

**University of Human Development**

**College of Science and Technology**

**Department of Computer science**

Course book

Introduction to Information Technology

2014-2015

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# Course book outline

**Course name:** Introduction to Information Technology

**Lecturers name:** Hoger Mahmud

**College / Department:** Science and Technology/ Computer

**Class:** Fourth class and third

**Email:** [hoger.mahmud@uhd.edu.iq](mailto:hoger.mahmud@uhd.edu.iq)

**Address:** Kurdistan region of Iraq

As Sulaimaniyah

University of Human Development

Camp 2/ Qaradax

# Course overview

This course is an introductory course in information technology designed to provide students with knowledge of modern IT, understanding the components of IT and related technology, practical experience in its use, and management perspective on how IT is used in (private and public sector) organisations. Topics to be covered include: defining the academic discipline of Information Technology, foundations in hardware, software, and definition of data and contrast it with information and knowledge, data communication concepts, technologies and techniques, and an overview of the use of information technology in different area of everyday life. During this course, students will also learn about challenges and issues such as security issues, economic and political issues, and environmental issues that face organisations, businesses, and individuals as a result of wide adoption of information technology in modern day society.

**Learning outcomes**

* Describe what is data, information, technology and information technology
* Know the main components of information technology including hardware and software and how they work together
* Explain the role of information technology in different areas of life and give examples when necessary
* Draw diagrams to illustrate the use of information technology in specific fields such as communications, ecommerce and e-business.
* Outline the advantages of using information technology in different areas of everyday life
* Bring together different concepts of information technology and offer suggestion to solve given problems conceptually

|  |
| --- |
| **Objective** |
| Upon completing this course, students will:  • Understand the fundamentals of information technology  • Learn core concepts of computing and modern systems  • Understand modern software programs and packages  • Learn about upcoming IT technologies |

# Course reading list and references

## Key references:

**The principal textbook for this course is:**

1. Brian k. Williams and Stacey c. Sawyer, Using Information Technology: a practical introduction to computers & communication, McGraw-Hill, 2011, ISBN 978-0-07-351677-6

**Additional Reading (Textbooks)**

2. Richard Fox, Information Technology: An Introduction for Today’s Digital World, CRC Press, 20013, ISBN 978-1-4665-6828-0

## Useful references:

1. <http://doe.sd.gov/octe/documents/IT_IntroductionIT.pdf>
2. <https://www.law.berkeley.edu/files/chp1.pdf>
3. <http://www.info.gov.hk/archive/consult/2004/wayforward-e.pdf>

# The topics

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Title of the Subject** | **Weeks** | **Lecturer's/Tutor's Name** |
| L1 | Introduction and course book explanation | 1 | Hoger Mahmud |
| L2 | Introduction to information technology | 2 | Hoger Mahmud |
| L3 | IT in communication | 2 | Hoger Mahmud |
| L4 | IT in business | 2 | Hoger Mahmud |
| L5 | IT in commerce | 2 | Hoger Mahmud |
| L6 | IT in education | 2 | Hoger Mahmud |
| L7 | IT in health | 2 | Hoger Mahmud |
| L8 | IT in government | 2 | Hoger Mahmud |
| L9 | IT in security | 2 | Hoger Mahmud |
| L10 | IT in transportation | 2 | Hoger Mahmud |
| L11 | IT in entertainment | 2 | Hoger Mahmud |
| L12 | IT in scientific research | 2 | Hoger Mahmud |
| L13 | IT challenges in the future | 2 | Hoger Mahmud |

# Lecture number 1: Course Introduction

## Lecturer/tutor’s name: Hoger Mahmud

## Objectives:

1- Present course book

2- Introduce the subject

3- Provide an over view of the main aims and objectives of the course

3- Provide general guidelines for class attendance and expectation

# Lecture number 2: Introduction Information Technology

## Lecturer/tutor’s name: Hoger Mahmud

## Objectives:

## Considering the fact that this course is designed for the first year undergraduate students without (or with a limited) experience of using computers. It is very important to provide students with an opportunity to understand the basics of computers and related technologies that underpin information technology and how these technologies (primarily known as Information and Communication Technology, or ICT) work together before they progress into more advanced topics. Therefore this chapter is an introductory chapter in ICT. Topics include foundations in hardware, software. After that, topics such as the concept of information technology, components of information technology, function and applications of information technology will be covered in detail. The Scientific contents:

This is the first lecture of the course; in it the lecturer and the subject will be introduced. The aim of this lecture is to provide students with the lecturers contact details, give an overall view of the course objectives and the topics that are covered in the course. Students will also be provided with information about exams, marking schemes and types of coursework for the subject.

