CECOS UNIVERSITY OF INFORMATION TECHNOLOGY & EMERGING SCIENCES, PESHAWAR
DEPARTMENT OF COMPUTER SCIENCES

Programs: BSCS & BSSE	Course Code:
Course Title: Capstone Project - I	Credit Hours: 03

Prerequisite:
- Min. 80 Credit Hours (Course Work)

Course Objectives:
- This project engages the students with real world complexities and help them to enhance their competencies and skill related to strategic thinking, communication, managing information and choosing among alternatives.

- Capstone Project allows the student to identify and develop a project that puts into practice the leadership skills and competencies learned during the courses of study.

Teaching Methodology:
- Lectures, group discussions, animations and videos, Assignments, and Workshops.

Course Evaluation:
1. Proposal Submission (4th Week) – 10 Marks
2. Proposal Defense (8th Week) – 20 Marks
3. Proposal Presentation (15th Week) – 20 Marks
4. Report Thesis – I | Ch 1 to 4 (15th Week) – 5 Marks
5. Supervisor Evaluation | 8 Meetings (15th Week) – 25 Marks

Capstone Semester Plan:

Week No.	Topics Covered	Activity Type	Detail	Date	Time (Every Thursday)
1	**No Activity due to 1st Week of Semester**				
2	Introduction	Seminar @Symposium Hall	• Introduction • Capstone Project – I	31.10.24	11:30 am to 1:00 pm

3	Latex Software	Workshop for Capstone – I Lab Activity	• Report Writing Techniques
			  • Installation
			  • First Document
			  • Document Structure
			  • Packages
			  • Math
			  • MS Word
			  • One Note
			  • Mendeley
			  • Microsoft Visio
				07.11.24	11:30 am to 1:00 pm

4	Software Requirement Specifications (SRS)	Lecture for Capstone – I Lab Activity	• Introduction
			• Testing A
			  • Acceptance
			  • Accessibility
			  • Ad hoc
			  • Alpha
			  • Anomaly etc.
			• Testing B
			  • Behavior
			  • Benach Mark
			  • Breadth
			  • Bug
			• Testing up to Z
				14.11.24	11:30 am to 1:00 pm

5	System Design Document (SDD) Architecture Diagram	Workshop for Capstone – I Lab Activity	• Title Page • Introduction • Referenced Documents • System Overview • Design Considerations • System Architecture • Data Design • Human-Machine Interface • Operational Scenarios • Detailed Design • System Integrity Controls • External Interfaces	21.11.24	11:30 am to 1:00 pm
6	Python	Workshop for Capstone – I Lab Activity	• Introduction • Environments Setup • Variables • Data Types • Type Casting • Operators • Control Statements • Python Functions and Module • List, String, Tuples, Sets, Dictionary and array	28.11.24	11:30 am to 1:00 pm

			• OOP Concepts		

7	Entrepreneurship	Seminar for Capstone – I & University @Symposium Hall	• Entrepreneurship Skills
			  • Introduction
			  • Types, Roles, Motivation, Goal-Setting Strategies etc.
			• Entrepreneurship Development
			  • Enterprise and Society, Quality, Mind Vs Money, Process etc.
				05.12.24	11:30 am to 1:00 pm

8	**No Activity due to Mid Term**				
9	**No Activity due to Mid Term**				
10	Gen AI	Workshop for Capstone – I and CS Department @Hall	• GAN vs Diffusion Models • GenAi • Data and Healthcare • Ethical Aspects of GenAi	26.12.24	11:30 am to 1:00 pm
11	Cyber Security	Lecture for Capstone – I and CS Department @Hall	• Introduction • Basics of Cyber Technology • Aims and Gools • Types of Cyber Attacks • Keyloggers, Dark Web, VPN, Policies, Standards, Tools, Challenges, Risk Analysis, and Applications • Cyber Security Resources	02.01.25	11:30 am to 1:00 pm
12	Security	Guest Lecture for Capstone – I and CS Department @Hall	• What is Software Security? • What are the threats to Software? • Importance of Software Security • Issues Related to Software Security • Types of IT Security • Tools for Software Security • Software Security vs. Cyber Security • Best Practices for Software Security	09.01.25	11:30 am to 1:00 pm
13	Industry	Workshop	• Startup ventures or product development in key strategic areas like Sensors, Biomedical Devices, Big Data, Cyber security, but not limited to these. • Current business opportunities and challenges • Different types of product development and	16.01.25	11:30 am to 1:00 pm

			marking challenges, and how to leverage them for developing new transformative business ideas • Different startup opportunities; Critical and transformative areas for business development • Challenging and transformative ideas for business development • How to pitch venture ideas; interactions with CEO and CTO from a daily and engineering perspective • How to write a successful business plan; a review or personal experience about the growth of different startups		4
14	Industry	Visit	Study Tour	23.01.25	11:30 am to 1:00 pm
15	**No Activity due to Final Term**				
16	**No Activity due to Final Term**				

Approved By:

HoD CS Department