



Second Level

N	Course Name	Evaluation Mechanism	Research Topics	Notes
1	Probability and Statistics	Research Essay	<p>Proposal 1</p> <ol style="list-style-type: none"> 1. Conditional probability. 2. Probability Distributions (Binomial – Normal approximation). 3. Sampling Distribution for the sample mean when the population variance is unknown. 4. Tests of hypotheses concern population mean when the population variance is unknown. <p>Proposal 2</p> <ol style="list-style-type: none"> 1. Bayes Theorem. 2. Probability Distributions (Poisson – Normal). 3. Sampling Distribution for the sample mean when the population variance is known. 4. Tests of hypotheses concern population mean when the population variance is known. 	<p>http://www.fci.bsu.edu.eg/Content.aspx?section_id=11792&cat_id=8</p>
2	Technical writing	Research Essay	<p>Attempt a research paper on one Only of the following topics :</p> <ol style="list-style-type: none"> 1. The importance of language improvement in technical writing. 2. Characteristics of technical writing. 3. Style and tone in technical writing. 4. The importance of studying technical and professional communication. 5. Ethical issues in technical writing. 	<p>ارجوا ان يراعي الطالب ان يحتوي البحث علي :</p> <ol style="list-style-type: none"> ١. المقدمة ٢. اهداف البحث واهميته ٣. خطة البحث ٤. التوصيات والمقترحات ٥. ان يكون حجم الفونت ١٤ ٦. الا يقل البحث عن خمس صفحات ٧. الا يعتمد الطالب علي الاقتباس الا في حدود قليلة وذلك بان يعتمد علي رؤيته الخاصه

3	Numerical Analysis	Research Essay	<p>1- Bisection method, Numerical solution of nonlinear systems of equations (Newton method), Lagrange's interpolation method(with equal intervals).</p> <p>2- Newton- Raphson method, Numerical solution of nonlinear systems of equations (Repetition method), Lagrange's interpolation method(with nonequal intervals).</p> <p>3- Fixed point, Internal interpolation and difference tables, Numerical Differentiation</p> <p>4- Descarte theory, Lagrange's interpolation method, Numerical solution of nonlinear systems of equations (Newton method).</p> <p>5- Horner's method, Newton forward interpolating polynomial, Difference ended.</p> <p>6- Newton backward interpolating polynomial, Fixed point, Numerical solution of nonlinear systems of equations (Repetition method)..</p> <p>7- Numerical Differentiation, Bisection method, Difference ended.</p>	كل جروب لا يزيد عن ٥ طلاب
4	Project Management	Research Essay	<p>1-project management plane and apply it on any project</p> <p>2-what is the PMO and state project as example and how PMO can solve project problems</p>	
5	Computer Architecture	Research Essay	<p>1.Write about register transfer, register transfer language, system bus and different types of micro-operations</p> <p>2.Write about the design of basic computer you have been studied in CH 5 (computer registers, computer instructions, control unit, different types of instructions, and complete computer description)</p> <p>3.Write about programming the basic computer (assembler, program loops, programming arithmetic and logic operations, subroutines and input output programming)</p>	

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Data Structures

Research Essay

1. Customers Management System

Storing of a simple CUSTOMER directory is a core step in a Telecommunication Company management systems. Customer data are stored in a (text) file that contains Contract_ID, Name, Nationality, Phone, Current_Bill_Amount, and Accumulated_Bill_Amount. In such management systems, user wants to be able to insert a new customer, delete an existing customer, search for a customer using Contract_ID or Phone, sort the list of customers based on their names, etc. User also wants to save any changes of the customers list in the data (text) file.

2. Staff Directory

You have a client who wants to store a simple staff directory in her computer that she can use for storage and retrieval of names and office numbers. She has a data (text) file that contains the names and office numbers of her teachers. She wants to be able to insert new names and office numbers, change the number for an entry, and retrieve selected names. She also wants to save any changes in her data (text) file.

3. Employee Management System

Consider employee management system in a company. The employee information such as emp_no, name, salary, department and DOB are required to maintain the employee's data in a text file. In such management systems, user wants to be able to insert a new employee, delete an existing employee, search for an employee using emp_no, sort the list of employees based on their emp_no, etc. User also wants to save any changes of the employee list in the data (text) file.

7	Digital Signal Processing	Research Essay	1-DSP application in medical 2- DSP in agriculture 3-DSP in voice 4-DSP in recognition 5-DSP main properties and mathematic functions 6-DSP in Communications	
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