NANYANG INSTITUTE OF MANAGEMENT
南 洋 管 理 学 院

Module Synopses

Advanced Diploma in Computer Gaming and Animation

Awarded by Nanyang Institute of Management

Total numbers of Modules - 12

Module & Description	Hours
1. Artificial Intelligence for Games Understand the principles and techniques of artificial intelligence as applied to game development. Develop the ability to implement intelligent and realistic behaviours for non-player characters (NPCs) in games. Apply various AI algorithms and decision-making strategies to enhance game mechanics and player experience. **Assessment: 100% Coursework**	45
2. Computer Organisation and Architecture Comprehend the fundamental principles and components of computer systems and their organization. Demonstrate an understanding of computer architecture, including CPU, memory, and input/output systems. Analyse and evaluate the performance of computer systems based on their organization and architecture. **Assessment: 100% Coursework**	45
3. Computer Vision Gain knowledge of computer vision techniques, including image processing, object recognition, and tracking. Apply computer vision algorithms and tools to analyse and extract information from digital images or videos. Develop the ability to use computer vision technologies for applications in gaming and animation. **Assessment: 100% Coursework**	45
4. Data Structures and Algorithms Understand and implement various data structures such as arrays, linked lists, stacks, queues, trees, and graphs. Analyse and evaluate the efficiency and complexity of algorithms and data structures. Apply appropriate data structures and algorithms to solve real-world problems in game development and animation**.** **Assessment: 100% Coursework**	45

Module & Description	Hours
5. Interactive Computer Graphics Gain a solid understanding of the principles and techniques of interactive computer graphics. Develop the ability to create interactive and visually engaging graphics using programming languages and tools. Apply interactive graphics techniques to create immersive and interactive digital media experiences. **Assessment: 100% Coursework**	45
6. Mobile Apps Development Gain proficiency in mobile app development frameworks, languages, and platforms. Design and develop user-friendly and functional mobile applications for iOS and Android platforms. Implement best practices for mobile app design, including UI/UX considerations, performance optimization, and testing. **Assessment: 100% Coursework**	45
7. Motion Graphics and Game Design Acquire skills in motion graphics creation and game design principles. Develop proficiency in creating visually appealing and dynamic animations for digital media. Apply storytelling techniques and game mechanics to design engaging interactive experiences. **Assessment: 100% Coursework**	45
8. Operating Systems and Deployment in Multiple Platforms Understand the concepts and components of operating systems and their role in managing computer resources. Learn techniques for process management, memory management, and file system operations in different operating systems. Develop skills to deploy games and applications across multiple platforms, including desktop, mobile, and web environments. **Assessment: 100% Coursework**	45

Module & Description	Hours
9. English Language for Arts Education Develop effective written and verbal communication skills specific to the arts and design field. Write clear and concise descriptions, critiques, and analyses of artworks. Present ideas and concepts confidently in verbal presentations and discussions related to arts education. **Assessment: 100% Coursework**	45
10. UI and UX Design Develop the ability to create user-friendly and visually appealing user interfaces (UI) for games and applications. Understand user experience (UX) design principles and apply them to enhance usability and user satisfaction. Conduct usability testing and iterate designs based on user feedback for optimal UI/UX design. **Assessment: 100% Coursework**	45
11. Visual Effects and Animation Gain skills in creating visual effects and animations for digital media projects. Understand the principles and techniques of 2D and 3D animation. Apply post-production techniques to enhance visual effects and create impactful animations. **Assessment: 100% Coursework**	45
12. Web Design and Development Gain proficiency in web technologies such as HTML, CSS, and JavaScript for designing and developing interactive and visually appealing websites. Understand responsive web design principles and apply them to create websites that adapt to different devices and screen sizes. Develop skills in creating user-friendly and accessible web interfaces while considering best practices in web design and development. **Assessment: 100% Coursework**	45