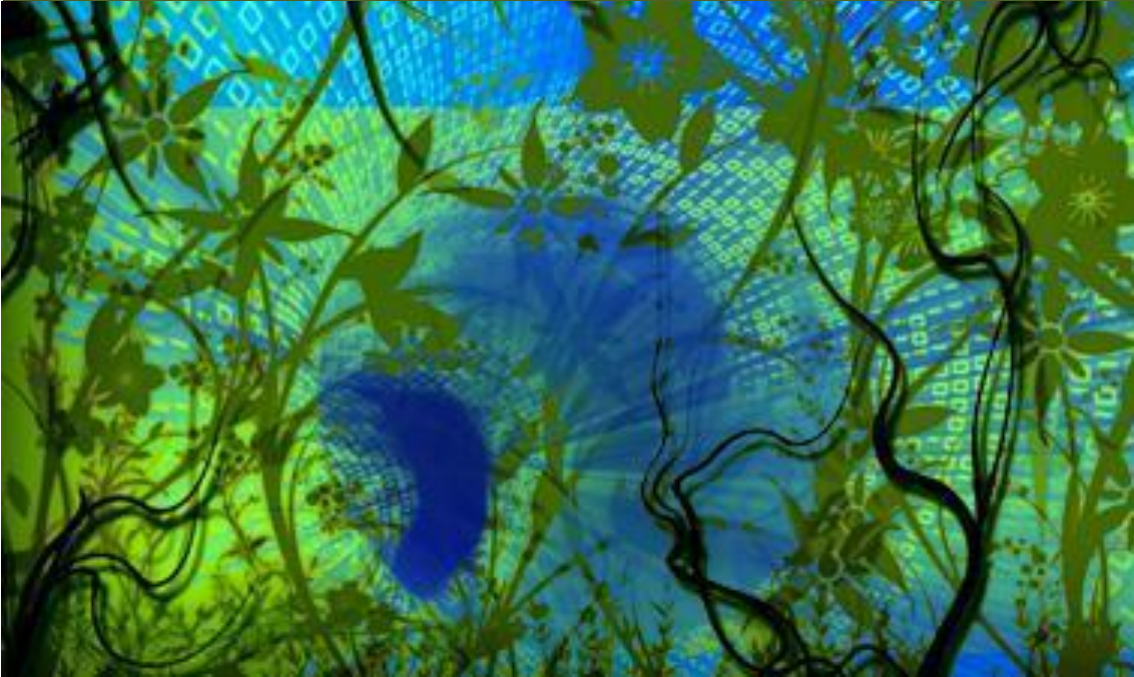


INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS (MIS)



A Survival Guide

LENGTH:	Self-Paced (estimated: 6 weeks)
EFFORT:	3 - 4 hours per week
SUBJECT:	Business & Management
LEVEL:	Introductory
LANGUAGE:	English
VIDEO TRANSCRIPTS:	English, Español

SYLLABUS

INTRODUCTION

Management Information Systems (MIS) are all around us. A well-grounded familiarity with MISs enables better understanding of the how's and why's of our professional life – it can also be quite helpful in actually starting a professional life, since potential employers consider it a valuable skill. It can also allow us to make better sense out of an increasingly connected and systems-enabled personal and social life.

The goal of the course *Introduction to Management Information Systems (MIS): A Survival Guide* is to help learners become familiar with MISs in the business world by focusing on the fundamentals of information systems, what they are, how they are built and how they affect organizations and consequently how do they influence our current or prospective jobs. Understanding these concepts will help you to acquire necessary skills to survive in a MIS dominated world/ jungle; course graduates will also be able to use that knowledge to their advantage in recruitment or promotion processes.

Grasping the key concepts in MIS does not need to be a daunting endeavor. We will use several analogies to illustrate key concepts, use frequent examples to illuminate the explanations and strive to strike a proper balance between clarity / amenity and conceptual soundness.

The current course format is self-paced, however it is organized in six “modules” or weeks; when it was originally introduced as instructor-paced, the duration of the course was six weeks. Programming knowledge is not required.

Course materials are under the *Course* tab at the top of the page.

If this is your first course on edX, do not hesitate to enroll in the Demo course to get to know the courseware: <https://www.edx.org/course/demox-edx-demox-1>.

OBJECTIVES

The main objectives of this course are:

- Understanding Management Information Systems (MIS) and their role in today's organizations.
- Identifying how MIS shapes and controls current (or prospective) jobs and how to use this insight to improve your own job performance and satisfaction and enhance your career prospects.
- Becoming familiar with the major trends in MISs and MIS infrastructures (Cloud, Big Data, ERPs, outsourcing) and how these evolutions might affect workplaces and business strategies.
- Bridging the MIS-related second “digital gap” that exists, after basic computer literacy, in most professional jobs.

This introductory course will generally adopt a light-touch and a managerial, rather than technological, focus. The emphasis will be on examining concepts and an overview of common commercial IT/IS applications, rather than on the details of the underlying technology.

COURSE STAFF

This course will be coordinated and taught by:

- **ALFONSO DURÁN HERAS:** Full professor at Universidad Carlos III de Madrid.

You will also interact with, and receive support from, other UC3M course staff, including:

- **ALEJANDRO OLMO JIMÉNEZ**
- **KAREN REINA SÁNCHEZ**

COURSE STRUCTURE

Week 1.- MISs. Importance. Procurement

We will examine how modern information and communication technologies (ICTs) are transforming our world and analyze what Management Information Systems (MISs) are and how do they fit within the overall ICTs environment. We shall then discuss how companies obtain their MISs, by either purchasing ready-made packages or by bespoke development, and explore the alternative offered by open systems. In this week, participants will carry out an activity related to a HHRR application.

