Academic Course Description

BHARATH UNIVERSITY
Faculty of Engineering and Technology
Department of Electrical and Electronics Engineering
BEE030 &CYBER SECURITY
Eighth Semester, (Even Semester)

Course (catalog) description

The proliferation of Internet has impacted the lives of people in all professions. Equally, they are also prone to get attacked by hackers and intruders and eventually lose their privacy. Naïve users of Internet, without proper awareness and implications carry out communication in the cyber world. Therefore, it becomes indispensable for every individual to gain knowledge in the fundamentals of cyber security, best practices related to cyber security and legal implications of intruding in the privacy of others. This necessitates the need for this course on Cyber Security

Compulsory/Elective course: Elective &for EEE students

Credit & Contact hours   :   3 and 45 hours

Course Coordinator   :   Ms.Kavitha

Instructors   :   Ms.Kavitha

Name of the instructor	Class handling	Office location	Office phone	Email (domain:@ bharathuniv.ac.in	Consultation
Ms.Kavitha	Final year EEE	KS 304	-	Varshinikavitha@gmail.com	9.00-9.50 AM

Relationship to other courses:

Pre –requisites   :   BCS101-Fundamentals Of Computing

Assumed knowledge   :   The importance of taking a multi-disciplinary approach to cyber security
                                            The cyber threat landscape, both in terms of recent emergent issues and those
                                            issues which recur over time

Syllabus Contents

UNIT I   NEED FOR CYBER SECURITY   9
Introduction to security- CIA triad-Case studies- security attacks-issues related to social networking -Guidelines

UNIT II   METHODS TO SECUREYOURSELF IN THE CYBER WORLD   9
Why and What of Reversible and Irreversible Cryptographic mechanisms? - Applications of Digital Signature - Good password practices

UNIT III   E-COMMERCE: SECURE TRANSACTIONS   9
What is E-commerce? – Online banking security- Online shopping fraud-Guidelines and Recommendations

UNIT IV   EVERYDAY SECURITY   9
Connecting your laptop, mobile devices, PDAs to Internet-Managing your browser-Facebook Security-E-mail security – Safe guarding from Viruses: Antiviruses– Best practices and guidelines

UNIT V   CYBER SECURITY LAWS AND COMPETENT AUTHORITIES   9
Indian IT Act, 2008 - What is Cyber Forensics? – Functions of cybercrime cell – Responding to a cyber attack

Reference Books:

R1.“Information Security Awareness Handbook, ISEA, Department of Electronics and Information Technology”, Government of India, 2010
R2. deity.gov.in/sites/upload_files/dit/.../itact2000/it_amendment_act2008.pdf
R3.www.schneier.com/blog/archives/2013/03/browser_securit.html
R4. www.dhses.ny.gov/ocs/awareness-training-events/news/2010-03.cfm
R5.https://www.watsonhall.com/e-commerce-security

. **Computer usage: YES**

Professional component

General	-	0%
Basic Sciences	-	0%
Engineering sciences & Technical arts	-	0%
Professional subject	-	0%
Open elective	-	100%

Test Schedule

S. No.	Test	Tentative Date	Portions	Duration
1	Cycle Test-1	FEBRUARY 2ND WEEK	Session 1 to 18	2 Periods
2	Cycle Test-2	MARCH 2ND WEEK	Session 19 to 27	2 Periods
3	Model Test	APRIL 3RD WEEK	Session 1 to 45	3 Hrs
4	University Examination	TBA	All sessions / Units	3 Hrs.

Mapping of Instructional Objectives with Program Outcome

	Correlates to program outcome		
The proliferation of Internet has impacted the lives of people in all professions. Equally, they are also prone to get attacked by hackers and intruders and eventually lose their privacy. Naïve users of Internet, without proper awareness and implications carry out communication in the cyber world. Therefore, it becomes indispensable for every individual to gain knowledge in the fundamentals of cyber security, best practices related to cyber security and legal implications of intruding in the privacy of others. This necessitates the need for this course on Cyber Security	**H**	**M**	**L**
1. Understand the need for Cyber security and its related threats and attacks	j	b,c,e,f,g,l	k
2. Learn methods to become secure in the cyber world and securely communicate in the cyber world.	e	b,c,f,g,l,j,k,l	
3. Become knowledgeable about the best practices related to cyber security, regulations and laws associated with the same.	e,f	b,g,j,l	k

