



GALGOTIAS UNIVERSITY



**Bachelor of Technology in Computer Science and
Engineering (Cyber Security with AI)**

Name of School: School of Computer Science and
Engineering

Department: Cyber Security

Year: _____

Curriculum

| First Semester B. Tech CSE (Cyber Security with Artificial Intelligence) | | | | | | | |
|---|-------------|---------------------------------------|-----------|---|---|---|---|
| Sl.No. | Course Code | Course Title | L | T | P | S | C |
| 1 | 101 | Foundation of AI | 3 | 0 | 1 | 0 | 4 |
| 2 | 102 | Advanced Engineering Materials for AI | 3 | 0 | 0 | 0 | 3 |
| 3 | 103 | Mathematics for Computer Science | 3 | 0 | 0 | 0 | 3 |
| 4 | 104 | Programming for Problem Solving | 3 | 0 | 1 | 1 | 5 |
| 5 | 105 | YOGA | 0 | 0 | 0 | 0 | 0 |
| 6 | 106 | Aptitude Skills | 0 | 0 | 2 | 0 | 2 |
| Total Credits | | | 17 | | | | |

| Second Semester B. Tech CSE (Cyber Security with Artificial Intelligence) | | | | | | | |
|--|-------------|------------------------------------|-----------|---|---|---|---|
| Sl.No. | Course Code | Course Title | L | T | P | S | C |
| 1 | 201 | Digital Logic Design | 3 | 0 | 1 | 0 | 4 |
| 2 | 202 | Engineering Design and Prototyping | 3 | 0 | 1 | 0 | 4 |
| 3 | 203 | Mathematical Foundation of AI | 3 | 0 | 1 | 0 | 4 |
| 4 | 204 | Discrete Structure | 3 | 0 | 0 | 0 | 3 |
| 5 | 205 | Object-Oriented Programming | 3 | 0 | 1 | 1 | 5 |
| 6 | 206 | Environmental Impact Analysis | 1 | 0 | 0 | 0 | 1 |
| 7 | 207 | Applied Aptitude Skills | 0 | 0 | 2 | 0 | 2 |
| Total Credits | | | 23 | | | | |

| Third Semester B. Tech CSE (Cyber Security with Artificial Intelligence) | | | | | | | |
|---|-------------|---|-----------|---|---|---|---|
| Sl.No. | Course Code | Course Title | L | T | P | S | C |
| 1 | 301 | Database Management System | 3 | 0 | 1 | 1 | 5 |
| 2 | 302 | Data Structures | 3 | 0 | 1 | 0 | 4 |
| 3 | 303 | Python Programming | 3 | 0 | 1 | 1 | 5 |
| 4 | 304 | Data Communication and Networking | 3 | 0 | 1 | 0 | 4 |
| 5 | 305 | Computer Organization and Architecture | 3 | 0 | 0 | 0 | 3 |
| 6 | 306 | Programming Skills with Computational Maths | 0 | 0 | 2 | 0 | 2 |
| 7 | 307 | Advanced Aptitude Skills | 0 | 0 | 2 | 0 | 2 |
| Total Credits | | | 25 | | | | |

| Fourth Semester B. Tech CSE (Cyber Security with Artificial Intelligence) | | | | | | | |
|--|--------------------|---|-----------|----------|----------|----------|----------|
| Sl.No. | Course Code | Course Title | L | T | P | S | C |
| 1 | 401 | Design and Analysis of Algorithm | 3 | 0 | 1 | 0 | 4 |
| 2 | 402 | Fundamentals of Cyber Security | 3 | 0 | 0 | 0 | 3 |
| 3 | 403 | Machine Learning | 3 | 0 | 1 | 1 | 5 |
| 4 | 404 | Operating System | 3 | 0 | 1 | 0 | 4 |
| 5 | 405 | Minor Track Course - I / Program Core- I | 3 | 0 | 1 | 1 | 5 |
| 6 | 406 | Programming Skills with Data Structures | 0 | 0 | 2 | 0 | 2 |
| 7 | 407 | Aptitude Proficiency | 0 | 0 | 2 | 0 | 2 |
| Total Credits | | | 25 | | | | |

| Fifth Semester B. Tech CSE (Cyber Security with Artificial Intelligence) | | | | | | | |
|---|--------------------|---|----------|----------|----------|----------|-----------|
| Sl.No. | Course Code | Course Title | L | T | P | S | C |
| 1 | 501 | Software Engineering | 3 | 0 | 1 | 1 | 5 |
| 2 | 502 | Web Technology | 3 | 0 | 1 | 1 | 5 |
| 3 | 503 | Design Thinking | 1 | 0 | 0 | 0 | 1 |
| 4 | 504 | Summer Internship - I | 0 | 0 | 0 | 1 | 1 |
| 5 | 505 | Minor Track Course – II/ Program Core - II | 3 | 0 | 1 | 0 | 4 |
| 6 | 506 | Open Elective - I | 3 | 0 | 0 | 0 | 3 |
| 7 | 507 | Programming Skills with Algorithmic Design | 0 | 0 | 2 | 0 | 2 |
| 8 | 508 | Soft Skills & Aptitude Readiness | 0 | 0 | 2 | 0 | 2 |
| Total Credits | | | | | | | 23 |