## The Scientific contents:

Information technology, parts of information technology, purpose of information technology, functions of information technology, benefits of information technology, applications of information technology, directions of information technology, directions of computer developments, and directions of communications technology developments.

## Main references of this lecture

1. The course main text book
2. <http://doe.sd.gov/octe/documents/IT_IntroductionIT.pdf>
3. <https://www.law.berkeley.edu/files/chp1.pdf>

# Lecture number3: IT in communication

## Lecturer/tutor’s name: Hoger Mahmud

## Objectives:

This subject has been included in to the syllabus so that students understand:

1. **The concept of communication**
2. **Software and hardware used in communication**
3. **The role of information technologies in communication**
4. **Advantages and disadvantages of using information technologies in communication**

## The Scientific contents:

In this lecture we will introduce the concept of communication and explain the different types of hardware and software used in communication. After this lecture students should be able to recognise the role of information technology in communication. Students should also be aware of advantages and disadvantages of using information technologies in communication.

## Main references of this lecture

1. The course main text book
2. <http://usir.salford.ac.uk/12835/1/530.pdf>
3. <http://www.oecd.org/innovation/research/2698249.pdf>

# Lecture number4: IT in Business

## Lecturer/tutor’s name: Hoger Mahmud

## Objectives:

This subject has been included in to the syllabus so that students understand:

1. **The concept of Business**
2. **Software and hardware used in Business**
3. **The role of information technologies in Business**
4. **Advantages and disadvantages of using information technologies in Business**

## The Scientific contents:

In this lecture we will introduce the concept of Business and explain the different types of hardware and software used in Business. After this lecture students should be able to recognise the role of information technology in Business. Students should also be aware of advantages and disadvantages of using information technologies in Business.

## Main references of this chapter

1. The course main text book
2. <http://hosteddocs.ittoolbox.com/jc070709.pdf>
3. <http://impgroup.org/uploads/papers/6163.pdf>

# Lecture number5: IT in Commerce

## Lecturer/tutor’s name: Hoger Mahmud

## Objectives:

This subject has been included in to the syllabus so that students understand:

1. **The concept of Commerce**
2. **Software and hardware used in Commerce**
3. **The role of information technologies in Commerce**
4. **Advantages and disadvantages of using information technologies in Commerce**

## The Scientific contents:

In this lecture we will introduce the concept of commerce and explain the different types of hardware and software used in commerce. After this lecture students should be able to recognise the role of information technology in commerce. Students should also be aware of advantages and disadvantages of using information technologies in commerce.

## Main references of this chapter

1. The course main text book
2. <http://www.sesric.org/jecd/jecd_articles/ART03070103-2.pdf>
3. <http://www.sxccal.edu/msccs/ecommerce1.pdf>

# Lecture number6: IT in Education

## Lecturer/tutor’s name: Hoger Mahmud

## Objectives:

This subject has been included in to the syllabus so that students understand:

1. **The concept of education**
2. **Software and hardware used in education**
3. **The role of information technologies in education**
4. **Advantages and disadvantages of using information technologies in education**

## The Scientific contents:

In this lecture we will introduce the concept of education and explain the different types of hardware and software used in education. After this lecture students should be able to recognise the role of information technology in education. Students should also be aware of advantages and disadvantages of using information technologies in education.

## Main references of this chapter

1. The course main text book
2. <http://www.nmc.org/pdf/Future-of-Higher-Ed-%28NMC%29.pdf>
3. <http://education.mit.edu/papers/GamesSimsSocNets_EdArcade.pdf>

# Lecture number7: IT in Health

## Lecturer/tutor’s name: Hoger Mahmud

## Objectives:

This subject has been included in to the syllabus so that students understand:

1. **The concept of health**
2. **Software and hardware used in health**
3. **The role of information technologies health**
4. **Advantages and disadvantages of using information technologies in health**

## The Scientific contents:

In this lecture we will introduce the concept of health and explain the different types of hardware and software used in health. After this lecture students should be able to recognise the role of information technology in health. Students should also be aware of advantages and disadvantages of using information technologies in health.

## Main references of this chapter

1. The course main text book
2. <http://www.uwomj.com/wp-content/uploads/2011/08/Naylor.pdf>
3. <http://www.brookings.edu/~/media/events/2010/5/14%20health%20information/final%20issue%20brief%2051310.pdf>

# Lecture number8: IT in governments

## Lecturer/tutor’s name: Hoger Mahmud

## Objectives:

This subject has been included in to the syllabus so that students understand:

1. **The concept of governments**
2. **Software and hardware used in governments**
3. **The role of information technologies governments**
4. **Advantages and disadvantages of using information technologies in governments**

## The Scientific contents:

In this lecture we will introduce the concept of governments and explain the different types of hardware and software used in governments. After this lecture students should be able to recognise the role of information technology in governments. Students should also be aware of advantages and disadvantages of using information technologies in governments.

