

# Swami Vivekanand Subharti University, Meerut

## *Subharti Institute of Engineering & Technology*

### Department of Computer Science and Engineering

#### (ODD SEMESTER)

##### Program Education Objectives (PEOs)

###### PEO-1:

To prepare graduates who will be successful professionals in industry, government, academia, research, entrepreneurial pursuit and consulting firms

###### PEO-2

To prepare graduates who will contribute to society as broadly educated, expressive, ethical and responsible citizens with proven expertise.

###### PEO-3

To prepare graduates who will achieve peer-recognition; as an individual or in a team; through demonstration of good analytical, design and implementation skills

###### PEO-4

To prepare graduates who will thrive to pursue life-long learning to fulfil their goals.

##### Program Outcomes (POs)

###### PO 1 :

**Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

###### PO 2:

**Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO 3:**

**Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**PO 4:**

**Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

**PO 5:**

**Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

**PO 6:**

**The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

**PO 7:**

**Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO 8:**

**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO 9:**

**Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO 10:**

**Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO 11:**

**Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PO 12:**

**Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**PSO 1:**

Able to apply the knowledge gained during the course of the program from Mathematics, Basic Computing, Basic Sciences and Social Sciences in general and all electrical courses in particular to identify, formulate and solve real life problems faced in industries and/or during research work.

**PSO 2:**

Able to provide socially acceptable technical solutions to complex electrical engineering problems with the application of modern and appropriate techniques for sustainable development

**PSO 3:**

Able to apply the knowledge of ethical and management principles required to work in a team as well as to lead a team.

**Subject Name: VIRTUALIZATION AND CLOUD COMPUTING (MCS-103)**

**Course Outcomes (COs)**

CO1	The Student should be able to know about benefits and business scenarios of cloud.
CO2	The student should be able to understand the different service models.
CO3	The Student should be able to know about virtualization and virtual infrastructure.
CO4	The Student should be able to know about the security of cloud.
CO5	The Student should be able to understand the tools of data security.

**SUBJECT NAME: NETWORKING PROTOCOL**

**SUBJECT CODE: MCS-113**

**BRANCH/YEAR/SEMESTER: Cyber Sec/1/1**

**COURSE OUTCOME:**

CO1	To be able to define the characteristics and limitations of mobile hardware devices including their user interface modalities.
CO2	To be able to develop applications that is mobile device specific and demonstrates current practice in mobile computing context.
CO3	To be able to explore the strengths and limitations of different types of mobile/wireless networks.
CO4	To be able to analyze the performance of different hand-off, roaming and location update algorithms for cellular networks.
CO5	To be able to describe the basic issues and problems in current trends of mobile computing..



**SUBJECT NAME: Research Methodology& IPR**

**SUBJECT CODE: METC-101**

**BRANCH/YEAR/SEMESTER: Cyber/1st /1<sup>st</sup>**

**COURSE OUTCOMES (COs)**

CO1	Adopt various principles and concepts of research methodology to their research problems.
CO2	Apply appropriate method of data collection and analyze using statistical methods.
CO3	Formulate research methodology for a given engineering and management problem situation.
CO4	Analyze research outputs in a structured manner and prepare report as per the technical and ethical standards.

**SUBJECT NAME: INFORMATION SECURITY AND RISK MANAGEMENT**

**SUBJECT CODE: MCS-121**

**BRANCH/YEAR/SEMESTER: Cyber/1st /1<sup>st</sup>**

**COURSE OUTCOMES (COs)**

CO1	Identify the security threats and attacks.
CO2	Analyze the mechanism to assess and control risk.
CO3	Describe the types of security policies and standards.

**SUBJECT NAME: Legal Dimension of IPR in Cyber World**

**SUBJECT CODE: MCS-101**

**BRANCH/YEAR/SEMESTER: Cyber/1st /1<sup>st</sup>**

**COURSE OUTCOMES (COs)**

CO1	To understand the basic concepts of the cyber world and to trace the origin and development of the cybercrimes
CO2	To examine critically the position of intellectual property rights in cyber space.
CO3	To analyze the principles of jurisdiction in cyber offences and to discuss comprehensively the concept of electronic evidence.

**SUBJECT NAME: Object oriented programming in C++**

**SUBJECT CODE: MCS-102**

**BRANCH/YEAR/SEMESTER: Cyber/1st /1st**

**COURSE OUTCOMES (COs)**

CO1	To Apply Object Oriented Programming concepts.
CO2	To understand the special features of C++ Programming Language
CO3	To Analyze existing procedure oriented software's to object oriented based ones.

