DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

(Academic Year 2019 -2020)

02.12.2019

CIRCULAR

It is planned to conduct a value added course for III & IV year Computer Science & Engineering students on the subject given below. Each module is scheduled from 13.12.2019 to 19.12.2019. The course plan, test procedure, attendance are followed as per regulation 2013. It is highly advised that the students should attend all the sessions and get benefited of the course.

The syllabus for the same has been formulated and will be circulated to students. The eminent staff from our department is invited to give lectures on topics from syllabus.

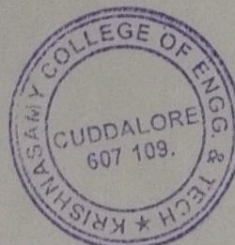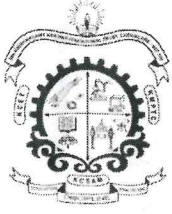| S.No	Year	Code/Name of the subject	Duration in Hours	Subject Incharge
1	IV	CS-VAC1901- Loader and Linker	30	Er.S.Ramesh AP/CSE
2	III	CS-VAC1902 – Visual Programming	30	Er.R.Shenbagavalli AP/CSE

C.Rejth 4/12/19
HOD

4/12/2019
VICE - PRINCIPAL

4/12/19
PRINCIPAL

Copy to:

Class Room

Class In charge

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

(Academic Year 2019-2020)

<u>SYLLABUS</u>

Subject Code/ Subject Name: CS-VAC1901- **Loader & Linker**

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   LOADERS   7

Basic assembler functions - A simple SIC assembler – Assembler algorithm and data structures - Machine dependent assembler features - Instruction formats and addressing modes – Program relocation. Basic loader functions - Design of an Absolute Loader – A Simple Bootstrap Loader - Machine dependent loader features – Relocation.

MODULE III   LINKERS   8

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.

MODULE IV   MACRO PROCESSORS

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. Dhamdhere, "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

C.Rajitha
4/12/19
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