## Main references of this chapter

1. The course main text book
2. <http://www.iceg.net/2007/books/1/1_369.pdf>
3. <file:///C:/Users/shania/Downloads/IMPACT_OF_ICT_IN_EDUCATION__ENTERTAINMENT__DEVELOPMENT__GOVERNANCE_POLITICS_AND_INDUSTRY-libre.pdf>

# Lecture number9: IT in Security

## Lecturer/tutor’s name: Hoger Mahmud

## Objectives:

This subject has been included in to the syllabus so that students understand:

1. **The concept of security**
2. **Software and hardware used in security**
3. **The role of information technologies security**
4. **Advantages and disadvantages of using information technologies in security**

## The Scientific contents:

In this lecture we will introduce the concept of security and explain the different types of hardware and software used in security. After this lecture students should be able to recognise the role of information technology in providing security. Students should also be aware of advantages and disadvantages of using information technologies in security.

## Main references of this chapter

1. The course main text book
2. <http://books.sipri.org/files/RR/SIPRIRR20.pdf>
3. [www.ictregulationtoolkit.org/Documents/Document/Document/3497](http://www.ictregulationtoolkit.org/Documents/Document/Document/3497)

# Lecture number10: IT in Transportation

## Lecturer/tutor’s name: Hoger Mahmud

## Objectives:

This subject has been included in to the syllabus so that students understand:

1. **The concept of transportation**
2. **Software and hardware used in transportation**
3. **The role of information technologies transportation**
4. **Advantages and disadvantages of using information technologies in transportation**

## The Scientific contents:

In this lecture we will introduce the concept of transportation and explain the different types of hardware and software used in transportation. After this lecture students should be able to recognise the role of information technology in transportation. Students should also be aware of advantages and disadvantages of using information technologies in transportation.

## Main references of this chapter

1. The course main text book
2. <http://www.uctc.net/papers/517.pdf>
3. <http://www.itif.org/files/2010-1-27-ITS_Leadership.pdf>

# Lecture number11: IT in Entertainment

## Lecturer/tutor’s name: Hoger Mahmud

## Objectives:

This subject has been included in to the syllabus so that students understand:

1. **The concept of entertainment**
2. **Software and hardware used in entertainment**
3. **The role of information technologies entertainment**
4. **Advantages and disadvantages of using information technologies in entertainment**

## The Scientific contents:

In this lecture we will introduce the concept of entertainment and explain the different types of hardware and software used in entertainment. After this lecture students should be able to recognise the role of information technology in entertainment. Students should also be aware of advantages and disadvantages of using information technologies in entertainment.

## Main references of this chapter

1. The course main text book
2. <http://www.ojcmt.net/articles/23/2310.pdf>
3. <http://www.itif.org/files/DQOL-8.pdf>

# Lecture number12: IT in Scientific research

## Lecturer/tutor’s name: Hoger Mahmud

## Objectives:

This subject has been included in to the syllabus so that students understand:

1. **The concept of scientific research**
2. **Software and hardware used in scientific research**
3. **The role of information technologies scientific research**
4. **Advantages and disadvantages of using information technologies in scientific research**

## The Scientific contents:

In this lecture we will introduce the concept ofscientific research and explain the different types of hardware and software used in scientific research. After this lecture students should be able to recognise the role of information technology in scientific research. Students should also be aware of advantages and disadvantages of using information technologies in scientific research.

## Main references of this chapter

1. The course main text book
2. <http://www.itif.org/files/2009-it-medical-research.pdf>
3. <http://www.rand.org/content/dam/rand/pubs/monograph_reports/2005/MR1357.0.pdf>

# Lecture number13: IT challenges in the future

## Lecturer/tutor’s name: Hoger Mahmud

## Objectives:

This subject has been included in to the syllabus so that students understand:

1. **Role of IT in future**
2. **The challenges of IT**

## The Scientific contents:

We have studied the role of IT in the previous lectures, in this final lecture we all sum up the outcome of all the lectures and provide an overview of the role of IT in future. We also study the possible challenges that information technology has to overcome to enhance its role in all aspects of live.

## Main references of this chapter

1. The course main text book
2. <http://www.diva-portal.org/smash/get/diva2:29271/FULLTEXT01.pdf>
3. <http://www.jamus.name/research/id2.pdf>

# Coursework and exams

The assessment of this course is **40% self study, midterm exam, reports, presentation and quizzes**.

