Sant Gadge Baba Amravati University, Amravati
Part A
Faculty: Science and Technology
Programme: Bachelor of Computer Application (BCA)

Part B
Syllabus Prescribed for 3 Year BCA UG Programme
Programme: Bachelor of Computer Application (BCA)
Semester V

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Hours/Periods)
5BCAOE2	**Cyber Security**	**60 Periods**

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1. To correctly define and cite appropriate instances for the application of computer forensics.
2. To collect and analyze computer forensic evidence.
3. Gain the knowledge of different types and working of malware and security hazards incident of real-world.

Unit	Content
Unit I	**Cyber Security:** Definition, Cybercrime and Information Security, Syber criminals, Classification of Cybercrime, Cybercrime Era. **Cyber offences:** Categories of Cybercrime, How criminals plan the attack, Cyber Stalking, Cyber Cafe and Cybercrime, Botnets and Cybercrime, Cloud Computing and Cybercrime. **Security threat and vulnerability:** Overview, Malware, Types of Malware: Virus, Worms, Trojans, Rootkits, Robots, Adware's, Spywares, Ransomwares, Zombies, Desktop Security. **(12 Periods)**
Unit II	**Tools and methods used in cybercrime:** Phishing and Identity theft, Methods of Phishing, Spear Phishing, Types of phishing scams, Phishing toolkits, Spy phishing, Personally Identifiable Information, Types and techniques of ID theft, Password cracking, Key loggers and Spywares, Backdoors, Steganography, DoS and DoS attacks, SQL Injection, Buffer Overflow. **(11 Periods)**
Unit III	**Cybercrime on mobile and wireless devices:** Security challenges posed by mobile devices, Attacks on wireless networks, Credit card frauds, Mobile and wireless era, Authentication security service, Attacks on mobile phones: Mobile phone theft, Mobile virus, Mishing, Vishing, Smishing, Hacking Bluetooth. **(11 Periods)**
Unit IV	**Cybercrime and Cyber Security:** Cyber Law, The Indian IT Act, Digital Signatures and IT Act, Cyber security and Organizational implications, Cyber crisis management, Anti Cybercrime Strategies, Cybercrime and Cyber terrorism. Cybercrime and Indian ITA 2000. Cyberspace: Cloud computing & Security, Social Network sites security, Attack prevention passwords, Protection against attacks in social media, Securing wireless networks. **(11 Periods)**
Unit V	**Computer forensics:** Introduction, Computer forensics and Digital evidence, Digital forensics life cycle, Computer forensics and Steganography, Electronic evidence and handling, Electronic media, Collection, Searching and storage of electronic media, Introduction to internet crimes, Hacking and cracking, Credit card and ATM frauds, Web technology, Cryptography, Emerging digital crimes and modules, Relevance of the OSI 7 Layer model to computer forensics, Anti forensics. **(11 Periods)**
*SEM Assignment, Class test, Attendance, Seminar, Study tour, Industrial visit, Field work, Group discussion or any other innovative practice/activity	

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   1. Explain various security concepts and apply them in daily cyber use.
   2. Configure firewall and other security setting in computer
   3. Perform the malware and spam email identification, analysis, virus scanning and cleaning and other services using security tools
   4. Explain and practice the Cyber Law, Ethics, Intellectual Property Rights, Patent and Trademark and Design Law	

**Activities	1. List out the different Cyber Crimes occurred in your nearby area 2. Visit Cyber Security cell in your city **3.** List out the challenges faced by cyber security cell **(4 Periods)**

Course Material/Learning Resources

Text books:

1. Cyber Security by Nina Godbole & Sunit Belapure
2. Computer Forensics by Marie - Helen Maras

Reference Books:
1. Cyber Security and Cyber war: What Everyone Needs to Know, by Allan Friedman and P. W. Singer, Oxford University
2. Cyber Security Basics: Protect Your Organization by Applying the Fundamentals by Don Franke, Publisher: CreateSpace Independent Publishing Platform, 2016
3. Fundamental of Cyber Security by Mayank Bhushan,

Web links to Equivalent MOOC on SWAYAM if relevant:

1. https://onlinecourses.swayam2.ac.in/cec20_cs15/preview
2. https://www.classcentral.com/course/swayam-cyber-security-13978
3. https://programs.online/top-technology-courses/p/swayam/introduction-to-cyber-security-online

Web links to Equivalent Virtual Lab if relevant:

1. https://www.vlab.co.in/
2. https://virtualcyberlabs.com/

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

1. https://www.youtube.com/watch?v=VBejkJSsHZ0
2. https://www.youtube.com/watch?v=b4-ZZb_4Zr4
3. https://www.youtube.com/watch?v=GT0daScxO18