COURSE DESCRIPTION FORM

INSTITUTION   National University of Computer and Emerging Sciences

PROGRAM (S) TO BE EVALUATED   BS in Computer Science

A. Course Description

(Fill out the following table for each course in your computer science curriculum. A filled-out form should not be more than 2-3 pages.)

Course Code	CS-2005
Course Title	Operating Systems
Credit Hours	3+1
Prerequisites by Course(s) and Topics	Data Structures
Assessment Instruments with Weights (homework, quizzes, midterms, final, programming assignments, lab work, etc.)	Assignments: 10 Quizzes: 15 Mid Terms: 30 Final: 45
Course Coordinator	Dr. Rana Asif Rehman
URL (if any)	
Current Catalog Description	
Textbook (or **Laboratory Manual** for Laboratory Courses)	Operating Systems (10th Edition) by Abraham Silberschatz et al.
Reference Material	Modern Operating System, Author (s): Tenenbaum Operating Systems, Author (s): William Stallings
Course Goals	1. Understanding components of an operating systems 2. Learn how the Operating systems evolved 3. Learning thread programming and memory management 4. Understanding the problems that are faced in process execution when shared resources are involved 5. Develop understanding of organization and structure of file system 6. Providing the knowledge for algorithms and data structures used in development of an OS.

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Topics Covered in the Course, with Number of Lectures on Each Topic (assume 15-week instruction and one-hour lectures)	Introduction, Overview & Organization (2) Interrupts & Processes (3) PCB, Process Creation & Fork Semantics (2) IPC, Pipes & Signals (2) CPU Scheduling (2) Threads & Posix Threads (2) Synchronization, Busy Waiting & Bakery Algorithms (2) Semaphores, Readers Writers, Dining Philosophers (3) Deadlocks (2) Memory Management & its Data Structures (2) Paging, Memory Management Policies (2) Virtual Memory (3) File System Interface & Implementation (3)
Laboratory Projects/Experiments Done in the Course	
Programming Assignments Done in the Course	Processes 1 Threads 1 Process Synchronization 1 Filing 1

Class Time Spent on (in credit hours)	**Theory**	**Problem Analysis**	**Solution Design**	**Social and Ethical Issues**

Oral and Written Communications	Every student is required to submit at least _____ written reports of typically _____ pages and to make _____ oral presentations of typically _____ minute's duration. Include only material that is graded for grammar, spelling, style, and so forth, as well as for technical content, completeness, and accuracy.

Instructor Name: **Dr. Rana Asif Rehman**

Instructor Signature: _____

       Date: **15-09-2021**

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