INFORMATION TECHNOLOGY FOR BUSINESS

BACHELOR IN MANAGEMENT INFORMATION SYSTEMS

Professor: IGNACIO LARRU MARTÍNEZ
E-mail: ilarru@faculty.ie.edu

Academic year: 17-18
Degree course: SECOND
   Semester: 1º
Category: BASIC
Number of credits: 6.0
Language: English

PREREQUISITES
This course assumes students have successfully completed the INTRODUCTION TO BUSINESS
INFORMATION TECHNOLOGY course during their freshman year

SUBJECT DESCRIPTION
This course builds on the concepts learned in the first course to expand your knowledge regarding
the use of information technology in a business environment. During the course we will review the
main business models powered by technology and how the information is stored and processed in
a business setting.

As part of the course we will develop our own information system for an ecommerce site (inventory
management, billing and customer support) to help us understand fully how these systems are built.
While building our system we will expand both our knowledge regarding information systems and
the Java J2EE framework for web programming

OBJECTIVES AND SKILLS
At the end of this course and having completed the activities the students should be able to:

- Have a solid understanding of the new business models powered by information technologies
  from online marketplaces to freemium apps and SaaS
- Make informed decisions regarding the design of information technology systems in
  businesses.
- Describe techniques for implementing information technology systems from understanding
  requirements to split development responsibilities

METHODOLOGY

<table>
<thead>
<tr>
<th>Teaching methodology</th>
<th>Weighting</th>
<th>Estimated time a student should dedicate to prepare for and participate in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>16.67 %</td>
<td>25 hours</td>
</tr>
<tr>
<td>Discussions</td>
<td>16.67 %</td>
<td>25 hours</td>
</tr>
</tbody>
</table>

Published by IE Publishing Department
<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercises</td>
<td>26.67 %</td>
<td>40</td>
</tr>
<tr>
<td>Group work</td>
<td>13.34 %</td>
<td>20</td>
</tr>
<tr>
<td>Other individual studying</td>
<td>26.67 %</td>
<td>40</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>150</strong></td>
</tr>
</tbody>
</table>
PROGRAM

SESSIONS 1 - 5
INTRODUCTION TO JAVA PROGRAMMING IN A BUSINESS ENVIRONMENT
Review of the main constructs of the Java programming language
- Variable types
- Operators (logical and mathematical)
- Loops
- Methods
- Data structures (Array, ArrayList, Hashtables)
- Permanent storage of information with files
For this part of the course, if students need to review additional materials they can use "Head first Java" or other Java introductory books

SESSIONS 6 - 10
ADVANCED JAVA PROGRAMMING TOPICS
- Objects and Classes
- Packages
- Inheritance
- Polymorphism
For this part of the course, if needed, students can review the material in "Head First Java"

SESSIONS 11 - 15
In these sessions we are going to develop a full blackjack playing system, from requirements to the class design and implementation of the playing algorithm.
These sessions will be conducted as practical workshops with students organized in teams implementing the system based on common requirements

SESSION 16
Exam of the first part of the course. In these sessions students will code a system based on the requirements handed in class

SESSION 17
INTRODUCTION TO WEB BASED INFORMATION SYSTEM DESIGN
- Overview of a web based enterprise information system
- In this session we will review the roles of a web server, application server and database in an enterprise information system together with the MVC design pattern as included in the J2EE framework

SESSIONS 18 - 20
THE HTML language as the basis of information visualization in enterprise information systems
- In this session we will review the HTML language as the basis of the View in a web based enterprise system

SESSIONS 21 - 25
JAVA SERVER PAGES
- In these sessions we will review the main web programming structures in the Java Server Pages technology to allows us to include some dynamic behavior on our web based enterprise system

SESSIONS 26 - 29
Java Beans
In these sessions we will learn how to design and implement a Controller for our system based on Servlets and Java beans components

SESSION 30
JSP & SERVLETS EXAM
In this exam students will answer theoretical and practical questions regarding designing three tier information systems for enterprises using J2EE framework

SESSION 31
Designing the data layer in an enterprise system
This session will help us understand why data needs to be raw, immutable and eternal in the data layer of an enterprise information system

SESSIONS 32 - 35
JDO - Implementing an OOP driven data layer in our system
In these sessions we will review how to use the JDO technology building on our knowledge of the SQL language to provide an interface between our relational database and our controller

SESSIONS 36 - 39
In these session we will code the required functionality to join all of the three tiers together while reviewing som a basic data science in Java using the Weka library