* **10% report (teamwork)**
* **6% presentation (teamwork)**
* **10% midterm exam**
* **6% homework (2 homework)**
* **8% in class quiz (minimum 4)**

Team project

Each team will consist of three students and choose and information technology related topic and research it, then write a report about it. The team will then have to present their findings to their colleagues in class.

## Final exam (60% of the total mark)

* The type of the final exam will be Composition, true or false, Short explanations, and Diagram.
* There will be at least five questions, if there are more only five will be counted towards the final mark. The duration of the exam is **3 hours**. Students will be marked on the bases of explanation and application of the overall concepts of the course

**This Subject is worth 5 ECTS (125 hrs of work/13 weeks)**

* 39 hrs lectures
* 39 hrs self-study
* 12 hrs report preparation
* 5 hrs presentation
* 10 hrs midterm exam preparation
* 20 hrs final exam preparation
* 4 homework

# Rules and instructions to be followed by students for exams (optional)

* + Give yourself plenty of time to revise everything, the key is preparation.
  + The environment should be quite and free of distraction. Make sure you understand the topics.
  + Try to write short notes and review the material before you go to sleep
  + Read the questions twice and if you are unsure of anything, don’t just ignore it, please ask.
  + Think carefully before answering and plan the answer on a separate paper if that helps your memory.
  + The answer should contain preface, main contents and conclusion.
  + Eat healthily, give yourself at least 10 minutes of brake for every hour of study, and make sure you drink water regularly.

### The day before the examination

* Review the material using abbreviated notes not the lecture slides they are too long.
* Practise some exam questions and make sure you know the answer for them. Exam questions will be provided towards the end of the course.
* Know the location and time of the exam. Plan to arrive early.
* Make sure you have eaten before the exam.
* Make sure you have some good sleep before the exam

## Type of exams questions

**Q1**

**Write true or false for the following statements (4 *marks*)**

1. Technology is created by engineers to meet our needs and wants
2. In information technology hardware in more important than software
3. The main job of software is to tell computers what to do
4. In networks “LAN” means local area network

**Q2**

**Choose one correct answer (4 *marks*)**

1. -------------- is an example of hardware used in e-Commerce

|  |  |
| --- | --- |
| A- pen | B- Server |
| C-robot | D- ruler |

1. One megabyte is equal to ---------------------

|  |  |
| --- | --- |
| A- 900 bytes | B- 250 bytes |
| C- 400 bytes | D- 220 bytes |

1. -------------- The main job of Information technology is to convert

|  |  |
| --- | --- |
| A- data to information | B- information to data |
| C- information to numbers | D- numbers to information |

1. Keyboard and mouse are examples of --------------- device

|  |  |
| --- | --- |
| A- display | B- output |
| C- process | D- input |

**Q3**

**Answer the followings ( 4 *marks*)**

1. Name two methods of conveying information and explain one
2. Miniaturisation is one of the directions of future development of technology. Explain what is miniaturisation?
3. Explain two advantages of IT in communication
4. Explain what is a transmission medium in communication

**Q4**

**Answer the followings ( 5 *marks*)**

1. Draw and explain the chain type of network
2. What is a system, explain your answer with a diagram

# External examiner

From now on every course should have its own external examiner with identified roles.

The one who can play the role of an external examiner should:

* Have an academic post with the scientific rank of assistant Professor and higher.
* He/she should be an active, reputable and experienced academic staff in his field or a related field to the course.
* He/she should have not participated in lecturing or administering of the course.

The roles of the external examiner are:

* Evaluating the contents and the program of the course.
* Prior to the exam, he/she should contribute to choosing the questions and looking at the ideal answers.
* Evaluating the process of the examinations: he/she should see all the marked exam papers, and then choose randomly nine marked papers: three with high marks, three with medium and three with low marks.
* Evaluating the students' feedbacks
* He/she should participate in the final meeting of the first round examinations committee and give his assessment on the entire course and the examination process, then to give his opinion about the final results.
* He/she should participate in the final meeting of the second round examinations committee and should have a main vote on those problems that may face them.
* Then the lecturer/ tutor in charge will respond to the external examiner's questions and will reply officially to all the questions and clarify the reasons.

