



SCHOOL OF ENGINEERING & TECHNOLOGY

COURSE FILE

Program: Cyber Forensics
Course Code: CSE4708
Course Title: Cyber Forensics
Module Semester: 7th Sem
Session: 2021

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1. Course Details

- Course Code: CSE4708
- Course Title: Cyber Forensics
- **Module/Semester: 7th Sem**
- Session: 2021

2. Vision, Mission of the University

Vision

BML Munjal University seeks to nurture ethical leaders who are skilled, knowledgeable and have the life skills required for leading their organizations to success. The university shall seek the advancement and dissemination of practically oriented knowledge benchmarked with the best global standards.

Mission

BML Munjal University aims to be a leading university for the quality and impact of its teaching, research and linkages with major stakeholders. The focus of the university is to find creative solutions to problems through application of knowledge. The university aims to create a talented community of students and faculty who excel in teaching, learning and research, in a creative and stimulating environment. The university will collaborate with other institutions for development of science, technology and arts in the global context.

3. Graduate Attributes

- Acquire and apply practical understanding of discipline knowledge.
- Demonstrate a sense of ethics and display excellence in both personal and professional life.
- Exhibit problem solving, critical thinking skills and investigative capability to address real world problems.
- Manifest leadership qualities and work effectively in teams across globally diverse environments.
- Be a lifelong learner with an entrepreneurial mindset to innovate in the constantly changing global scenario.
- Possess a strong sense of inquiry and design innovative solutions for positive societal impact.
- Be effective communicators and possess an empathetic outlook.

4. Vision, Mission of the School

Vision of School:

To be amongst the leading engineering schools of the country recognized globally for excellence in teaching and research with focus on experiential learning, innovation and entrepreneurship.

Mission of School:

- * Providing high-quality learning experience to our students, preparing them to be global leaders, and contributing to the development of society through research, innovation, and entrepreneurship.
- * Creating an inclusive and diverse learning environment that fosters creativity, critical thinking, and ethical values.
- * Collaborating with industry, government, and other institutions to address complex societal challenges and promote sustainable development.

5. PEOs and POs & PSOs of the Program

Program Educational Objectives (PEO):

- a) PEO 1: Identify real-life problems and develop creative and innovative hardware/software-based solutions.
- b) PEO 2: Achieve professional development through self-learning to adapt to the technological changes in the ever changing field of computing.
- c) PEO 3: Engage in life-long learning of computer engineering technologies, critical thinking and continuous ingenuity and apply them in real-life applications.
- d) PEO 4: Accomplish leadership roles by imbibing ethics and professionalism with emphasis on sustainable development of the society.

Program Outcomes (PO):

- e) PO1: Apply the foundational concepts of mathematics, science and computer engineering to find novel solutions for complex real-life engineering problems.
- f) PO2: Identify, formulate, review literature and analyze complex computer engineering problems reaching substantiated conclusions and derive a coherent logic that can be implemented by computers.
- g) PO3: Design analytical and computational models for solving complex engineering problems giving due consideration to issues related to public health and safety, cultural and societal constraints, and environmental concerns.
- h) PO4: Use research-based knowledge, methods, tools and techniques for data collection, designing digital computing systems, analyzing and interpreting the results to provide substantiated conclusions.
- i) PO5: Use appropriate tools to model complex computer engineering problems through identification of the limitations and creating solutions to predict the real-world phenomena.
- j) PO6: Use appropriate contextual knowledge of computer engineering to review and assess societal, health, legal, cultural, safety and contemporary issues and rationalize the ensuing responsibilities towards the society.
- k) PO7: Adopt computer engineering practices in congruence with societal need, understand the working practices and its impact on natural resources for sustainable development.
- l) PO8: Use ethical principles to pursue excellence in developing computer engineering systems and behave appropriately to develop a reliable and trustworthy relationship with others.
- m) PO9: Function effectively as a reliable and responsible individual, and as a member or leader in diverse computer engineering teams, and in multidisciplinary settings, thereby placing team goals ahead of individual interests.
- n) PO10: Communicate effectively by capturing the desirable computer system requirements for preparation of specification documents, write clear and concise report such as laboratory files, research papers, thesis, and presentation materials.
- o) PO11: Demonstrate knowledge of computer engineering and management principles for the completion of individual or group projects in multidisciplinary environments.
- p) PO12: Recognize the evolving technological changes and engage as an independent and life-long learner in both computing and non-computing fields.

