زانکۆی پۆلیتەکنیکی هەولێر
**ERBIL POLYTECHNIC UNIVERSITY**

# Module (Course Syllabus) Catalogue

# (2022-2023)

| College/ Institute | Erbil Technical Engineering College |
|---|---|
| **Department** | **Information Systems Engineering Department** |
| **Module Name** | **Computer essentials** |
| **Module Code** | **COE103** |
| **Degree** | **Technical Diploma** ☐　　**Bachler** ■<br>**High Diploma** ☐　**Master** ☐　**PhD** ☐ |
| **Semester** | **First Stage \ First sems** |
| **Qualification** | **MSc. in Computer Science\<br>Artificial Intelligence A.I. \<br>Al-Nahrain University\<br>Iraq-Baghdad 1997** |
| **Scientific Title** | **Assist. Lect.** |
| **ECTS (Credits)** | **4** |
| **Module type** | **Prerequisite** ☐　**Core**　**Assist.** ■ |
| **Weekly hours** | **3 hours<br>for each group<br>we have four<br>groups =3+3+3+3 =<br>12 per week** | |
| **Weekly hours (Theory)** | **( 0 )hr Class** | **( 0 )Total hrs Workload** |
| **Weekly hours (Practical)** | **( 3 )hr Class** | **( 3 )Total hrs Workload** |
| **Number of Weeks** | **12** |
| **Lecturer (Theory)** | **Mrs. Najat Yohana Danha** |

| E-Mail & Mobile NO. | [Najat.danah@epu.edu.iq](mailto:Najat.danah@epu.edu.iq) ,07507365870 |
|---|---|
| Lecturer (Practical) | -Bikhtiyar Abdulrahman , Hawkar Jabbar, and tara saleh |
| E-Mail & Mobile NO. | Bikhtiyar.abdulrahman@epu.edu.iq, hawkar.jabar@epu.edu.iq |
| Websites | |

# Course Book

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| **Course Description** | This course is very important to the student in which build a a good scientific base and Establishing the basic principles of the world of computer systems for the student as Provides an overview of current and emerging technologies used in organizations today,with emphasis on :-<br>➢ the main roles that computer systems play in organizations.<br>➢ Principals of computer systems :- Hardware and Software ,<br>Students will demonstrate competency in various systems through hands-on assignments.<br>➢ Explain with examples and implementation for the most important software that information system engineer need daily foxing on:-WORD ,Excel,Power Point .<br> o Microsoft Word is a powerful word processing program that gives users the tools to create a variety of professional documents. Word automatically checks your spelling and grammar and corrects common mistakes. It even lets you insert charts, tables, and pictures into your documents. Microsoft Word is the most widely used and, according to most reviews, the most powerful and user friendly word-processor available.<br>➢<br>➢ This course is designed for computer users of all experience levels. Novice users can use it to learn skills such as formatting text, while advanced users can use it to create their own templates.<br>➢ Information and Communication is divided into two sections. The first section, Information, requires the candidate to understand some of the concepts and terms associated with using the Internet, and to appreciate some of the security considerations. The candidate shall also be able to accomplish common Web search tasks using a Web browsing application and available search engine tools. He or she shall be able to bookmark Web sites, and to print Web pages and search outputs. The candidate shall be able to navigate within and complete Web-based forms. In the second section, Communication, the candidate is required to understand some of the |

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| | concepts of electronic mail (e-mail), together with having an appreciation of some of the security considerations associated with using e-mail. The candidate shall also demonstrate the ability to use e-mail software to send and receive messages, and to attach files to mail messages. The candidate shall be able to organize and manage message folders/directories within e-mail software. (Taken from the ICDL Syllabus.)<br>➤ **Creat an email**<br>➤ **Define and explain the most important phrases in internet and network.** |
| **Course objectives** | **Finally the student can understand :**<br>**1. the main roles that information systems play in organizations.**<br>**2. the four hardware components of a computer, giving examples of each component. Also software .**<br>**3. Identify and provide examples of the two major types of software, and describe how software is created.**<br>**4. Understand and work freely with Excel,Word and Powerpoint**<br>**5. Learn How to creat and work with Gmail.**<br>**6. the major types of networks and the transmission media they use, and give examples of network protocols.** |
| **Student's obligation** | **Student's obligation In this course is:**<br>● **Study all lectures - PDF Files .**<br>● **Attendance in the class for all lect.s.**<br>● **A project :- Poster.**<br>● **Many VERBAL Quizzes.**<br>● **Many UNVERBAL Quizzes.**<br>● **Many H.W.**<br>● **MidTerm And final Theoretical Exams.**<br>● **Many Reports .** |
| **Required Learning Materials** | **I have tried to take advantage of the resources provided by Erbil Technical University to serve students in the best way, through: -**<br><br>● **Publish all lectures on Moodle** **https://moodle.epu.edu.iq/course/view.php?id=543** .<br>● **Many lectures in class For :-**<br>   o **Discusses the Lectures**<br>   o **Ask | Answer Questions** |

