SEMESTER S8

SYSTEM SOFTWARE

Course Code	PEERT 863	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:0:0:0	ESE Marks	60
Credits	3	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	None	Course Type	Theory

Course Objectives:

1. Students will be able to understand the basic concepts and use of system software and application software.
2. Students will understand the machine dependent and machine independent system software features and to design/implement system software.

KTU SPECIAL

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Systems Programming – Background, System software and Application Software.System software-Basic Concepts of Assemblers, Loaders, Linkers, Macro processors, Text editorsSIC & SIC/XE Architecture and Programming.	9
2	Assemblers – Basic assembler directives, machine dependent assembler features, machine independent assembler features, Object code generation of SIC and SIC/XE. Assembler design options – one pass assembler, multi pass assembler	9
3	Loaders and Linkers - Basic loader functions, machine dependent loader features, machine independent loader features. Loader design options – linkage editors, dynamic linking, bootstrap loaders	9
4	Macro processors – Basic macro processor functions, machine dependent and machine independent macro processor features, Design options. Device drivers - Anatomy of a device driver, Character and block device drivers, General design of device drivers. Text Editors- Overview of Editing,	9

	User Interface, EditorStructure. Debuggers - Debugging Functions and Capabilities, Relationship with other parts of the system, Debugging Methods- By Induction, Deduction and Backtracking	

Course Assessment Method

(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/ Microproject	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	15	10	10	40

End Semester Examination Marks (ESE)

KTU SPECIAL

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks **(8x3 =24marks)**	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. **(4x9 = 36 marks)**	**60**

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Understand different System Software.	**K2**
CO2	Analyse machine architecture with its instruction sets and capable to do programming	**K3**
CO3	Identify machine dependent and independent features of system software	**K3**
CO4	Design algorithms for system software and analyse the effect of data structures.	**K3**
CO5	Understand the features of device drivers and editing & debugging tools.	**K2**

Note*: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create*

CO-PO Mapping Table (Mapping of Course Outcomes to Program Outcomes)

KTU SPECIAL

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2									2
CO2	2	3	3									2
CO3	2	2	2									2
CO4	2	2	3									2
CO5	2	1	1		3							2

Note: *1: Slight (Low), 2: Moderate (Medium), 3: Substantial (High), -: No Correlation*

Text Books				
Sl. No	**Title of the Book**	**Name of the Author/s**	**Name of the Publisher**	**Edition and Year**
1	System Software: An Introduction to Systems Programming	Leland L. Beck	Pearson Education Asia	3/E

Reference Books				
Sl. No	**Title of the Book**	**Name of the Author/s**	**Name of the Publisher**	**Edition and Year**
1	Systems Programming and Operating Systems	D.M. Dhamdhere	Tata McGraw Hill	Second Revised Edition
2	Systems Programming	Donovan J. J	Tata McGraw Hill	2/e
3	System Software	J Nithyashri	Tata McGraw Hill	Second Edition
4	IBM PC Assembly Language and Programming	Peter Abel	Prentice Hall of India	Third Edition

KTU SPECIAL