Program Specific Outcomes (PSO):

- q) PSO1: Identify applicable tools and techniques related to data science practice such as data

collection, cleaning, analysis, modelling, evaluation and result interpretation and apply them for deriving hidden and meaningful patterns for appropriate actionable insights.

- r) PSO2: Develop intelligent systems for various real-life domains like healthcare, transportation, finance etc. using Artificial Intelligence methodologies.
- s) PSO3: Understand the foundational concepts and techniques to protect computing systems against constantly evolving cybersecurity threats and analyze security breaches and violations of cyber systems and networks to provide appropriate solutions.
- t) PSO4: Design effective security systems to mitigate risks, threats and vulnerabilities for protecting the organizations against cyber threats.

6. Course Description and its objectives

Cyber Forensics is a core elective course in computer science and engineering and computer science undergraduate program. This course focuses on understanding Computer Forensics, Computing Investigations, and Enforcement Agency Investigations. It provides an overview of types of computer forensics, data recovery, electronic evidence, threats, and surveillance.

7. Course Outcomes and CO-PO Mapping

Course Outcomes:

CO1: Understand a brief overview of Computer Forensics Fundamentals.

CO2: Identify the features of Data Recovery.

CO3: Understanding of Reconstructing Past Events.

CO4: Work with cyber forensics tools.

CO/PO Mapping:

Course Outcomes (CO)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	1				1				1				1			
CO2		1				1				1				1		
CO3			1				1				1				1	
CO4				1				1				1				1

8. Course Syllabus

Sr. No.	Content	CO	Sessions
1	1111	111	111
2	1111	111	111

9. Learning Resources

Text Books:

✓ John R. Vacca, 2004, Computer Forensics, Firewall Media, 2004

Reference Links:

- [Chad Steel, Windows Forensics, Wiley India, 2006](#)
- [Majid Yar, Cybercrime and Society, Sage Publications, 2006](#)
- [Robert M Slade, Software Forensics, Tata McGraw Hill, 2004](#)

10. Weekly Timetable

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:15-10:10	Cyber Forensics (CSE4708)				
10:15-11:10		Cyber Forensics (CSE4708)			
11:15-12:10			Cyber Forensics (CSE4708)		
12:15-13:10				Cyber Forensics (CSE4708)	
13:15-14:10					Cyber Forensics (CSE4708)
14:15-15:10	Cyber Forensics (CSE4708)				
15:15-16:10		Cyber Forensics (CSE4708)			
16:15-17:10			Cyber Forensics (CSE4708)		
17:15-18:10				Cyber Forensics (CSE4708)	

11. Student List

uniqueId	studentName
210C2030002	Aayush Dubey
210C2030004	Pelleti Sujith Reddy
210C2030007	Malladi Sai Prabhas
210C2030010	Subhransh Behura
210C2030014	Abhimanyu Gulati

12. Internal Assessment Data

Component	Duration	Weightage	Evaluationweek	Remarks	Evaluation
1111	1111	1		11111	1
111	1111	1		11111	1

13. Weak Students Data

uniqueId	studentName	totalMarks	grade
210C2030002	Aayush Dubey	83	A+
210C2030007	Malladi Sai Prabhas	81.5	B+
210C2030014	Abhimanyu Gulati	47	R

14. Actions taken for weak students


- Imfoa mc

15. Marks Details

uniqueId	studentName	totalMarks	grade
210C2030002	Aayush Dubey	83	A+
210C2030004	Pelleti Sujith Reddy	78.5	B
210C2030007	Malladi Sai Prabhas	81.5	B+
210C2030010	Subhransh Behura	87	A+
210C2030014	Abhimanyu Gulati	47	R

17. Attendance Report

uniqueId	studentName	attendance
210C2030002	Aayush Dubey	88
210C2030004	Pelleti Sujith Reddy	90
210C2030007	Malladi Sai Prabhas	78
210C2030010	Subhransh Behura	82
210C2030014	Abhimanyu Gulati	68

Course Code: CSE4708	Course Name: Cyber Forensics	 BMU <small>BML Munjal University</small>
Credits: 3 (3-0-0)	Contact Hours: 3 hours Theory per week	
Batch: 2021, 7th Sem Academic Year: 2024-25	Semester Duration: 5th Aug 2024 to 6th Dec	
Course Faculty: Dr. Pramod Kumar Maurya <i>[contact details: pramod.maurya@bmu.edu.in, 9643322724 and 7, IV Floor, E2 Building]</i>	Course Coordinator: Name: Dr. Pramod Kumar Maurya Email: <i>pramod.maurya@bmu.edu.in</i> Office: 7, IV Floor, E2 Building	

Aim of the course: The goal of this course “Cyber Forensics” is to understand the principles and practice of security attacks and fundamentals of security protocols and its defense. It covers operating system security, database security, network-based security threats and their social and legal aspect.