- o **Makes pop quizzes .**
- **Discussion including**
  - o **Homeworks H.W.(2) ,**
  - o **Quizes  (2)**
  - o **Reports (1)**
  - o **Presentation POSTER PROJECT (1).**

| | Task | | Weight (Marks) | | Relevant Learning Outcome |
|---|---|---|---|---|---|
| **Evaluation** | Paper Review | | - | | |
| | Assignments | Homework – 2 H.W. | **10%** | | |
| | | Class Activity | **2%** | | |
| | | Report – 2 reports | **16%** | **16%** | |
| | | Project | **16%** | | |
| | Quiz  – 2 quiz's | | **8%** | | |
| | Midterm Exam | | **24%** | | |
| | Final Exam | | **40%** | | |
| | Total | | **100%** | | |

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| **Specific learning outcome:** | 1. Understand The Concept Of A System And How It Relates To Information Systems.<br>2. Identify computer System And Their Components;<br>3. Identify And Give Examples Of The Components And Functions Of A Computer System.<br>4. Identify And Describe The Behaviour Of Systems; Provide Examples Of The Components Of Systems. Illustrate That In An Information System, People Use Hardware, Software, Data, And Networks As Resources To Perform Input, Processing, Output, Storage, And Control Activities That Transform Data Resources Into Information Products.<br>5. Outline The Major Technologies And Uses Of Computer Peripherals For Input, Output, And Storage.<br>6. Describe Several Important Trends Occurring In Computer Software.<br>7. Explain The Purpose Of Several Popular Software Packages For End-User Productivity And Collaborative Computing.<br>8. Define And Describe The Functions Of An Operating System.<br>9. Describe The Main Uses Of Computer Programming Software, Tools, And Languages.<br>10. Work with WORD, Excel and PowerPoint with examples.<br>11. Creating Gmail and deal with network and internet |
| **Course References:** | 1. James A. O'Brien,George M. Marakas ,INTRODUCTION TO INFORMATION SYSTEMS, *Fifteenth Edition.*<br>2. Pual Bocij, Andrew Greasley, and Simon Hickie, Business Information Systems , 14th Edition,<br>3. Ralph M. Stair,George W. Reynolds, Fundamentals of Information Systems, Eighth Edition.<br>4. PATRICIA WALLACE, Introduction Information Systems,Second Edition.<br>5. O'Brien/Marakas, Introduction to Information Systems ,14<sup>th</sup> Edition, McGRAW- Hill.<br>6. © 2010 by CustomGuide, Inc. 3387 Brownlow Avenue, Suite 200; Saint Louis Park, MN 55426.<br>7. Wigand/Mertens/Bodendorf/K?nig/Picot/Schumann:<br>Introduction to Business Information Systems ,Springer, 2003. |