**SUBJECT NAME: DISASTER MANAGEMENT**

**SUBJECT CODE: METC-112**

**BRANCH/YEAR/SEMESTER: CSE/1<sup>st</sup>/1<sup>st</sup>**

**COURSE OUTCOMES (COs)**

CO1	To increase the knowledge and understanding of the disaster phenomenon and, its factors.
CO2	Understand the relationship of hazard, risk and vulnerability
CO3	To obtain the skills in role of education and training in disaster prevention
CO4	To ensure skills in post disaster management activities.
CO5	To get the knowledge in understanding various prone zones in India

**SUBJECT NAME: Security Lab-I**

**SUBJECT CODE: MCS-151**

**BRANCH/YEAR/SEMESTER: Cyber/1st/1st**

**COURSE OUTCOMES (COs)**

CO1	Identify Vulnerabilities in a Network
CO2	Solve Problems using various Algorithms
CO3	Identify Various Attacks and Formulate Defence Mechanism.
CO4	Understand Web And DNS Security

**SUBJECT NAME: DATABASE MANAGEMENT SYSTEM**

**SUBJECT CODE: CSC-301**

**BRANCH/YEAR/SEMESTER: CYBER/2<sup>nd</sup>/3<sup>rd</sup>**

**Course Outcomes (COs)**

CO1	To study the Physical and Logical Database Design, Database Modelling Relational Hierarchical and Network Model.
CO2	To understand and use Data Manipulation language to query, Update and Manage a Database.
CO3	To study of Memory structure and stored procedures in SQL.
CO4	To understand the concepts of Functional dependency and Normalization.
CO5	To develop an understanding of essential DBMS concepts such as Database Security, Concurrency Control and distributed Database.

**SUBJECT NAME: CRYPTOGRAPHY**

**SUBJECT CODE: CFO-302**

**BRANCH/YEAR/SEMESTER: Cyber/2<sup>nd</sup> /3<sup>rd</sup>**

**COURSE OUTCOMES (COs)**

CO1	Students will be able to explain basic concepts and algorithms of cryptography, including encryption/decryption.
CO2	Students will be able to solve and relate mathematic concepts behind the cryptographic algorithms.
CO3	Students will be able to describe various network security practice applications and protocols.
CO4	Students will be able analyze protocols for various security objectives with cryptographic tools
CO5	Students will be able to evaluate the role played by various security mechanisms and advance cryptographic techniques



**SUBJECT NAME: Minor Dissertation**

**SUBJECT CODE: CFL-351**

**BRANCH/YEAR/SEMESTER: Cyber/2nd /3rd**

**COURSE OUTCOMES (COs)**

CO1	Identify and Finalize problem statement by surveying variety of domains.
CO2	Perform requirement analysis and identify design methodologies
CO3	Apply advanced programming techniques.
CO4	Present technical report by applying different visualization tools and Evaluation metrics

**SUBJECT NAME: Seminar Based on Industrial Training**

**SUBJECT CODE: CFL-352**

**BRANCH/YEAR/SEMESTER: Cyber/2nd /3rd**

**COURSE OUTCOMES (COs)**

CO1	Collect, Organize & Analyze information about emerging technologies /market demands/current trends.
CO2	Exhibit effective communication skills, stage courage, and confidence.
CO3	Demonstrate intrapersonal skills.
CO4	Awareness in keeping with new innovations and inventions

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**(EVEN SEMESTER)**

**SUBJECT NAME: Cyber Incident Handling & Reporting**

**SUBJECT CODE: MCS-211**

**BRANCH/YEAR/SEMESTER: Cyber/1st/2nd**

**COURSE OUTCOMES (COs)**

CO1	The course is designed to provide the fundamental skills to handle and respond to the computer security incidents in an information system.
CO2	It addresses various underlying principles and techniques for detecting and responding to current and emerging computer security threats
CO3	Able to understand various attacks and handling these attacks

**SUBJECT NAME: Mobile and Wireless Network Security**

**SUBJECT CODE: MCS-202**

**BRANCH/YEAR/SEMESTER: Cyber/1st /2nd**

**COURSE OUTCOMES (COs)**

CO1	Enables the students to analyze and compare the various wireless communication technologies.
CO2	Enables the students to visualize the various important steps in GSM communication Stream flow measurements technique.
CO3	Enables the students to analyze the mobile IP and Transport Protocol.
CO4	Enables the students to examine the important aspects of Mobile Adhoc Network
CO5	Enables the students to apply the knowledge about WIMAX, WLAN.