

# **Syllabus : Future Tech Olympiad 4.0**

## **Introduction to Future Tech Olympiad Syllabus**

This syllabus is designed to help students in classes 7 to 12 prepare for the future by gaining a deep understanding of advanced technologies. It covers topics such as Digital Literacy, Digital Etiquette, AI, AR, VR, Blockchain, and IoT. Additionally, this syllabus integrates concepts from computer science books, ensuring a well-rounded and practical learning experience. Students will have the opportunity to apply their knowledge through projects and research, enhancing their skills for the future.

### **1. Digital Citizenship**

- **Introduction to Digital Citizenship**  
Understanding your role as a responsible digital user.
- **Online Safety and Privacy**  
Protecting personal data, understanding encryption, and avoiding cyber threats.
- **Ethical Use of Technology**  
Promoting positive behavior, understanding digital rights, and responsibilities.

### **2. Artificial Intelligence (AI) and Machine Learning**

- **Introduction to AI**  
Basics of AI, types of AI, and its applications in daily life.
- **Machine Learning Fundamentals**  
Understanding algorithms, supervised and unsupervised learning.
- **AI in Various Sectors**  
How AI is transforming industries like healthcare, finance, and education.
- **Ethics and AI**  
Responsible AI use, bias in AI, and understanding its societal impact.

### **3. Augmented Reality (AR) and Virtual Reality (VR) Development**

- **Understanding AR and VR**  
Basics of Augmented Reality and Virtual Reality, and how they differ.
- **Applications of AR and VR**  
How AR/VR is used in gaming, education, medicine, and real-world training.
- **Developing AR/VR Projects**  
Tools and platforms for creating AR/VR content (basic introduction to tools like Unity).

### **4. Blockchain and Internet of Things (IoT) in Business and Industry**

- **Blockchain Basics**  
Introduction to blockchain technology, decentralized ledgers, and cryptocurrencies.
- **Blockchain Applications**  
How blockchain is used in finance, supply chains, and data security.
- **Introduction to IoT**  
Understanding the concept of IoT, smart devices, and connected systems.
- **IoT in Business and Industry**  
Applications of IoT in healthcare, agriculture, smart cities, and manufacturing.

## 5. Cybersecurity and Data Privacy

- **Basics of Cybersecurity**  
Understanding cybersecurity threats, phishing, malware, and securing online activities.
- **Data Protection and Privacy Laws**  
Importance of GDPR, data privacy laws, and protecting digital identities.
- **Safe Internet Practices**  
Password security, two-factor authentication, and avoiding scams.

## 6. Sustainability and Green Technology

- **Technology for Sustainable Development**  
How tech innovations are solving environmental challenges.
- **Green Technologies**  
Renewable energy, electric vehicles, and sustainable infrastructure.
- **AI for Sustainability**  
How AI is helping optimize energy use, reduce waste, and combat climate change.

## 7. Robotics and Automation

- **Introduction to Robotics**  
Basics of robotics, automation, and the role of robots in various industries.
- **Automation in Business**  
Understanding how automation is changing industries like manufacturing and logistics.
- **Building Simple Robots**  
Introduction to robotic components and basic robotic projects.

## 8. Cloud Computing and Data Analytics

- **What is Cloud Computing?**  
Understanding cloud infrastructure, services, and platforms.
- **Big Data and Analytics**  
The importance of big data in decision-making and business growth.
- **Cloud in Everyday Life**  
Real-world applications of cloud computing and data analytics.

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## Challenge Format

- **Multiple Choice Questions (MCQs):**  
Testing knowledge on the above topics, ranging from basic to advanced levels.
- **Practical Project-Based Challenge:**  
Optional challenges where students work on real-world tech solutions (e.g., AI for sustainability, building a simple IoT device).
- **Interactive Problem-Solving Tasks:**  
Scenario-based tasks requiring innovative solutions using AI, AR/VR, or IoT.

**Students are invited to complete any 2 course following suggestive courses on IBM Skillsbuild and get badge/certificate :**

- *Gen AI for Software Development*
- *Getting Started with Artificial Intelligence*
- *Artificial Intelligence Fundamentals*
- *AI Foundations*
- *Cybersecurity Fundamentals*
- *Information Technology Fundamentals*
- *Explore Emerging Tech*
- *Data Science Foundations - Level 1*