

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

CONCENTRATION: COMPUTER GAMES DEVELOPMENT

| Year 1                     |                                         |    |   |    |    |                            |                                                 |    |   |    |    |  |
|----------------------------|-----------------------------------------|----|---|----|----|----------------------------|-------------------------------------------------|----|---|----|----|--|
| 1st Semester               |                                         |    |   |    |    | 2nd Semester               |                                                 |    |   |    |    |  |
| Computer Games Development |                                         |    |   |    |    | Computer Games Development |                                                 |    |   |    |    |  |
| Course Code                | Course Title                            | L  | P | CH | CR | Course Code                | Course Title                                    | L  | P | CH | CR |  |
| CSCI101                    | Programming I                           | 2  | 2 | 6  | 4  | CSCI102                    | Programming II                                  | 2  | 2 | 6  | 4  |  |
| CSCI105                    | Fundamentals of IT Support and Hardware | 0  | 1 | 2  | 1  | CSCI103                    | Fundamentals of Electronics and Digital Systems | 2  | 1 | 4  | 3  |  |
| CSCI106                    | Entrepreneurship in Technology          | 3  | 0 | 3  | 3  | CSCI104                    | Introduction to Artificial Intelligence         | 2  | 1 | 4  | 3  |  |
| GEN101                     | Emirates Studies                        | 3  | 0 | 3  | 3  | CYBR102                    | Cyber Security                                  | 2  | 1 | 4  | 3  |  |
| MATH105                    | Discrete Mathematics                    | 3  | 0 | 3  | 3  | MATH106                    | Calculus                                        | 3  | 0 | 3  | 3  |  |
|                            |                                         |    |   |    |    |                            |                                                 |    |   |    |    |  |
| Total                      |                                         | 11 | 3 | 17 | 14 | Total                      |                                                 | 11 | 5 | 21 | 16 |  |

| Year 2                     |                                    |    |   |    |    |                            |                                   |    |   |    |    |  |
|----------------------------|------------------------------------|----|---|----|----|----------------------------|-----------------------------------|----|---|----|----|--|
| 1st Semester               |                                    |    |   |    |    | 2nd Semester               |                                   |    |   |    |    |  |
| Computer Games Development |                                    |    |   |    |    | Computer Games Development |                                   |    |   |    |    |  |
| Course Code                | Course Title                       | L  | P | CH | CR | Course Code                | Course Title                      | L  | P | CH | CR |  |
| ENGL112                    | English for Academic Purposes      | 3  | 0 | 3  | 3  | CSCI204                    | Design and Analysis of Algorithms | 2  | 1 | 4  | 3  |  |
| CSCI201                    | Data Structure                     | 2  | 1 | 4  | 3  | CSCI205                    | Computer Networks                 | 2  | 1 | 4  | 3  |  |
| CSCI202                    | Computer Org and Assembly Language | 2  | 1 | 4  | 3  | CSCI206                    | Embedded Systems                  | 1  | 2 | 5  | 3  |  |
| GDEV202                    | Graphic Design & Illustration Art  | 2  | 1 | 4  | 3  | CSCI207                    | Databases                         | 2  | 1 | 4  | 3  |  |
| GDEV201                    | Professional Game Development I    | 0  | 1 | 2  | 1  | GDEV203                    | 3D Design and Modelling           | 2  | 1 | 4  | 3  |  |
| MATH205                    | Linear Algebra                     | 3  | 0 | 3  | 3  | MATH208                    | Probability & Statistics          | 3  | 0 | 3  | 3  |  |
| Total                      |                                    | 12 | 4 | 20 | 16 | Total                      |                                   | 12 | 6 | 24 | 18 |  |

| Year 3                     |                                         |    |   |    |    |                            |                            |    |   |    |    |  |
|----------------------------|-----------------------------------------|----|---|----|----|----------------------------|----------------------------|----|---|----|----|--|
| 1st Semester               |                                         |    |   |    |    | 2nd Semester               |                            |    |   |    |    |  |
| Computer Games Development |                                         |    |   |    |    | Computer Games Development |                            |    |   |    |    |  |
| Course Code                | Course Title                            | L  | P | CH | CR | Course Code                | Course Title               | L  | P | CH | CR |  |
| CSCI301                    | Automata, Computability, and Complexity | 3  | 0 | 3  | 3  | CSCI304                    | Computational Geometry     | 3  | 0 | 3  | 3  |  |
|                            | Elective I                              | 3  | 0 | 3  | 3  | CSCI305                    | Project I                  | 1  | 0 | 1  | 1  |  |
| CSCI303                    | Computer Architecture                   | 2  | 1 | 4  | 3  | CSCI306                    | Human Computer Interaction | 2  | 1 | 4  | 3  |  |
| GDEV302                    | Professional Game Development II        | 0  | 1 | 2  | 1  | CSCI307                    | Internship                 | 3  | 0 | 0  | 3  |  |
| GDEV303                    | Game Programming                        | 2  | 1 | 4  | 3  | CSCI308                    | Research Methods           | 2  | 0 | 2  | 2  |  |
| MATH310                    | Graph Theory                            | 3  | 0 | 3  | 3  | GDEV301                    | Advanced Game Design       | 2  | 1 | 4  | 3  |  |
|                            |                                         |    |   |    |    | MATH302                    | Optimization Techniques    | 3  | 0 | 3  | 3  |  |
| Total                      |                                         | 13 | 3 | 19 | 16 | Total                      |                            | 16 | 2 | 17 | 18 |  |

| Year 4                     |                        |    |   |    |    |                            |                                            |   |   |    |    |  |
|----------------------------|------------------------|----|---|----|----|----------------------------|--------------------------------------------|---|---|----|----|--|
| 1st Semester               |                        |    |   |    |    | 2nd Semester               |                                            |   |   |    |    |  |
| Computer Games Development |                        |    |   |    |    | Computer Games Development |                                            |   |   |    |    |  |
| Course Code                | Course Title           | L  | P | CH | CR | Course Code                | Course Title                               | L | P | CH | CR |  |
| CSCI401                    | Software Engineering   | 2  | 1 | 4  | 3  | CSCI406                    | Project III                                | 3 | 0 | 3  | 3  |  |
| CSCI403                    | Project II             | 2  | 0 | 2  | 2  | GDEV401                    | 3D Animation and Visual Effects Production | 2 | 1 | 4  | 3  |  |
| CSCI404                    | IoT                    | 2  | 1 | 4  | 3  |                            | Elective II                                | 3 | 0 | 3  | 3  |  |
| CSCI405                    | Operating Systems      | 2  | 1 | 4  | 3  |                            |                                            |   |   |    |    |  |
| GDEV402                    | VR/AR Game Development | 2  | 1 | 4  | 3  |                            |                                            |   |   |    |    |  |
| Total                      |                        | 10 | 4 | 18 | 14 | Total                      |                                            | 8 | 1 | 10 | 9  |  |

| Core Electives Basket (BSc.15CR)-(I) |                                                   |   |   |    |    |
|--------------------------------------|---------------------------------------------------|---|---|----|----|
| Artificial Intelligence              |                                                   |   |   |    |    |
| Course Code                          | Course Title                                      | L | P | CH | CR |
| CSCI601                              | Professional Ethics in Technology                 | 3 | 0 | 3  | 3  |
| MANG501                              | Project Management                                | 3 | 0 | 3  | 3  |
| CSCI602                              | Cloud Computing                                   | 2 | 1 | 3  | 3  |
| CSCI603                              | Quantum Computing                                 | 2 | 1 | 3  | 3  |
| CSCI604                              | Blockchain Security                               | 2 | 1 | 3  | 3  |
| CSCI605                              | Mobile App Development                            | 1 | 2 | 4  | 3  |
| CSCI606                              | Computational Biology                             | 2 | 1 | 3  | 3  |
| CSCI607                              | Financial Computing                               | 2 | 1 | 3  | 3  |
| CSCI608                              | Social Network Analysis                           | 2 | 1 | 3  | 3  |
| CSCI609                              | Quantum Mechanics for Scientists and Engineers    | 2 | 1 | 3  | 3  |
| CSCI610                              | Quantum Computing and Quantum Information Science | 2 | 1 | 3  | 3  |

|    |                                                          |
|----|----------------------------------------------------------|
| L  | Lecture/Theoretical المحاضرة/النظري                      |
| P  | Practical/Lab العملي/المختبر                             |
| CH | Contact Hours/Teaching Hours ساعات الاتصال/ساعات التدريس |
| CR | Credit Hours/المعادن ساعات                               |