Microsoft Office 2007 Business Intelligence: Reporting, Analysis, and Measurement from the Desktop*, McGraw-Hill Companies, 2007 (ISBN-13: 978-0-07-149424-3).

Roiger, R. J. and M. W. Geatz, *Data Mining: A Tutorial-Based Primer*, Pearson Education, Inc., 2003 (ISBN-10: 0-201-74128-8).

Project Groups:

Please form your project group (4 – 5 students) by the third week in the spring semester, and submit each group member's complete name and valid e-mail address to the T.A. (Dezhi.Yin@mgt.gatech.edu) of the class. Please also specify that you are in the BI & Analytics class (MGT 8803 – EM4). Each project group will work on one BI & Analytics project and three case studies.

Mid-Term Exam:

There is one closed book and closed notes mid-term exam.

Project:

The class will work on a real project from InterContinental Hotels Group (IHG). Dr. Larry Seligman is the Director of Business Intelligence and Analytics, CRM Technologies, IHG AMER. On January 25, Dr. Seligman will give a guest lecture on BI & Analytics, and give a high-level class project overview. Basically in this class project, each group will decide how to capture data, cleanse and integrate data, derive metrics, propose actionable segments, make visualization and finally propose actions from the decisions. About this project, please see the detailed guidelines distributed in the class.

Case Studies:

There are three cases in this class. Each project group will work on the cases as a group and turn in a report for each case. We will purchase the three cases in the spring semester.

Assignments:

Homework assignments will be given during the semester. All assignments are due at the beginning of class on the date due. Late submission of assignments will be assessed a penalty of 25% per day. No exceptions are made. The detailed information on each assignment will be announced in class and will be also available in the class website. Students must work independently on all the assignments.

Grading:

- Mid-term Exam (10%)
- BI & Analytics Project (35%)
- Cases (30%)
- Homework (10%)
- Class Participation (15%)

The grading will be based on a relative grading scheme. The student with the highest grade in the class will be normalized to a 100%. The rest of the students will be normalized accordingly.

Classroom Conduct:

- Arrive at class on time and do not leave early (if you have to leave early, you must get the instructor's permission in advance).
- Do not talk to your classmates about topics that are not related to the class during the class time.
- All digital devices (e.g., laptop, PDA, cell phone, pager, etc.) are prohibited during the class time.
- Attendance for guest speaker sessions is required. Be respectful to guest speakers.

Pertinent information regarding these requirements can be found in the Student Code of Conduct at the following link:

<http://www.deanofstudents.gatech.edu/Policy/code.in.sections.htm#SCCgen7>

General Notes:

- Do not miss class. You will see that little things I say in class may be included in the exam. Also, class participation is very important.
- Plagiarism during the exam and at other times will be reported to the authorities and will be handled according to Georgia Tech rules. To read the text of the Honor Code please visit: <http://www.honor.gatech.edu>.

Detailed Course Outline:

Note: The schedule is **tentative**. It may change. The spring semester of 2011 starts on January 10, 2011 and ends on May 7, 2011 (May 2 – 6 are for final exams).

	Date	Topics	Descriptions
1	1/11	Foundations of BI & Analytics	<ul style="list-style-type: none">• Class Introduction (cancelled due to weather)
2	1/18		<ul style="list-style-type: none">• Class Introduction• Introduction to BI & Analytics• Database Basics• Data Warehousing (I)
3	1/25		<ul style="list-style-type: none">• 6:05 – 7:30pm, Guest Speaker: Larry Seligman, InterContinental Hotels Group (Presentation & High-level Project Overview)• Data Warehousing (II)• Business Analytics
4	2/1	Major BI & Analytics Tools	<ul style="list-style-type: none">• Data Analysis Using SQL (I)
5	2/8		<ul style="list-style-type: none">• Data Analysis Using SQL (II)
6	2/15		<ul style="list-style-type: none">• 6:00 – 7:30pm, Guest Speaker: Scott Golden, Decision First Technologies• Data Mining (I)
7	2/22		<ul style="list-style-type: none">• Data Mining (II)

8	3/1		<ul style="list-style-type: none"> • Data Mining (III)
9	3/8		<ul style="list-style-type: none"> • Mid-term Exam • Text and Web Mining
10	3/15	BI & Analytics Strategy, Implementation & Market	<ul style="list-style-type: none"> • 6:00 – 7:30pm, Guest Speaker: David Nay, TSYS • Case Study (I): Canadian Tires
11	3/29		<ul style="list-style-type: none"> • 6:00 – 7:30pm, Guest Speaker: Charlie Thompson, The White Oak Group • 7:45pm, Dr. Larry Seligman's Q&A session for the IHG project • Business Performance Management • Dashboards and Scorecards
12	4/5		<ul style="list-style-type: none"> • BI Implementation (I) • Case Study (II): SYSCO
13	4/12		<ul style="list-style-type: none"> • 6:00 – 7:30pm, Guest Speaker: Rob Wittes from Careerbuilder.com • BI Implementation (II)
14	4/19		<ul style="list-style-type: none"> • 6:00 – 7:30pm, Guest Speaker: H.P. Bunaes from SunTrust Banks, Inc. • Case Study (III): Harrah's Entertainment
15	4/26		<ul style="list-style-type: none"> • The Future of BI & Analytics • Project Presentation