# IE 413 INFORMATION SYSTEMS

**Catalog Data:** This course introduces information systems implemented and utilized in today’s enterprises both as an operational and decision support systems. Topics covered will include the overview of the information systems and technologies, hardware and software used in information systems, overview of database management systems and data modeling techniques, query languages , data warehousing concepts and architectures, business intelligence, data mining techniques, use of data warehousing and business intelligence in data-driven decision making, current trends in IT such as cloud computing and big data.

Learning objectives of the course.

* Grasp the importance of information systems and technology in achieving both corporate objectives and competitive advantages
* Gain insight on the transactional and analytical processing used in business applications and decision-making processes
* Understand the fundamentals of data warehousing and business intelligence
* Get familiar with the MS Excel, MS Access and python programming language and related constructs for performing data analytics

**Instructor:** Yasemin Turkan, turkan.yasemin@gmail.com or yasemin.turkan@sabanciuniv.edu

**TA:** TBA

**Schedule:**

Wednesday 8:40-10:30 (Recorded session)

Thursday 10:40-11:30 (Online session)

practice/recitation hours

Thursday 12:40-13:30 (group A)

Thursday 13:40-14:30

# Requirement:

* Introductory level programming on any programming language. Familiarity with the concepts such as Conditionals, Loops and Functions.
* Introductory level skills on Excel. Familiarity with columns, rows, basic Excel Operations.

# Textbooks:

* Information Systems for Business and Beyond by David T. Bourgeois, James L. Smith, Shouhong Wang, Joseph Mortati, Biola University. Free On line <https://digitalcommons.biola.edu/open-textbooks/1/>
* WhatWorks in Enterprise Business Intelligence, Free on line at: <http://download.101com.com/tdwi/ww24/whatworks24digitaledition.pdf>
* Business Intelligence Guidebook, by Rick Sherman, Publisher: Morgan Kaufmann, free online at <https://risc01.sabanciuniv.edu/search~S9/?searchtype=r&searcharg=IE413>

# Additional Resources:

* Auxiliary [Course Notes](http://www.ucb-access.org/Pages/Accesscourse.aspx?node=Beginning&page=Designing%2C%20Building%2C%20and%20Using%20Databases(Beginning%20MS%20Access)&subpage=Downloads),
* MS Access and MS Excel online tutorials (links will be shared in the class)

# Zoom ID: 5152831935

**Grading:**

HWs 20%

Project 30%

Midterm 20%

Final 30%

# Tentative Course Outline:

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| Week | Topic |
| Week 1 | Overview of Information Systems and Technologies and Current Trends |
| Week 2 | Hardware and Software Concepts in Information Technology |
| Week 3 | Emerging Trends in IT -Business Intelligence, Big Data, Data Mining, Cloud Computing, Mobile Devices, Internet of Things |
| Week 4 | Emerging Trends in IT -Remote Computing, Information Security, Protecting Personnel Information, etc. |
| Week 5 | DBMS Overview and Design Tables and Relations among tables |
| Week 6 | Data Warehousing Fundamentals OLTP-OLAP Concepts – ETL Concepts |
| Week 7 | Query by Example (Microsoft Access) |
| Week 8 | Midterm Exam |
| Week 9 | Data Analysis Examplesusing Excel, MS-Access, and Python Libraries |
| Week 10 | Database design and implementations from real world  |
| Week 11 | Information Systems Components:ERP, MRP, SCM |
| Week 12 | Information Systems Components:CRM, SCM, Finance Tools, Accounting Packages, |
| Week 13 | Course Review |
| Week 14 | Term ProjectFinal Exam |