**Academic Program Specification Form For The Academic**

Republic of Iraq

Ministry of Higher Education & Scientific Research

Supervision and Scientific Evaluation Directorate

Quality Assurance and Academic Accreditation

University: Madill Technical University

College :AL Mansour technical medical Institute

Department : electronic technologies Department/medical devices branch

Date Of Form Completion: 1/11/2016

Dean ’s Assistant For Scientific Affairs

Date : / /

Signature

Quality Assurance And University Performance Manager

Date : / /

Signature

Dean ’s Name

Date : / /

Signature

Head of Department

Jameela lammam abed

Date : / /

Signature

**TEMPLATE FOR PROGRAMME SPECIFICATION**

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| HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW |

**PROGRAMME SPECIFICATION**

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| This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme. |

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| Madill Technical University | 1. Teaching Institution |
| AL Mansour technical medical Institute | 2. University Department/Centre |
| electronic technologies Department/medical devices branch | 3. Programme Title |
| technical diploma | 4. Title of Final Award |
| annual | 5. Modes of Attendance offered |
| ABET | 6. Accreditation |
| there's close relationship with the labor market which receives alumnus. So labor is considered curriculum (under a previous questionnaire). | 7. Other external influences |
| 1/11/2016 | 8. Date of production/revision of this specification |
| 9. Aims of the Programme | |
| he Department aims to prepare intermediate cadres specializing in maintenance of electromechanical and electronic medical devices through theoretical lessons and practical experiences of the student receives during two summer training in hospitals to work on various medical equipment such as 1-physical therapy devices of various kinds. 2-Ray devices. 3. The ECG, brain and muscles. 4. A dentist Chair. 5. DC shock. 6. Baby sitter device. 7. Test the fetus. Muscle gauge types | |

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| 10. Learning Outcomes, Teaching, Learning and Assessment Methods |
| A. Knowledge and Understanding  A1. Identify the principles and basics of electronics specialty in General.  A2. Identify the principles and basics of specialty medical devices.  A3. Learn about the types of medical devices and rated to electronic and electromechanical.  A4. Learn the basics of desktop computer. |
| B. Subject-specific skills  B1-how medical devices and potential disruptions.  B 2 – electronic maintenance skills recognition laboratory lesson.  B 3 – learn the skills of medical equipment of all kinds |
| Teaching and Learning Methods |
| Lectures/practical lectures in laboratories and workshops and Labs/summer training. |
| Assessment methods |
| Daily assessment/libertarian theory tests/practical tests in the laboratory and workshop/mid/senior research discussion/final examinations. |
| C. Thinking Skills  C1. Persuaded of the importance of the specialization studies.  C2. Estimated size and technical effort in giving scientific material.  C3. Share groups, students in collective works.  C4. Respect the dedication to work and hates cheating. |
| Teaching and Learning Methods |
| Lectures, discussion |
| Assessment methods |
| Daily assessment/libertarian theory tests/practical tests in the laboratory and workshop |

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| D. General and Transferable Skills (other skills relevant to employability and personal development)  D1. A graduate capable of electronic equipment in General. D2. A graduate capable of keeping up with the evolution in the electronic device.  D3. Be capable of completing graduate studies in a particular field of specialization and electronics in General. | | | | |
| Teaching and Learning Methods | | | | |
| Lecture-workshop – laboratory – systematic training – summer internship. | | | | |
| Assessment Methods | | | | |
| Daily assessment/libertarian theory tests/practical tests in the laboratory and workshop/mid/senior research discussion/final examinations. | | | | |
| 12. Awards and Credits | 11. Programme Structure | | | |
| Credit  rating | Course or Module Title | Course or  Module  Code | Level/Year |
| Bachelor Degree  Requires ( x ) credits | 8 | Electronic |  | First stage  2016-2017 |
| 8 | Digital circuits |  |  |
|  | 8 | Electric circuits &measurements |  |  |
| 8 | The workshops |  |  |
| 4 | Mathematics |  |  |
| 6 | Computer application |  |  |
|  | 6 | Engineering &electrical drawing |  |  |
|  | 4 | Physiology |  |  |
|  | 4 | Democracy and human rights |  |  |
| Second stage 2016-2017 | 8 | Electronic circuits |  |  |
|  | 8 | Electronic measurements device |  |  |
|  | 8 | microcomputers |  |  |
|  | 8 | electronic medical devices |  |  |
|  | 8 | electromechanical medical devices |  |  |
|  | 8 | control |  |  |
|  | 8 | maintenance medical devices |  |  |
|  | 6 | Computer application |  |  |
|  | 4 | project |  |  |