| Course topics (Theory) | Week | Learning Outcome |
|---|---|---|
| Part#1- Introduction to COMPONENTS OF A COMPUTER SYSTEM ( Hardware & Software ) | 1 | -COMPONENTS OF A COMPUTER SYSTEM   :-<br>-COMPUTER HARDWARE<br>   o   What is Computer Hardware?<br>   o   Processing Devices  (The Central Processing Unit (CPU))<br>   o   Memory Devices:-<br>      •   Computer Memory ,<br>      •   Random Access Memory (RAM) ,<br>      •   Read Only Memory (ROM)  and<br>      •   Cache<br>   o   Storage Devices:-<br>      •   Memory versus Storage ,<br>      •   Storage  and<br>      •   Storage Devices<br>   o   Input Devices And  Output Devices<br>-Computer Software<br>   o   What is Software?<br>   o   Categories of Software          :-<br>     A.  System Software<br>      •   Operating  Systems<br>      •   Utility Software<br>      •   Library Programs<br>      •   Programming Language Translators<br>     B.  Application Software<br>      •   General Purpose pplication Software<br>      •   Special Purpose Application Software<br>      •   Bespoke Application Software |
| Part#2 -Windows | 2,3 | -Evaluation of Windows<br>-Popular types of OS<br>-Intro to Windows 10<br>   o   starting Windows:-<br>   o   start menu :-<br>      •   How to use the start menu<br>      •    Using tiles<br>      •   How-to Search<br>      •   Task View<br>      •   Virtual Desktops<br>      •   Snap Enhancements |

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| | | <ul><li>Quick Access Tools</li><li>Personalization and Settings</li></ul>○ Settings in Windows 7 vs Windows 10<ul><li>Settings for System</li><li>Settings for devices</li><li>Personalization</li><li>Accounts</li><li>Time & Language</li><li>Search</li><li>control panel</li></ul>○ Task Bar<br>○ Desktop |
| Part#3 – Microsoft Word | 4,5 | <ul><li>Word Processing  Word 2010</li><li>Program Fundamentals</li><li>Starting Word 2010</li><li>What's New in Word 2010</li><li>Understanding the Word Program Screen</li><li>Giving Commands in Word</li><li>Using Command Shortcuts</li><li>Creating a New Document</li><li>Opening a Document</li><li>Previewing and Printing a Document</li><li>Saving a Document</li><li>Closing a Document</li><li>Using Help</li><li>Exiting Word</li><li>Program Fundamentals Review</li><li>Getting Started with Documents</li><li>Entering and Deleting Text</li><li>Selecting and Replacing Text</li><li>Navigating through a Document</li><li>Viewing Multiple Document Windows</li><li>Getting Started with Documents Review</li><li>Working With and Editing Text</li><li>Checking Spelling and Grammar</li><li>Finding Text</li><li>Replacing Text</li><li>Using Word Count and the Thesaurus</li><li>Inserting Symbols and Special Characters</li><li>Copying and Moving Text</li><li>Controlling How Text is Copied or Moved</li><li>Collecting Multiple Items to Move or Copy</li><li>Using Undo, Redo, and Repeat</li><li>Working With and Editing Text Review</li><li>Formatting Characters and Paragraphs</li></ul> |

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| | | • Changing Font Type<br>• Changing Font Size<br>• Changing Font Color and Highlighting Text<br>• Changing Font Styles and Effects<br>• Using Headers and Footers<br>• Formatting the Page Review<br>• Working with Themes and Styles<br>• Applying a Style<br>• Creating a Style<br>• Modifying and Deleting a Style<br>• Working with the Styles Gallery<br>• Creating a New Quick Style Set<br>• Applying Document Themes<br>• Creating New Theme Colors and Fonts<br>• Save a New Document Theme<br>• Working with Themes and Styles Review<br>• Working with Shapes and Pictures<br>• Inserting Clip Art<br>• Inserting Screenshots<br>• Inserting Pictures and Graphics Files<br>• Removing a Picture's Background<br>• Altering the Look of Pictures and Graphics<br>• Formatting Pictures or Graphics<br>• Inserting Shapes<br>• Formatting Shapes<br>• Resizing, Moving, Copying, and Deleting Objects<br>• Positioning Objects<br>• Applying Special Effects<br>• Grouping Objects<br>• Aligning and Distributing Objects<br>• Flipping and Rotating Objects<br>• Layering Objects<br>• Inserting a Text Box<br>• Working with Shapes and Pictures Review<br>• Working with WordArt, SmartArt, and Charts<br>• Inserting WordArt<br>• Editing WordArt<br>• Formatting WordArt<br>• Inserting SmartArt<br>• Working with SmartArt Elements<br>• Formatting SmartArt<br>• Inserting a Chart<br>• Formatting a Chart<br>• Working with Labels<br>• Formatting Chart Elements |

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| | | • Formatting a Chart Area<br>• Using Chart Templates<br>• Changing Chart Type<br>• Working with WordArt, SmartArt, and Charts Review<br>• Working with Tables<br>• Creating a Table<br>• Working with a Table<br>• Resizing and Moving a Table<br>• Adjusting Table Alignment and Text Wrapping<br>• Working with Cell Formatting<br>• Merging and Splitting Cells and Tables<br>• Inserting and Deleting Rows and Columns<br>• Adjusting Row Height and Column Width<br>• Using Table Drawing Tools<br>• Working with Sorting and Formulas<br>• Working with Borders and Shading<br>• Using Table Styles<br>• Using Table Style Options<br>• Converting or Deleting a Table<br>• Using Quick Tables<br>• Working with Tables Review<br>• …… etc. |
| Part# 4 - Excel | 6,7,8,9 | •<br>• -Program Fundamentals<br>    o Starting Excel 2010<br>• What's New in Excel 2010<br>• Understanding the Excel Program Screen<br>• Giving Commands<br>• Using Command Shortcuts<br>• Creating a New Workbook<br>• Opening a Workbook<br>• Previewing and Printing a Worksheet<br>• Saving a Workbook<br>• Closing a Workbook<br>• Using Help<br>• Exiting Excel<br>• Program Fundamentals Review<br>• Getting Started with Worksheets<br>• Navigating a Worksheet<br>• Entering Labels and Values<br>• Selecting a Cell Range and Entering Data in a Cell Range<br>• Overview of Formulas and Cell References<br>• Entering Formulas |

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| | | • Entering Content Automatically<br>• Referencing External Data<br>• Getting Started with Worksheets Review<br>• Editing a Worksheet<br>• Editing Cell Contents<br>• Copying and Moving Cells<br>• Controlling How Cells Are Moved or Copied<br>• Collecting Items to Move or Copy<br>• Checking Your Spelling<br>• Inserting Cells, Rows, and Columns<br>• Deleting Cells, Rows, and Columns<br>• Using Undo and Redo<br>• Finding and Replacing Content<br>• Adding Comments to Cells<br>• Tracking Changes<br>• Editing a Worksheet Review<br>• Formatting a Worksheet<br>• Formatting Text<br>• Formatting Values<br>• Adjusting Row Height and Column Width<br>• Working with Cell Alignment<br>• Adding Cell Borders and Background Colors<br>• Copying Formatting<br>• Applying and Removing Cell Styles<br>• Creating and Modifying Cell Styles<br>• Using Document Themes<br>• Applying Conditional Formatting<br>• Creating and Managing Conditional Formatting Rules<br>• Finding and Replacing Formatting<br>• Formatting a Worksheet Review<br>• Creating and Working with Charts<br>• Choosing and Selecting the Source Data<br>• Choosing the Right Chart<br>• Inserting a Chart<br>• Editing, Adding, and Removing Chart Data<br>• Changing Chart Data<br>• Changing Chart Layout and Style<br>• Working with Chart Labels<br>• Changing the Chart Gridlines<br>• Changing the Scale |

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| | | <ul><li>Using Chart Templates</li><li>Changing Chart Type</li><li>Using Sparklines</li><li>Creating and Working with Charts Review</li><li>Managing Workbooks</li><li>Using Workbook Views</li><li>Selecting and Switching Between Worksheets</li><li>Inserting and Deleting Worksheets</li><li>Renaming, Moving, and Copying Worksheets</li><li>Splitting and Freezing a Window</li><li>Creating Headers and Footers</li><li>Hiding Rows, Columns, Worksheets, and Windows</li><li>Setting the Print Area</li><li>Adjusting Page Margins and Orientation</li><li>Adding Print Titles, Gridlines, and Row and Column Headings</li><li>Adjusting Paper Size and Print Scale</li><li>More Functions and Formulas</li><li>Formulas with Multiple Operators</li><li>Inserting and Editing a Function</li><li>AutoCalculate and Manual Calculation</li><li>Defining Names</li><li>Using and Managing Defined Names</li><li>Displaying and Tracing Formulas</li><li>Understanding Formula Errors</li><li>Using Logical Functions (IF)</li><li>Using Financial Functions (PMT)</li><li>Using Database Functions (DSUM)</li><li>Using Lookup Functions (VLOOKUP)</li><li>User Defined and Compatibility Functions</li><li>Financial Functions</li><li>Date & Time Functions</li><li>Math & Trig Functions</li><li>Statistical Functions</li><li>Lookup & Reference Functions</li><li>Database Functions</li><li>Text Functions</li><li>Your Organization's Name Here 5 Logical Functions</li><li>Information Functions</li><li>Engineering and Cube Functions</li></ul> |

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| | | • More Functions and Formulas Review<br>• Working with Data Ranges<br>• Sorting by One Column<br>• Sorting by Colors or Icons<br>• Sorting by Multiple Columns<br>• Sorting by a Custom List<br>• Filtering Data<br>• Creating a Custom AutoFilter<br>• Using an Advanced Filter<br>• Working with Data Ranges Review<br>• Working with Tables<br>• Creating a Table<br>• Adding and Removing Data<br>• Working with the Total Row<br>• Sorting a Table<br>• Filtering a Table<br>• Removing Duplicate Rows of Data<br>• Formatting the Table<br>• Using Data Validation Summarizing a Table with a PivotTable<br>• Using the If…Then…Else Statement<br>• Working with Macros Review<br>• Customizing Excel<br>• Customizing the Ribbon<br>• Customizing the Quick Access Toolbar<br>• 270 Creating a Custom Number Format<br>• Customizing Excel Review<br>• Etc. |
| Part #5 – Power Point | 10,11 | • Starting Power Point  2010<br>• What's New in Word 2010<br>• Understanding the PP Program Screen<br>• File menu<br>• Home menu<br>• Insert menu<br>• Draw menu<br>• Design menu<br>• Layout menu<br>• References menu<br>• Review menu<br>• View menu<br>• Etc. |

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| Part#6 - the internet ,Networks, telecommunications, Web , Email and Security | 12 | -Understand and distinguish between the Internet and the World Wide Web (WWW).<br>   o  Define and understand the terms HTTP, URL, hyperlink, ISP, FTP.<br>   o  Understand the make-up and structure of a web address.<br>   o  Know what a Web browser is and what it is used for.<br>   o  Know what a Search Engine is and what it is used for<br>   o  Security Considerations<br>   o  Know what a protected Web site is (use of username and password).<br>o   First Steps with the Web Browser<br>o   -Electronic Mail<br><br>Introduction to  Internet<br>Introduction to Network<br>Intrude. To Email<br>First Steps with E-Mail.<br><br>  ✓ Send & receive digital messages and content over the internet<br>  ✓ Productivity Tool<br>    ✓ Calendar<br>    ✓ Address book<br>  ✓ Web-based email can be accessed anytime & anywhere<br><br>  ➢ Email Addresses -Format:<br>    ➢ Username<br>    ➢ @<br>    ➢ Provider's domain<br>    ➢ Ex. peter101@yahoo.com<br>  ➢ Free Email Account Providers:<br>    ➢ Yahoo<br>    ➢ Microsoft's Hotmail<br>    ➢ Google's Gmail<br>**Setting up a Gmail Account**<br>**Creating a Gmail Account**<br>**Gmail Inbox for your Account**<br>Composing a "New Message"<br>Properly Addressing a Message<br>Draft or Send<br>**Inbox**<br>**Reply or Reply All**<br>Forwarding an Email<br>SPAM or Junk Email<br>Folders or Labels<br>Trash or Deleted Items |

| | Email Etiquette<br>Professionalism in Emailing<br>　　　　Companies are Monitoring<br><br>Online Phishing Scams<br><br>Phishing<br><br>Fraudulent Emails |
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## 19. Examinations:

Q)  Open a new PowerPoint file named "**Midterm**" of 2 slides and save it on **Document** folder.use the same table in Q2 , then add **COMBO Chart**, with title "**Students s' Grades**" with <u>**red**</u> border and <u>**different**</u> coloers for each student as shown bellow.　　　　　　　　　　　　　　　　(10 marks)

| | English | Arabic | Kurdish |
|---|---|---|---|
| Hawkar | 90 | 89 | 99 |
| Bakhtiyar | 67 | 30 | 90 |
| Mina | 98 | 66 | 70 |