# Student’s feedback on the course

**Course:**  **Lecturer/ tutor:**

**Date:** / /201 **Year:** 2014-2015

**College:** **Department:**

**University:** Human Development

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Evaluation Questions** | **Subject's Level**  **1-5** | **Subjective Remarks** |
| 1 | The objectives and key messages of the subject were clear |  |  |
| 2 | The contents of the subject were useful and were related to the main objectives of the course |  |  |
| 3 | The coordinator teacher had worked hard to prepare the materials |  |  |
| 4 | The lecturer/ tutor while lecturing tried to analyze the principles, contents and the important points of the subject simply and properly. |  |  |
| 5 | The lecturer/ tutor came into the classroom on time and was committed to the duration of the lecture. |  |  |
| 6 | The lecturer's behavior in the classroom was calm and respectful. |  |  |
| 7 | The slides used in the lecture were clear and attractive. |  |  |
| 8 | At the end of the lecture, the lecturer gave the students a chance for questions and comments. His/ her answers were complete. |  |  |
| 9 | The coordinator teacher gave a good attention to the students' criticisms and claims |  |  |
| 10 | Information on the Examination process was well provided |  |  |
| 11 | The questions of the exams were related to the contents of the course. |  |  |
| 12 | The reading sources are new and compatible with the subject. |  |  |
|  | **Total of the levels** |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Standards to evaluate the level of the contents | | | | |
| 1 | 2 | 3 | 4 | 5 |
| Very bad | Bad | Medium | Good | Very good |

**فیدباکی خوێندکار / قوتابی بۆ کۆرسه‌که‌‌**

**کۆرس:** **مامۆستا:**

**به‌روار:** **ساڵی خوێندن:** 2011-2012

**کۆلێژ:** **به‌ش:**

**زانکۆ:** گه‌شه‌پێدانی مرۆیی

|  |  |  |  |
| --- | --- | --- | --- |
| تێبینی زیاتر– به‌شێوه‌یه‌کی بابه‌تیانه‌ | ئاست (1-5 ) | پرسیاری هه‌ڵسه‌نگاندن | ژ |
|  |  | په‌یام و ئامانجه‌کانی کۆرسه‌که‌‌ ڕوون و ئاشکرابوون؟ | 1 |
|  |  | ناوه‌ڕۆکی بابه‌ته‌کان‌ سوودبه‌خش بوو؟ په‌یوه‌ندی به‌ ئامانجی سه‌ره‌کی کۆرسه‌که‌وه‌ هه‌بوو؟ | 2 |
|  |  | مامۆستای وانه‌بێژ خۆی به‌ په‌رتووکی کۆرسه‌که‌وه‌ ماندوو کردبوو | 3 |
|  |  | ماموستاکه‌ له‌کاتی وانه‌ گوتنه‌وه‌دا هه‌وڵیدا پرنسیپ و ناوه‌ڕۆک وخاڵه‌ گرنگه‌کانی بابه‌ته‌که‌ به‌ جوانی و به‌ ساده‌یی شیبکاته‌وه‌؟ | 4 |
|  |  | مامۆستاکه‌ له‌کاتی خۆیدا هاته‌ وانه‌که‌و له‌ کاتی خۆیدا وانه‌که‌ی ته‌واوکرد؟ | 5 |
|  |  | له‌ کاتی وانه‌ گوتنه‌وه‌دا مامۆستا به‌ هێمنی و نه‌رمی و ڕێزلێنانه‌وه هه‌لسوکه‌وتی کرد؟‌ | 6 |
|  |  | ئه‌و سلایدانه‌ی به‌کارهێنران ڕوون و ئاشکرا و سه‌رنج ڕاکێش بوون؟ | 7 |
|  |  | مامۆستا کاتی پرسیارکردنی هێشته‌وه‌ و هه‌وڵی دا پرسیاره‌کان به‌ تێروته‌سه‌لی وه‌ڵام بداته‌وه‌؟ | 8 |
|  |  | مامۆستاکه‌ گرنگی به‌ ڕه‌خنه‌ و گله‌یی قوتابییه‌ خوێندکاره‌کان ده‌دا | 9 |
|  |  | زانیاری له‌سه‌ر شێوازی تاقیکردنه‌وه‌کان به‌باشی پێشکه‌شکرابوون | 10 |
|  |  | پرسیاره‌کانی تاقیکردنه‌وه‌کان ڕه‌نگدانه‌وه‌ی ناوه‌ڕۆکی کۆرسه‌که‌ بوون | 11 |
|  |  | سه‌رچاوه‌کانی خوێندنه‌وه‌ نوێن و له‌گه‌ڵ ناوه‌ڕۆکی بابه‌ته‌که‌ ده‌گونجێن | 12 |
|  |  | **کۆی ئاسته‌کان** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| پێوه‌ری هه‌ڵسه‌نگاندن | | | |
| 4.1 - 5 | 4 - 3.1 | 3 - 2.1 | 2 - 1 |
| زۆرباش | باش | مامناوه‌ندی | باش نیه‌ |