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| 13. Personal Development Planning |
| 1. use of computers in electronic designs  2-search the Internet for enrichment topics that increase student informed competence |
| 14. Admission criteria . |
| Student depends centrally on average and being a graduate branch of science or the top 10 percent of industrial schools specialty medical equipment and has it after an interview for a student at the Institute. |
| 15. Key sources of information about the programme |
| ـــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــــ |

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| **Curriculum Skills Map** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Programme Learning Outcomes** | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | | |
| General and Transferable Skills (or) Other skills relevant to employability and personal development | | | | | Thinking Skills | | | | | Subject-specific skills | | | | | Knowledge and  understanding | | | | | | Core (C)  Title or Option  (O**)** | | Course Title | | Course  Code | | Year / Level | | | |
| **D4** | **D3** | **D2** | **D1** | | **C4** | **C3** | **C2** | **C1** | | **B4** | **B3** | **B2** | **B1** | | **A4** | **A3** | **A2** | **A1** | | |  |  |  |  |  |  |  |  |  |  |
|  |  |  | **\** | |  |  |  | **\** | |  |  | **\**  **/**  **/**  **/**  **/**  **/**  **/**  **/**  **/**  **/**  **/**  **/**  **/**  **/** |  | |  |  |  | **\** | | |  | | Electronic | |  | |  | | | |
|  |  |  | **\** | |  |  |  | **\** | |  |  | **\** |  | |  |  |  | **\** | | |  | | Digital circuits | |  | |
|  |  |  | **\** | |  |  |  | **\** | |  |  | **\** |  | |  |  |  | **\** | | |  | | Electric circuits &measurements | |  | |  | | | |
|  |  |  | **\** | |  |  |  | **\** | |  |  | **\** |  | |  |  |  | **\** | | |  | | The workshops | |  | |
|  |  |  | **\** | |  |  |  |  | |  |  | **\** |  | |  |  |  | **\** | | |  | | Mathematics | |  | |  | | | |
|  |  |  | **\** | |  |  |  |  | |  |  | **\** |  | |  |  |  | **\** | | |  | | Computer application | |  | |
|  |  |  |  | |  |  |  |  | |  |  | **\** |  | |  |  |  | **\** | | |  | | Engineering &electrical drawing | |  | |  | | | |
|  |  |  | **\** | |  |  |  |  | |  |  | **\** |  | | **\** |  |  | **\** | | |  | | Physiology | |  | |
|  |  |  | **\** | |  |  |  |  | |  |  | **\** |  | |  |  |  | **\** | | |  | | Democracy and human rights | |  | |  | | | |
|  |  |  | **\** | |  |  |  |  | |  |  | **\** |  | |  |  |  | **\** | | |  | | Electronic circuits | |  | |
|  |  |  | **\** | |  |  |  |  | |  |  | **\** |  | |  |  |  | **\** | | |  | | Electronic measurements device | |  | |  | | | |
|  |  |  | **\** | |  |  |  | **\** | |  |  | **\** |  | |  |  |  | **\** | | |  | | microcomputers | |  | |
|  |  |  | **\** | |  | **\** | **\** | **\** | |  | **\** | **\** | **\** | |  | **\** | **\** |  | | |  | | electronic medical devices | |  | |  | | | |
|  |  |  | **\** | |  | **\** | **\** | **\** | |  | **\** | **\** | **\** | |  | **\** | **\** |  | | |  | | electromechanical medical devices | |  | |  | | | |
|  |  |  | **\** | |  |  |  | **\** | |  |  | **\** |  | |  |  |  | **\** | | |  | | control | |  | |  | | | |
|  |  |  | **\** | |  | **\** | **\** | **\** | |  | **\** | **\** | **\** | |  | **\** | **\** |  | | |  | | maintenance medical devices | |  | |  | | | |
|  |  |  | **\** | |  |  |  |  | |  | **\** |  |  | |  |  |  | **\** | | |  | | Computer app appapplication | |  | |  | | | |
|  |  |  |  | |  |  |  |  | |  |  |  |  | |  |  |  |  | | |  | | project | |  | |  | | | |