- 1.1.- The Management Information Systems Invasion
- 1.2.- MIS Procurement
- 1.3.- MIS Development
- 1.4.- Open systems. Open source

Week 2.- The Communications revolution – Distributed Information Systems

We will discuss how the trend towards globalization and continuous connectivity drives the need for distributed MISs supported by Telecommunication Networks. We will explore the various types of networks and distributed MISs architectures.

- 2.1.- Introduction: Distributed Systems and Distributed Infrastructures
- 2.2.- Distributed IS. Client-Server.
- 2.3.- Distributed Infrastructures. Telecommunications networks
- 2.4.- The Cloud

Week 3.- Data, Databases, Big Data

Data is the raw material upon which information is built. We will discuss the role played by data (and, particularly, data structure) in MISs, and analyze the Database Management Systems used to manage data. We shall then explore the fast-evolving landscape of Big Data.

- 3.1.- Data: a key ingredient in an MIS
- 3.2.- Databases, Database structure and Database Management Systems (DBMS)
- 3.3.- Data modelling. Relational Databases
- 3.4.- Normalization. SQL. DBMS choice.
- 3.5.- Big Data

Week 4.- Integrated Information Systems (ERP) and Integrated Business Processes

Integrated Information Systems are the “top predators” at the apex of the MIS world. We will introduce participants to the concept of Enterprise Resource Planning (ERP) systems, and their relationship with Integrated Business Processes. A key ingredient in this week will be a Hands-on assignment and an Additional Hands-on exercise.

Participants will access a real ERP in both. In the first assignment, they must create from scratch a customer order and make it “flow” through the various functions and departments, undergoing operations such as acceptance, inventory check, triggered purchasing, delivery, invoicing and accounting. In the second exercise, more comprehensive, participants will carry out other activities which allow them to widen its knowledge about ERPs. Both tasks are followed by graded questions that have a direct impact over the final mark.

- 4.1.- Introduction to Integrated Information Systems (ERP)
- 4.2.- Integrated Business processes and integrated IS
- 4.3.- ERP structure: Modules, common Database
- 4.4.- Pros and Cons of the ERP approach
- 4.5.- ERP hands-on session

Week 5.- Implementing and customizing ERPs and other major MISs. Who adapts to whom?

Implementing an ERP is a major project. It generally requires either modifying current business practices (through Business Process Reengineering) or customizing the ERP system. We shall discuss the challenges this implies.

- 5.1.- Challenges in the implementation and customization of MISs
- 5.2.- Adapting the current practice. Business Process Reengineering (BPR)
- 5.3.- Adapting the ERP
- 5.4.- ERP Implementation
- 5.5.- ERP Post-implementation

Week 6.- MISs in decision-making

In this last week we will turn our attention from the day-to-day operation of the business to the role played by MISs in information-driven decision-making. After discussing Decision Support Systems (DSSs) and the analytics used in Big Data environments, we shall conclude with a word about the future and a heartfelt farewell.

- 6.1.- Decision-making
- 6.2.- Transactional systems vs. Decision Support Systems
- 6.3.- Decision Support Systems challenges
- 6.4.- DSS, non-structured data and Big Data
- 6.5.- A word about the future
- 6.6.- Farewell

COURSE METHODOLOGY

This course edition is self-paced; thus, all required material will be available from the first day and you can progress through its content according to your own schedule.

The core content of the course is the thoroughly illustrated videos that will be divided in six weeks /units, explaining key concepts and examples. After viewing each video, students will be asked to carry out a self-assessment quiz (these quizzes do not count towards the final grade). Each week/unit will conclude with a test, which does count towards the final grade, as described below.

Besides, each week will encompass recommended readings, an annotated list of suggested URLs, links to actual examples and a set of relevant definitions.

The estimated time learners need to complete each week is from 3 to 4 hours.

COMMUNICATION WITH LEARNERS

EMAIL and the **COURSE INFO PAGE** will be used by the instructors to keep learners up-to-date on the evolution of the course. The **FORUM** will be used to encourage the engagement and interaction with students.

For all interested people who like to communicate anything related with the course in **TWITTER** you could use the hashtag [#MISintroedx](#).

EVALUATION

At the end of each week there will be a **TEST** about its contents. Each weekly test carries a weight of 10%, except the third and fifth weeks, whose weight is 15%. Therefore, the total weight of the tests is 70% of the total grade: $(4 \times 10\%) + (2 \times 15\%)$.

The first week includes a short **PRACTICAL ASSIGNMENT**. It will be evaluated through a test whose weight is 5%.

Week four's **HANDS-ON ASSIGNMENT** and **ADDITIONAL HANDS-ON EXERCISE** will have each a weight of 12.5%. They will be evaluated through a test. Pay special attention to this activity.

To **PASS THE COURSE** requires attaining at least 60% of the final grade.

CALENDAR

The course *Introduction to Management Information Systems (MIS)* starts on 3 October 2023 (00:00 UTC) and ends on 30 June 2024 (23:59 UTC) as a self-paced course. The due date for all tests and evaluations will be on 30 June 2024 (23:59 UTC).

Certificates (for students registering for a Verified Certificate) will be available on demand for learners as soon as they complete enough of the course with a high enough grade to qualify for a certificate. More information [here](#).