H: high correlation, M: medium correlation, L: low correlation

Draft Lecture Schedule

S.NO	Topics	Problem solving (Yes/No)	Text / Chapter
UNIT I	**NEED FOR CYBER SECURITY**		
1.	Introduction to security	NO	R1,R2
2.	CIA triad	NO	
3.	Case studies	NO	
4.	security attacks	NO	
5.	issues related to social networking	NO	
6.	Guidelines	NO	
7.	**TEST**	YES	
8.	**SEMINAR**	NO	
9.	TEST	YES	
UNIT II	**METHODS TO SECUREYOURSELF IN THE CYBER WORLD**		
10.	What of Reversible	NO	R1,R2
11.	Applications of Digital Signature	NO	
12.	Good password practices	NO	
13.	Irreversible Cryptographic mechanisms	NO	
14.	Why Reversible Cryptographic mechanisms	NO	
15.	Why Irreversible Cryptographic mechanisms	NO	
16.	Revision	no	
17.	Irreversible Cryptographic mechanisms	YES	
18.	Seminar	NO	
UNIT III	**E-COMMERCE: SECURE TRANSACTIONS**		
19.	What is E-commerce	NO	R1,R2
20.	Online banking security	NO	
21.	Online shopping fraud	NO	
22.	Guidelines	NO	
23.	Recommendations	NO	
24.	Transaction	NO	
25.	Test	NO	
26.	E Commers Application	NO	
27.	Revision	NO	
UNIT IV	**EVERYDAY SECURITY**		
28.	Connecting your laptop	YRS	R1,R2
29.	mobile devices	NO	
30.	PDAs to Internet	NO	
31.	Managing your browser	NO	

32.	Facebook Security	NO	
33.	E-mail security	NO	
34.	Safe guarding from Viruses	NO	
35.	Antiviruses	NO	
36.	Best practices	NO	
UNIT VCYBER SECURITY LAWS AND COMPETENT AUTHORITIES			
37.	Indian IT Act	NO	
38.	2008 - What is Cyber Forensics	NO	
39.	Functions of cybercrime cell	NO	
40.	Responding to a cyber attack	NO	
41.	Components Authorities	NO	R1,R2
42.	**Application**	NO	
43.	Functions Of Cyber Act	NO	
44.	Revision	NO	
45.	Test	NO	

Teaching Strategies

The teaching in this course aims at establishing a good fundamental understanding of the areas covered using:

- Formal face-to-face lectures

- Tutorials, which allow for exercises in problem solving and allow time for students to resolve problems in understanding of lecture material.

- Laboratory sessions, which support the formal lecture material and also provide the student with practical construction, measurement and debugging skills.

- Small periodic quizzes, to enable you to assess your understanding of the concepts.

Evaluation Strategies

Cycle Test – I	-	5%
Cycle Test – II	-	5%
Model Test	-	10%
Assignment	-	5%
Attendance	-	5%
Final exam	-	70%

Prepared by: Ms.Kavitha   **Dated :**

Addendum

ABET Outcomes expected of graduates of B.Tech / EEE / program by the time that they graduate:

a) An ability to apply knowledge of mathematics, science, and engineering fundamentals.

b) An ability to identify, formulate, and solve engineering problems.

c) An ability to design a system, component, or process to meet the desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

d) An ability to design and conduct experiments, as well as to analyze and interpret data.

e) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

f) An ability to apply reasoning informed by the knowledge of contemporary issues.

g) An ability to broaden the education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.

h) An ability to understand professional and ethical responsibility and apply them in engineering practices.

i) An ability to function on multidisciplinary teams.

j) An ability to communicate effectively with the engineering community and with society at large.

k) An ability in understanding of the engineering and management principles and apply them in project and finance management as a leader and a member in a team.

l) An ability to recognize the need for, and an ability to engage in life-long learning.

Program Educational Objectives

PEO1: PREPARATION
Electrical Engineering Graduates are in position with the knowledge of Basic Sciences in general and Electrical Engineering in particular so as to impart the necessary skill to analyze and synthesize electrical circuits, algorithms and complex apparatus.

PEO2: CORE COMPETENCE
Electrical Engineering Graduates have competence to provide technical knowledge, skill and also to identify, comprehend and solve problems in industry, research and academics related to power, information and electronics hardware.

PEO3: PROFESSIONALISM
Electrical Engineering Graduates are successfully work in various Industrial and Government organizations, both at the National and International level, with professional competence and ethical administrative acumen so as to be able to handle critical situations and meet deadlines.

PEO4: SKILL
Electrical Engineering Graduates have better opportunity to become a future researchers/ scientists with good communication skills so that they may be both good team-members and leaders with innovative ideas for a sustainable development.

PEO5: ETHICS
Electrical Engineering Graduates are framed to improve their technical and intellectual capabilities through life-long learning process with ethical feeling so as to become good teachers, either in a class or to juniors in industry.

BEE030 &CYBER SECURITY

Course Teacher	Signature
Ms.Kavitha	

Course Coordinator   **HOD/EEE**
(Ms.Kavitha)   (   )