

KRISHNASAMY

College of
ENGINEERING & TECHNOLOGY

Approved by AICTE & Affiliated to Anna University
Anand Nagar, Nellikuppam Main Road, S. Kumarapuram, Cuddalore - 607 109, Tamil Nadu.
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DEPARTMENT OF CSE

Date: 14.12.2021

CIRCULAR

Ref.: KCET/CSE/VAC/CIRCULAR/2021-22/01.

The following Value Added Course will be conducted during the academic year 2021-2022. The course will be conducted from 22.02.2022 to 26.02.2022. Students are instructed to register their names in the course allotted to them.

Note: Students are instructed to attend the program without fail.

S.No.	Course Code	Name of the Course	Year	No. of Period	Course Coordinator
1	CS-VAC2101	UNIX INTERNALS	IV	30	Ms.C.Reikha, AsP / HOD - CSE
2	CS-VAC2102	SYSTEM SOFTWARE	III	30	Mrs.P.M.Kamatchi, AP – CSE Mrs.P.Vijaya Sarathy, AP - CSE

C. Rajendran
14/12/21
HOD/CSE

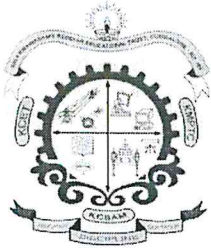
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Department of Computer Science & Engineering

SYLLABUS

Subject Code/ Subject Name: CS-VAC2102 – SYSTEM SOFTWARE

Duration: 30 Hours

COURSE OBJECTIVES

- To understand the relationship between system software and machine architecture.
- To know the design and implementation of assemblers
- To know the design and implementation of linkers and loaders.
- To have an understanding of macroprocessors.
- To have an understanding of system software tools.

MODULE I INTRODUCTION 8

System software and machine architecture – The Simplified Instructional Computer (SIC) - Machine architecture - Data and instruction formats - addressing modes - instruction sets - I/O and programming.

MODULE II ASSEMBLERS 7

Basic assembler functions - A simple SIC assembler – Assembler algorithm and data structures - Machine dependent assembler features - Instruction formats and addressing modes – Program relocation .

MODULE III LOADERS AND LINKERS 8

Basic loader functions - Design of an Absolute Loader – A Simple Bootstrap Loader - Machine dependent loader features - Relocation – Program Linking – Algorithm and Data Structures for Linking Loader - Machine-independent loader features – Automatic Library Search – Loader Options - Loader design options - Linkage Editors – Dynamic Linking – Bootstrap Loaders - Implementation example - MSDOS linker.

Basic macro processor functions - Macro Definition and Expansion – Macro Processor Algorithm and data structures - Machine-independent macro processor features - Concatenation of Macro Parameters – Generation of Unique Labels – Conditional Macro Expansion – Keyword Macro Parameters-Macro within Macro-Implementation example - MASM Macro Processor – ANSI C Macro language.

TOTAL: 30 PERIODS

COURSE OUTCOMES:

- Understand the fundamentals of system software.
- Learn the basics of macro processor.
- Understand the system software tools.

TEXT BOOK:

1. Leland L. Beck, “System Software – An Introduction to Systems Programming”, 3rd Edition, Pearson Education Asia, 2006.

REFERENCES:

1. D. M. Dhamdhare, “Systems Programming and Operating Systems”, Second Revised Edition, Tata McGraw-Hill, 2000.
2. John J. Donovan “Systems Programming”, Tata McGraw-Hill Edition, 2000.
3. John R. Levine, Linkers & Loaders – Harcourt India Pvt. Ltd., Morgan Kaufmann Publishers, 2000

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