



# **UNIVERSITY OF CALCUTTA**

## **Notification No.CSR/36/2023**

It is notified for information of all concerned that in terms of the provisions of Section 54 of the Calcutta University Act, 1979, (as amended), and, in exercise of her powers under 9(6) of the said Act, the Vice-Chancellor has, by an order dated **01.09.2023** approved the syllabi of the under mentioned optional SEC paper offered by the University to be studied in semester-2 of Four-year U.G. Courses of Studies (Honours & Honours with Research) courses of Studies under CCF, 2022 under this University, as laid down in the accompanying pamphlet.

- 1. Artificial Intelligence (A1) (for Science discipline)**
- 2. Digital Empowerment (for Humanities and Language discipline & B.Mus.)**

**The U.G. Board of Studies shall have the option to offer the above in place of the concerned subject based SEC paper at the 2<sup>nd</sup> semester.**

**The above shall take effect from the academic session 2023-2024.**

**SENATE HOUSE**

**Kolkata-700073**

**The 8<sup>th</sup> September, 2023**

A handwritten signature in black ink, appearing to read 'D Das' with the date '08/9/2023' written below it.

**Prof.(Dr.) Debasis Das**

**Registrar**

# Course Title: AI for Everyone

## Course Description:

This course aims to introduce the fundamental concepts of artificial intelligence (AI) to individuals from all academic backgrounds. Participants will develop a broad understanding of AI technologies, their implications, and their potential applications in various fields. The course will emphasize practical examples and real-world case studies to facilitate comprehension and inspire innovative thinking.

## Course Objectives:

- Understand the basics of artificial intelligence and its subfields.
- Explore real-world applications of AI across different industries.
- Gain insights into the ethical, social, and economic implications of AI.
- Develop an appreciation for the potential of AI to drive innovation and transformation.

## Course Outcome:

- Define and explain the fundamental concepts and subfields of AI.
- Identify real-world applications of AI across various industries.
- Analyze the ethical, social, and economic implications of AI.
- Recognize the potential of AI to drive innovation and transformation in different domains.

## Unit 1: Introduction to Artificial Intelligence (6 Lectures)

- Definition and scope of AI
- Historical overview and key milestones
- Differentiating AI from human intelligence

## Unit 2: AI Subfields and Technologies (6 Lectures)

- Machine learning: Supervised, unsupervised, and reinforcement learning
- Deep learning and neural networks
- Natural language processing (NLP) and computer vision

## Unit 3: Applications of AI (8 Lectures)

- AI in healthcare: Diagnosis, treatment, and medical imaging
- AI in finance: Fraud detection, algorithmic trading, and risk assessment
- AI in transportation: Autonomous vehicles and traffic optimization
- AI in customer service and chatbots
- AI in education: Personalized learning and intelligent tutoring systems

#### Unit 4: Ethical and Social Implications of AI (5 Lectures)

- Bias and fairness in AI systems
- Privacy and data protection concerns
- Impact of AI on employment and the workforce
- AI and social inequality

#### Unit 5: Other Important Issues

- Ethical guidelines and responsible AI practices
- AI and Innovation
- Emerging trends and future directions in AI
- AI and creativity: Generative models and artistic applications

# Digital Empowerment

## Course Description:

This course aims to develop students' skills and understanding of digital technologies, focusing on their effective and responsible use in various aspects of life. Students will learn essential digital literacy skills, online communication, digital security, ethical considerations and some of the disruptive technologies of the digital world.

## Learning Objectives

The Learning Objectives of this course are as follows:

- Understand the fundamentals of digital technologies and their impact on society.
- Enhance online communication and collaboration skills.
- Promote digital citizenship and responsible online behavior.
- Gain awareness of digital security risks and implement best practices.
- Explore ethical considerations in the use of digital technologies.

## Learning outcomes

The Learning Outcomes of this course are as follows:

- Use ICT and digital services in daily life.
- Develop skills to communicate and collaborate in cyberspace using social platforms, teaching/learning tools.
- Understand the significance of security and privacy in the digital world.
- Evaluate ethical issues in the cyber world

## Syllabus:

### **UNIT-I Digital Literacy and Digital Empowerment**

**(6 Hours)**

- Definition of Digital Literacy
- Current Trends of Digital Technology
- Evaluating the credibility of online information
- Copyright and plagiarism awareness
- Imp application of our country DigiLocker, E-Hospitals, e-Pathshala, SHIM, e-Kranti (Electronic Delivery of Services), e-Health Campaigns

### **UNIT-II Online Communication and Collaboration**

**( 6 Hours)**

- Electronic Communication: electronic mail, blogs, social media
- Collaborative Digital platforms
- Tools/platforms for online learning
- Collaboration using file sharing, messaging, video conferencing

### **UNIT- III Digital Security**

**( 6 Hours)**

- Online security and privacy
- Threats in the digital world: Data breach and Cyber Attacks
- Blockchain Technology
- Security Initiatives by the Govt of India

#### **UNIT-IV Digital Citizenship and Ethics (6 hours)**

- Responsible online behavior and digital etiquette
- Understanding online communities and their norms
- Ethical considerations in digital technology usage

#### **Unit -V Emerging Technology**

**( 6 Hours)**

- Exploring emerging technology and its impact
- AI and Machine Learning
- IOT and Connected Devices

#### **Books**

- Understanding Digital Literacies: A Practical Introduction , by Rodney H. Jones (Author), Christoph A. Hafner (Author)
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