| Sixth Semester B. Tech CSE (Cyber Security with Artificial Intelligence) | | | | | | | |
|---|--------------------|---|----------|----------|----------|----------|-----------|
| Sl.No. | Course Code | Course Title | L | T | P | S | C |
| 1 | 601 | Generative AI for Cyber Security | 3 | 0 | 1 | 1 | 5 |
| 2 | 602 | Cloud Security Architecture | 3 | 0 | 1 | 0 | 4 |
| 3 | 603 | Digital Twin Security | 3 | 0 | 1 | 1 | 5 |
| 4 | 604 | Minor Track Course - III / Program Core- III | 3 | 0 | 1 | 0 | 4 |
| 5 | 605 | Open Elective - II | 3 | 0 | 0 | 0 | 3 |
| 6 | 606 | Understanding Harmony and Ethical Human Conduct | 1 | 0 | 0 | 0 | 1 |
| 7 | 607 | Programming Skills with Advanced Data Structures | 0 | 0 | 2 | 0 | 2 |
| 8 | 608 | Professional Readiness | 0 | 0 | 2 | 0 | 2 |
| Total Credits | | | | | | | 26 |

| Seventh Semester B. Tech CSE (Cyber Security with Artificial Intelligence) | | | | | | | |
|---|--------------------|---|----------|----------|----------|----------|-----------|
| Sl.No. | Course Code | Course Title | L | T | P | S | C |
| 1 | 701 | Research Methodology & IPR | 3 | 0 | 1 | 0 | 4 |
| 2 | 702 | Summer Internship - II | 0 | 0 | 0 | 1 | 1 |
| 3 | 703 | Capstone Project Phase - I | 0 | 0 | 0 | 4 | 4 |
| 4 | 704 | Minor Track Course - IV / Program Core- IV | 3 | 0 | 1 | 1 | 5 |
| Total Credits | | | | | | | 14 |

| Eighth Semester B. Tech CSE (Cyber Security with Artificial Intelligence) | | | | | | | |
|--|--------------------|---------------------------|----------|----------|----------|----------|------------|
| Sl.No. | Course Code | Course Title | L | T | P | S | C |
| 1 | 801 | Capstone Project Phase II | 0 | 0 | 0 | 8 | 8 |
| 2 | 802 | Industrial Internship | 0 | 0 | 0 | 2 | 2 |
| Total Credits | | | | | | | 10 |
| Total Program Credits | | | | | | | 163 |

List of Open Electives

| S.N. | Course Code | Open Elective-I (Sem V) | L | T | P | S | Credits |
|-------------|--------------------|---|----------|----------|----------|----------|----------------|
| 1 | 506 | Understanding India | 3 | 0 | 0 | 0 | 3 |
| 2 | 506 | Bio-Safety and Bio-Hazards | 3 | 0 | 0 | 0 | 3 |
| 3 | 506 | Introduction to Construction Technology | 3 | 0 | 0 | 0 | 3 |
| 4 | 506 | Photography | 3 | 0 | 0 | 0 | 3 |
| 5 | 506 | Health and Lifestyle Disorders | 3 | 0 | 0 | 0 | 3 |
| 6 | 506 | Space Science | 3 | 0 | 0 | 0 | 3 |
| 7 | 506 | Food, Nutrition and Health | 3 | 0 | 0 | 0 | 3 |
| 8 | 506 | NGOs and Sustainable Development | 3 | 0 | 0 | 0 | 3 |

| S.N. | Course Code | Open Elective-II (Sem VI) | L | T | P | S | Credits |
|------|-------------|------------------------------------|---|---|---|---|---------|
| 1 | 605 | Entrepreneurship | 3 | 0 | 0 | 0 | 3 |
| 2 | 605 | Introductory Agriculture | 3 | 0 | 0 | 0 | 3 |
| 3 | 605 | Introduction to Business Economics | 3 | 0 | 0 | 0 | 3 |
| 4 | 605 | Mathematical Puzzles and Games | 3 | 0 | 0 | 0 | 3 |
| 5 | 605 | Microprocessor & Microcontroller | 3 | 0 | 0 | 0 | 3 |
| 6 | 605 | Digital marketing | 3 | 0 | 0 | 0 | 3 |
| 7 | 605 | Human Resource Management | 3 | 0 | 0 | 0 | 3 |
| 8 | 605 | Electric Vehicle Technology | 3 | 0 | 0 | 0 | 3 |

List of Program Cores

| S.N. | Course Code | Program Core | L | T | P | S | Credits |
|------|-------------|--|---|---|---|---|---------|
| 1 | 405 | Critical Infrastructure Security with AI | 3 | 0 | 1 | 1 | 5 |
| 2 | 505 | Cryptography and Network Security | 3 | 0 | 1 | 0 | 4 |
| 3 | 604 | Ethical Hacking with AI Automation | 3 | 0 | 1 | 0 | 4 |
| 4 | 704 | Malware Analysis using Artificial Intelligence | 3 | 0 | 1 | 1 | 5 |
| | | | | | | | |

Proposed List of Minor Tracks

| S.N. | Minor Course | Credits |
|------|--------------------|---------|
| 1 | Agriculture | 18 |
| 2 | Digital Forensic | 18 |
| 3 | IoT | 18 |
| 4 | Block Chain | 18 |
| 5 | Healthcare | 18 |
| 6 | Cyber Law | 18 |
| 7 | Quantum Computing | 18 |
| 8 | Cloud Computing | 18 |
| 9 | Business Analytics | 18 |
| 10 | Fintech | 18 |