

**Course Title: Human Machine Interface (HMI)      Course Code: EEA 106**

**Course Background / Summary:**

The Human Machine Interface (HMI) plays a critical role in bridging the gap between humans and machines, enabling seamless interaction and control of complex systems. As technology continues to evolve, the importance of designing user-friendly and efficient HMIs becomes paramount in various industries, including manufacturing, automotive, aerospace, healthcare, and more. This course delves into the principles, technologies, and best practices for creating effective HMIs that enhance user experience, system control, and overall operational efficiency.

**Course Objectives:**

- Understand the fundamental concepts of Human Machine Interface (HMI) design.
- Gain insights into the psychology of human-computer interaction and usability principles.
- Acquire knowledge about different types of HMIs, including graphical interfaces, touchscreens, voice interfaces, and augmented reality interfaces.
- Develop the skills to design intuitive and user-centered HMIs for various applications.
- Learn about the integration of HMI technologies with underlying systems and control mechanisms.

**Target Audience:**

- Engineers and developers responsible for designing and implementing HMIs.
- User experience (UX) and user interface (UI) designers seeking to enhance their understanding of HMI design principles.
- Project managers and decision-makers involved in technology integration and system design.

**Course Duration: 4 Days**

### Course Contents

**1.0 Introduction to Human Machine Interface (HMI) and its Significance**

**4.0 Interface Design Guidelines: Layout, Navigation, Feedback, and Consistency**

**2.0 Human Factors and Usability Principles in HMI Design**

**5.0 Interaction Design and User-Centered Approaches**

**3.0 Types of HMIs: GUIs, Touchscreens, Voice Interfaces, AR/VR Interfaces**

**6.0 HMI Integration with Control Systems: Sensors, Actuators, and Data Visualization**