Course Overview and Context: Cyber Forensics is a core elective course in computer science and engineering and computer science undergraduate program. This course focuses on to understand Computer Forensics, Computing Investigations, Enforcement Agency Investigations. This course will provide overview of types of computer forensics, data recovery, electronic evidence, threats, surveillance.

Course Outcomes (CO): At the end of the course the students should be able to do the following:

CO1 Understand a brief overview of Computer Forensics Fundamentals.

CO2 Identify the features of Data Recovery.

CO3 Understanding of Reconstructing Past Events.

CO4 Work with cyber forensics tools.

Topics of the course:

Topics	Number of sessions	Course Outcomes
Computer Forensics Fundamentals.	3	CO1
Types of Computer Forensics Technology	3	CO1
Types of Vendor and Computer Forensics Services.	2	CO1
Data Recovery	2	CO2
Evidence Collection and Data Seizure	3	CO2
Duplication and Preservation of Digital Evidence	2	CO3

Computer Image Verification and Authentication.	2	CO2
Discover of Electronic Evidence	2	CO3
Identification of Data	2	CO3
Reconstructing Past Events	3	CO3
Networks.	2	CO3
Fighting against Macro Threats	1	CO2
Information Warfare Arsenal	2	CO3
Tactics of the Military	2	CO4
Tactics of Terrorist and Rogues	2	CO3
Tactics of Private Companies.	2	CO4
The Future – Arsenal	2	CO3
Surveillance Tools	2	CO4
Victims and Refugees	1	CO4
Advanced Computer Forensics.	2	CO4
Payload, Key Management	2	CO4

Learning Resources:

Textbook:

John R. Vacca, "Computer Forensics", Firewall Media, 2004.

Reference Books:

1. Chad Steel, "Windows Forensics", Wiley India, 2006.
2. Majid Yar, "Cybercrime and Society", Sage Publications, 2006.
3. Robert M Slade, "Software Forensics", Tata McGraw Hill, 2004

Assessment Pattern: The final grade will be based on the marks / grades obtained in the mid-semester and end-semester evaluation along with other assessments defined below. Relative grading method defined in the academic regulations of the university will be followed to grade the students. Student has to secure minimum 40% of marks after completing all the assessments in the following table to become eligible for grading.

Evaluation Component	Weightage (%)	Evaluation Schedule	Rubrics
Mid Term	20%	As per academic calendar/Date-sheet	Close book written exam
Quiz 1	10%	September 2 nd Week	Topics to be covered will be announced in the class. 10 MCQ questions, each of 1 mark. Mode of quiz will be offline.
Assignment 1	10%	October 2 nd week	Topics to be covered will be announced in the class.
Case Study and Literature Survey	20%	November 2 nd and 3 rd week	Viva (5%) Presentation (15 %)
End Term	40%	As per academic calendar / Date-sheet	Close book written exam

- All evaluations will be based on the work presented by the students as well as the questions asked.
- Cases of AI-generated answer or plagiarism will be taken seriously and reported according to the university's policy on Unfair Means (UFM). It is essential that all work is original and adheres to academic integrity.

Student Responsibilities:

- Attend lectures and do the work Lab Assignments as per instructions.
- Participate in the discussions/assignments held during classes.
- Check announcements on the LMS and emails regularly.
- Submit the assigned task on time.
- Regularly check marks on the LMS to ensure they are up to date.
- Participate in class and take necessary actions to grasp the material. Asking questions is encouraged.
- Communicate any concerns by speaking directly with the instructor.

Attendance Policy: Students are expected to attend classes regularly. Failure to follow the classes regularly and adhere to the expected attendance percentage will result in losing quiz/lab marks and a reduction of the grade as per the University's grading policy.

Recourse Examination Policy: In case a student fails the course, a one-time recourse is permitted as per the academic regulations of the University. Recourse is allowed only for the End Semester examination.

Make-up policy: No make-up exam will be conducted for unexcused absences. The faculty needs to be informed in advance in case the student is not going to appear for any evaluation component, and it is at the discretion of the faculty to sanction makeup for an evaluation component.

Behavior Expectations: No mobile phones and other distractive gadgets are permitted in the class.

Academic Dishonesty/Cheating/Plagiarism: Plagiarism and dishonesty in any form in any evaluation component will lead to appropriate disciplinary action.