| The output |
|---|
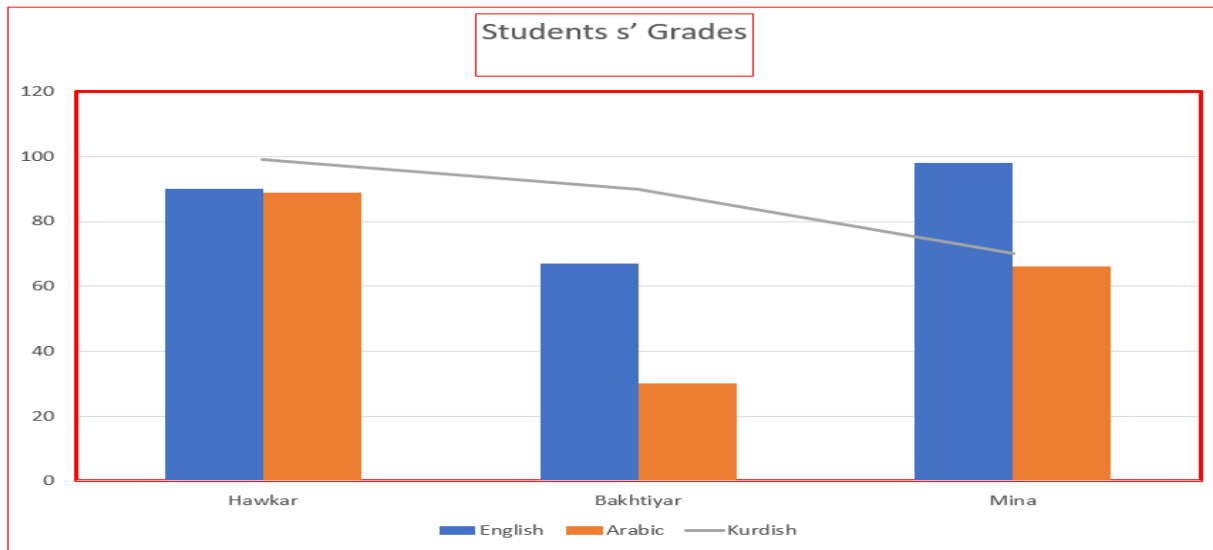
Q) select the right answer:- (10 marks )

1. The …….. is the circuitry that controls the flow of data through the processor, and coordinates the activities of the other units within it     a. ALU    b. RAM     c. CU      d. CPU
2. When a storage device transfers these items from memory to a storage medium (a process called……….), it functions as an output source    a.Writing   b. Reading    c. Printing   d. Traveling
3. The access time of memory devices are measured in…… .
   a. kilometres per hour (km/h)   b. megahertz (MHz)   c.milliseconds    d. kilobyte (KB)
4. Utility Software are type of ……. .
      a. Application Software      b. System Software        c.Operating Systems
      d. General Purpose Application Software
5. The speed at which the processor carries out its operations is measured in ……. .
   a. kilometers per hour (km/h)   b. megahertz (MHz)   c.Milliseconds   d. kilobyte (KB)

Q) suppose a company makes a job interview and 10 persons submit, with the following table of information shown:-
                                              ( 20 marks)

| No | Name | E-Marks | A-Marks | K-Marks | |
|----|------|---------|---------|---------|---|
| 1 | Diler | 90 | 89 | 99 | Gray |
| 3 | Joseph | 67 | 30 | 90 | |
| 4 | Ban | 98 | 66 | 70 | |
| 5 | Fadi | 100 | 60 | 25 | |
| 6 | Najat | 87 | 30 | 80 | |
| 7 | Hawkar | 66 | 70 | 98 | |
| 8 | Bakhtiyar | 56 | 70 | 88 | Blue |
| 9 | Tara | 60 | 80 | 88 | |
| 10 | Mina | 20 | 64 | 76 | |

The Boss ask you to prepare **a report** with the following requirements and restriction, such that: -

   **if The average of(A and K) languages is greater than and equal to 70 <u>AND</u> E-Marks is excellent**
   **then      will be "Accepted" in the job**
   **else      will be " Rejected ".**

Ex: if the boss **enters** "**Diler**" in NAME field, an average 94.0 and a "Accepted" message will appear.

| | | | |
|---|---|---|---|
| | | Report | Yellow |
| Name | Average | The average of (A and K) languages is greater than or equal to 70 and E-Marks is excellent | Gray |
| Diler | 94.0 | accepted | Red |

**Note**:-- Use the same Font type (Times new roman), Bold, and size (14) , borders(Blue for table ,Red for report) ,colors , justifications and design in both table and report and use one sheet only.