SESSION 40
Final exam of the course with a mix of theoretical and practical questions that will cover all the materials reviewed in the course
Buy your books here

None of these books are mandatory but are recommended for students who want to review them in order to anchor the concepts discussed in class:

- Head First Java, 2nd Edition 2nd Edition by Kathy Sierra, Bert Bates
- Head First Servlets and JSP: Passing the Sun Certified Web Component Developer Exam 2nd Edition by Bryan Basham, Kathy Sierra, Bert Bates
- Java Data Objects: Store Objects with Ease May 2, 2003 by David Jordan and Craig Russell

The course grade will be composed of:

- Session participation 20%
  
  Attendance and punctuality are mandatory. Students are expected to come prepared and participate actively and voluntarily during lectures.

- Mid-term examinations 30% open-book, written examination.
- Final exam 50% open-book, written examination.

Each student has 4 chances to pass any given course distributed in two consecutive academic years (regular period and July period).

Students who do not comply with the 70% attendance rule will lose their 1st and 2nd chance, and go directly to the 3rd one (they will need to enrol again in this course next academic year).

Grading for retakes will be subject to the following rules:

Students failing the course in the first regular period will have to do a retake in July (except those not complying with the attendance rules, which are banned from this possibility).

Dates and location of the July retakes will be posted in advance and will not be changed. Please take this into consideration when planning your summer.

The July retakes will consist on a comprehensive exam. The grade will depend only on the performance in this exam; continuous evaluation over the semester will not be taken into account. This exam will be designed bearing in mind that the passing grade is 5 and the maximum grade that can be attained is 8.

The non-July retakes (this happens in the ordinary period: students in their third attempt) will consist on special assignment or presentation. The details will be provided in advance during the course.

- The maximum grade that a student may obtain in any type of retake will be 8 out of 10.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Percentage</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Participation</td>
<td>20 %</td>
<td></td>
</tr>
<tr>
<td>Intermediate Tests</td>
<td>30 %</td>
<td></td>
</tr>
<tr>
<td>Final Exam</td>
<td>50 %</td>
<td></td>
</tr>
</tbody>
</table>
Professor: **IGNACIO LARRU MARTÍNEZ**  
E-mail: ilarru@faculty.ie.edu

Ignacio Larrú advises companies on growth and sales design together with venture investment decisions.

Previously Ignacio has been the founder (and coder…) of a wide array of different start-ups ranging from online retailers to complex software in the civil sector. He started his career as an IT consultant with PricewaterhouseCoopers developing software applications for leading financial institutions.

Ignacio holds a Master of Telecommunications Engineering from Universidad Politécnica de Madrid and a Master in Business Administration from IESE business School

## OTHER INFORMATION

### CODE OF CONDUCT IN CLASS

1. **Be on time:** Students arriving more than 5 minutes late will be marked as “Absent”.

Only students that notify in advance in writing that they will be late for a specific session may be granted an exception (at the discretion of the professor).

2. **If applicable, bring your name card and strictly follow the seating chart.** It helps faculty members and fellow students learn your names.

3. **Do not leave the room during the lecture:** Students are not allowed to leave the room during lectures. If a student leaves the room during lectures, he/she will not be allowed to re-enter and, therefore, will be marked as “Absent”.

Only students that notify that they have a special reason to leave the session early will be granted an exception (at the discretion of the professor).

4. **Do not engage in side conversation.** As a sign of respect toward the person presenting the lecture (the teacher as well as fellow students), side conversations are not allowed. If you have a question, raise your hand and ask it. If you do not want to ask it during the lecture, feel free to approach your teacher after class.

If a student is disrupting the flow of the lecture, he/she will be asked to leave the classroom and, consequently, will be marked as "Absent".

5. **Use your laptop for course-related purposes only.** The use of laptops during lectures must be authorized by the professor. The use of Social Media or accessing any type of content not related to the lecture is penalized. The student will be asked to leave the room and, consequently, will be marked as “Absent”.

6. **No cellular phones:** IE University implements a “Phone-free Classroom” policy and, therefore, the use of phones, tablets, etc. is forbidden inside the classroom. Failing to abide by this rule entails expulsion from the room and will be counted as one absence.

7. **Escalation policy: 1/3/5.** Items 4, 5, and 6 above entail expulsion from the classroom and the consequent marking of the student as “Absent.” IE University implements an “escalation policy”: The first time a student is asked to leave the room for disciplinary reasons (as per items 4, 5, and 6 above), the student will incur one absence, the second time it will count as three absences, and from the third time onward, any expulsion from the classroom due to disciplinary issues will entail 5 absences.