

**APJ Abdul Kalam Technological University
Thiruvananthapuram**

Abstract

Academics- Syllabus and Minutes of of Curriculum Committee for MCA Bridge Course - approved - orders issued.

ACADEMIC SECTION

U.O.No. 1496/2020/KTU

Thiruvananthapuram, Dated: 02.11.2020

*Read:-*1.Minutes of the MCA Curriculum Committee held on 3rd October 2020
2. Minutes of the meeting of the Tenth Academic council vide item No 10.04.07

ORDER

Vide ref read as (1) above, the Curriculum committee have finalised the syllabus of Bridge course for the first year students of MCA programme 2020-21.

As per the ref read (2) above, the Academic Council resolved to approve the recommendation of the Curriculum committee for MCA Bridge course syllabus.

The approved syllabus of MCA Bridge course is attached herewith.

Orders are issued accordingly.

Sd/-

Dr. Bijukumar R *
Dean (Academic) in Charge

Copy to:-

- 1.Ps to VC/PVC/Registrar/CE
- 2.The Principal of all affiliated colleges
- 3.Dean(Academic)
- 4.JD(Academic)/JD(IT)

* This is a computer system (Digital File) generated letter. Hence there is no need for a physical signature.



KTU MCA Bridge Course Syllabus (2020-21)

This is a basic course and the student is expected to review and understand the concepts so that he can apply it to real life problems. Some indicative resources are given as references.

Review of C Programming & Data Structures

Algorithm, Pseudocode, Structured Programming, Introduction to C Language, Operators and expressions, Data input and output, Control statements, Functions, Arrays, Familiarity with Structures, Pointers, Linked List, Familiarity with Stack and Queue Data Structures.

Online resources suggested

1. <https://www.edx.org/course/programming-basics-iitbombayx-cs101-1x>
2. <http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-087-practical-programming-in-c-january-iap-2010/>

Reference Books

1. Byron S Gottfried, "Programming with C", Schaum's outline, 3 rd Edition, McGraw Hill
2. Brian W Kernighan & Dennis Ritchie, "The C programming language", 2 nd Edition, Prentice Hall (2015)

Review of Operating Systems

Overview of operating systems, functionalities and characteristics of OS.
The concept of a process, operations on processes, process states, concurrent processes, process control block, process context. Processor scheduling, scheduling algorithms
Problems of concurrent processes, critical sections, mutual exclusion, synchronisation, producer and consumer processes, deadlock. Interprocess Communication (IPC)
Memory organisation and management, storage allocation. Virtual memory concepts
File organisation: blocking and buffering, file descriptor, directory structure

Reference Books

- A. Silberchatz et.al., "Operating System Concepts", 9 th Edition Wiley (2015)

Online resources suggested

<https://www.coursera.org/learn/os-power-user>



Review of Mathematics

Review of basic single variable calculus : functions, limit, derivatives, integrals.

Essentials of Linear algebra : scalar vectors, linear combinations span and basis. linear independence. Matrices, matrix operations, scalar multiplication, vector multiplication, inverse and transpose, dot product, cross product, eigen values and eigen vectors.

Introduction to probability, experiments, outcome, events, sample space and probability, Random variables, probability distributions, binomial distribution, normal distribution, central limit theorem.

Real Number System, Linear inequalities, Sets, Relations, Functions, Permutations and Combinations, Prime numbers, Polynomials.

Online resources suggested

<https://www.youtube.com/playlist?list=PLZHQObOWTQDMsr9K-rj53DwVRMYO3t5Yr>Essence of calculus

https://www.youtube.com/playlist?list=PLZHQObOWTQDPD3MizzM2xVFitgF8hE_ab

<https://www.youtube.com/watch?v=LYCwHcHRhCg&list=PLKc2XOQp0dMwj9zAXD5LIWpriIXIrGaNb>

<https://www.khanacademy.org/math/statistics-probability/probability-library>

Reference Books

Mathematics for Economics and Business, [Ian Jacques](#), Pearson Education Limited

EXAMINATION PATTERN

The examination is MCQ based, 90 minutes duration and be conducted at the end of second semester. The question paper contains 60 questions, 20 questions from each of the three subjects included in the syllabus.