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**Q)Define <u>Computer Hardware</u> then explain their main categories (<u>Using Figure</u> ) .**
the Computer Hardware (or simply 'hardware') are The physical equipment's that are involved in the function of the computer are called its hardware.

**Answer :-**
The computer hardware is typically divided into four main categories: Processing Devices, Memory Devices, Input/, Output Devices, and Storage Devices.

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                        ┌─────────────────────┐
                        │  Computer Hardware  │
                        └─────────────────────┘
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| Processing devices | Memory devices | Input/Output devices | Storage devices |
|---|---|---|---|
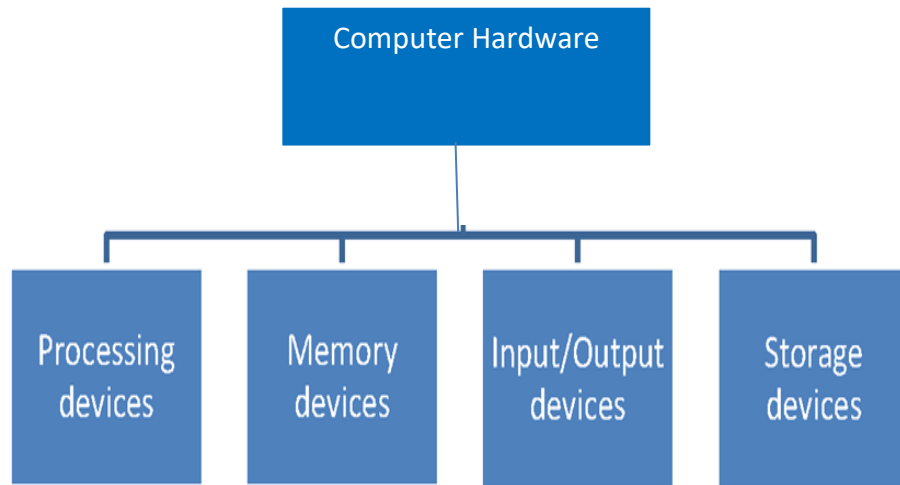
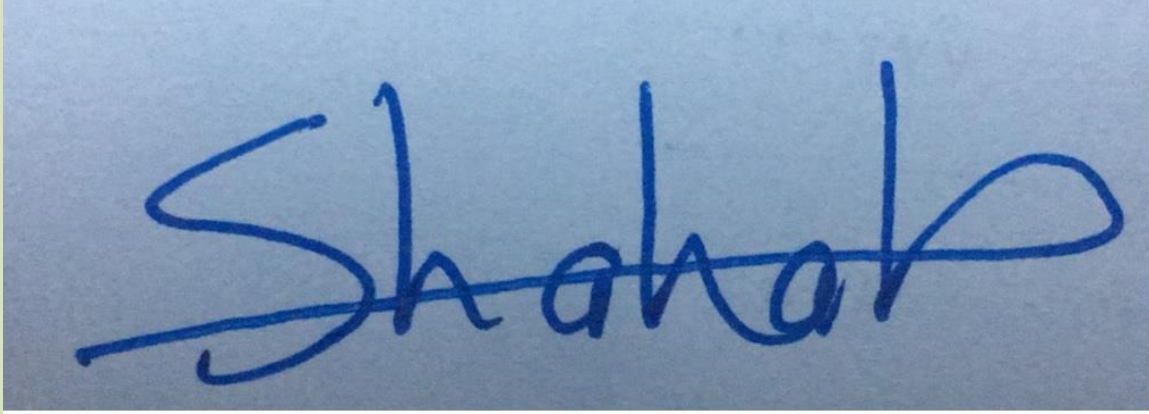**the basic computer architecture and the organization**

**20. Extra notes:**

**Although**
A Lecturer must be ready to take the responsibility of any new subject and meet the department's needs , But, I prefer to work with subjects that are near to my academic speciality ( like Data Structure and Programming Fundamentals by C++ ). That is not fair to the Lecturer and students.

**External Evaluator**

**I confirm that the course book covers all the most important topics that student have to be learned during the year of studying**

**Shahab Wahhab Kareem**