Sub Committee - Specialization for Curriculum Development

Faculty of Computer Studies

Post Graduate

Course Title: Applications of Augmented Reality and Technology Trends

Course Code: _______________________________

Number of Credits: 3

Level: 4

Learning Objective/Outcome (s):
• To understand the basics of Augmented Reality
• Introducing importance and applications of Augmented and Virtual Reality Systems
• To identify the various challenges in augmented reality.
• To understand various business applications of Augmented and Virtual Reality System.
• To evaluate the impacts of Augmented and Virtual Reality Systems
• To evaluate and analyze the evolution of Augmented and Virtual Reality Systems using case studies

Pre-learning:
Basics of Augmented and Virtual Reality Systems

Course Outline

<table>
<thead>
<tr>
<th>SL No.</th>
<th>Topic / Area Covered</th>
<th>Hours</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to augmented reality and virtual reality.</td>
<td>10</td>
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Fundamental and core concepts.

History and differences between Augmented and Virtual Reality, five Classic Components of a VR System, Early Commercial VR Technology, VR Becomes an Industry, Reality, Virtuality and Immersion, VR, AR, MR, xR: similarities and differences

| 2 | The present and the future of xR, Areas and industries for immersive reality applications, Entertainment, Education, Training, Medical Industrial, Military, Use-cases, applications and production pipelines | 10 |
| 3 | Basics of Computer Vision and Multimodal Interaction, AR systems for Fault Inspection, Digital Twin, Head Up and Head Mounted Systems in Automotive and Aviation Domains, Virtual Reality System development in Unity. | 10 |
| 4 | Rendering real time sensor data in VR model, Human Robot Interaction using AR/VR systems | 10 |
| 5 | Current trends and state of the art in immersive technologies, developing platforms and consumer devices. | 5 |

Total 45

Pedagogy:
- Lecture & Discussion
- Case analysis
- Article analysis
- Quizzes
- Project presentation

Books Recommended:

Suggested Assessment/ Evaluation Methods
Homework & Case studies
Quiz
Project Presentation
Final Exam

Benchmarked against similar courses in other national/international universities/organizations

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<tr>
<th>S. No.</th>
<th>Name of the Course</th>
<th>Name of University where it is offered</th>
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<tbody>
<tr>
<td>1.</td>
<td>Augmented, Virtual &amp; Mixed Reality</td>
<td>USC Viterbi School of Engineering</td>
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**Name of Members**
- Dr. Parag Kaveri

**Designation**
- Assistant Professor

**Org. / Inst.**
- SICSR, Pune

**Signature**

**Name of Experts**
- Dr. Farhana Desai

**Designation**
- Assistant Professor

**Org. / Inst.**
- SICSR

**Signature**

Signature of Dean:
Date: