PROGRAM STRUCTURE DIAGRAM

Bachelor of Engineering in Artificial Intelligence Engineering

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| University Requirement |  |  | College Requirement |  |  | Major Requirement |

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| **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** |
| **Fall** | **Spring** | **Fall** | **Spring** | **Fall** | **Spring** | **Fall** | **Spring** | **Fall** |
| ARAB101 | ENGL102 | INTE201 | INTE130 | CYSE201 | University Elective | AIEN411 | ECEN541 | AIEN512 |
| Arabic | English | Fundamentals of | Object Oriented | Data Structure | I | Artificial Intelligence | Digital Signal | Introduction to |
|  | Communication | Operating | Programming | and Algorithm |  | Hardware Design | Processing | NLP |
|  | Skills II | Systems | (Pr: AIEN212) | (Co: MATH140) |  | (Pr: ECEN211 & | (Pr: | (Pr: AIEN212 & |
|  | (Pr: ENGL101) | (Pr: ENGR111) |  |  |  | ECEN331) | MATH203, | AIEN433) |
|  |  |  |  |  |  |  | ECEN211) |  |
| ENGL101 | MATH102 | AIEN212 | MATH204 | MATH203 | MATH406 | AIEN421 | AIEN463 | AIEN513 |
| English | Calculus II | Introduction to | Probability & | Differential | Calculus III | Embedded | Deep & | Computer Vision |
| Communication | (Pr: MATH101) | Python | Statistics | Equations | (Pr: MATH102) | Microprocessor Systems | Reinforcement | (Pr: AIEN212 & |
| Skills I |  | Programming | (Pr: MATH102) | (Pr: MATH102) |  | (Pr: AIEN221) | Learning | ECEN541) |
|  |  | (Pr: ENGR111) |  |  |  |  | Fundamentals |  |
|  |  |  |  |  |  |  | (Pr: AIEN433) |  |
| ENGR111 | ENGR201 | ECEN221 | ECEN331 | AIEN313 | MATH305 | CYSE120 Fundamentals | Program | INTE409 |
| Computer | Engineering | Circuit Theory I | Electronics I | Artificial Neural | Numerical Methods | of Cyber Security | Elective 1 | Cloud Computing |
| Applications | Drawing | (Pr: MATH102) | (Pr: ECEN221) | Networks | (Pr: MATH102) | (Pr: AIEN212) |  | (Pr: ECEN515) |
|  |  |  |  | (Pr: MATH204 |  |  |  |  |
|  |  |  |  | & Co: |  |  |  |  |
|  |  |  |  | MATH215) |  |  |  |  |
| MATH101 | ECEN211 Digital | MATH140 | AIEN221 | MATH215 | AIEN323 | AIEN433 Machine | University | AIEN595 |
| Calculus I | Systems | Discrete | Computer | Linear Algebra | Introduction to | Learning and Pattern | Elective 2 | Capstone II |
|  | (Pr: MATH101) | Mathematics | Architecture & | (Pr: MATH 101) | Artificial | Recognition |  | (Pr: AIEN495) |
|  |  | (Pr: ENGR111 | Organization |  | Intelligence | (Pr: AIEN323) |  |  |
|  |  | & MATH102) | (Pr: ENGR111 & |  | (Pr: AIEN313) |  |  |  |
|  |  |  | ECEN211) |  |  |  |  |  |
| PHYS111 | ECEN281 Digital | ECEN381 | ECEN515 | ENGR202 | OMNS101 | MNGT313 | AIEN495 | Program |
| Applied Physics | Systems Lab | Circuits Lab | Communication | Technical | Omani Society | Entrepreneurship | Capstone I | Elective 2 |
|  | (Co: ECEN211) | (Co: ECEN221) | Networks | Writing |  |  | (Pr: 90 CH) |  |
|  |  |  | (Pr: ECEN211) | (Pr: ENGL102) |  |  |  |  |
|  | CHEM111 | AIEN232 | ECEN382 |  |  | AIEN444 | ENGR322 |  |
| Applied Chemistry | Python | Electronics Lab I | Embedded | Summer |
| Programming | (Co: ECEN331) | Microprocessor Systems | Internship |
|  | Lab |  | Lab |  |
|  | (Co: AIEN212) |  | (Co: AIEN421) |  |
| **15** | **16** | **14** | **16** | **15** | **15** | **16** | **15** | **15** |

Artificial Intelligence Engineering Technical Electives (Choose 2 courses from this list.)

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| **#** | **Course Code** | **Course Title** | **Credits** |
| 1. | AIEN 523 | High Performance Computing | 3 |
| 2. | AIEN 533 | Data Mining | 3 |
| 3. | AIEN 543 | Emerging Trends in AI | 3 |
| 4. | AIEN 553 | Database Management system | 3 |
| 5. | AIEN511 | FPGA Implementation of AI | 3 |
| 6. | ECEN461 | Control Systems | 3 |
| 7. | AIEN521 | Robotics and Control | 3 |
| 8. | AIEN 563 | Internet of Things | 3 |
| 9. | AIEN573 | Artificial intelligence Ethics | 3 |

University Electives (Choose 2 courses from this list.)

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| **Course Code** | **Course Title** | **Credits** | **Pre-Requisites Co-Requisites (C)** |
| ARAB102 | األدب العربي | 3 | - |
| ISLM101 | Islamic Civilizations | 3 | - |
| PHIL101 | Introduction to Logic (Philosophy) | 3 | - |
| SOCI101 | Sociology | 3 | - |
| PSYC100 | مدخل إلى علم النفس | 3 | - |
| FINA202 A | التمويل الشخصي | 3 | - |
| ECON101 | االقتصاد الجزئي | 3 | - |
| FAID101 | First Aid | 3 | - |
| PUHE211 | Introduction to Public Health | 3 | - |
| LAWC101 | القانون في حياتنا | 3 | - |
| LAWC102 | التشريعات الوظيفية | 3 | - |
| LAWC103 | نظام األسرة | 3 | - |