**COURSE SPECIFICATION**

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| This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programmer specification. |

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| Institute of medical Technology – AL Mansur | 1. Teaching Institution |
| Middle Technical University – Electronic Technology - Medical devices | 2. University Department/Centre |
| Microcomputers | 3. Course title/code |
| Engineering | 4. Program(s) to which it contributes |
| Practical and Theoretical | 5. Modes of Attendance offered |
| Yearly | 6. Semester/Year |
| 2x30=60 hours Theory +2x30=60 hours practical | 7. Number of hours tuition (total) |
| 1/11/2016 | 8. Date of production/revision of this specification |
| 9. Aims of the Course: Student sergeant on: microcomputers - different kinds - architecture - languages - instructions - writing programs using these languages | |
|  | |
| 10· Learning Outcomes, Teaching ,Learning and Assessment Method | |
| A- Knowledge and Understanding  A1. Understand the principles and basics of microcomputers.  A2. Recognizes the types and advancing stages of microcomputers.  A3. Recognizes the architecture of microcomputer 8085.  A4. Learning instruction sets for microprocessor 8085 .  A5. Ability to write programs in assembly language for microprocessor 8085.  A6 . Study microprocessor 8086 and recognize its architecture and assembly language. | |
| B. Subject-specific skills  B1. Ability to work and handle computers.  B2. Ability to write and execute programs on computers using 8085 processer language. | |
| Teaching and Learning Methods | |
| Discussion, students research, projects. Lecture method, | |
| Assessment methods | |
| Written and oral examination, observation, homework, laboratory reports. | |
| C. Thinking Skills  C1.Convinced in the importance of his field of study.  C2.Apreciate the teachers and technicians effort in giving the scientific subjects.  C3.Participate in team work.  C4.Respects dedication to work and hates cheating.. | |
| Teaching and Learning Methods | |
| Lecture , Discussion , students research , projects. | |
| Assessment methods | |
| Discussion , Observation , team work. | |

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| D. General and Transferable Skills (other skills relevant to employability and personal development)  D1.Use of computers in majored field.  D2.An ability to search Information from internet.  D3.Ability to gather information and analysis and summarize main thoughts. | | | | | | | |
| 11. Course Structure | | | | | | | |
| Assessment Method | Teaching  Method | Unit/Module or Topic Title | ILOs | | Hours | Week | |
| Discussion | Lecture | Numbering systems | Revision of numbering systems and transferring ways between them | | 2 | 1 | |
| Written exam | Lecture | Introduction to microcomputers | Introduction to microcomputers | | 2 | 2 | |
| = | Lecture | microcomputer 8085 | Study programming language levels and assembly language fields and microcomputer 8085 architecture and address styles | | 4 | 3& 4 | |
| = | Lecture | Instruction collection of microprocessor 8085/ transformation instructions | Study transfer instruction: copying, immediate move, immediate loading, direct & indirect load, storage, pulling, pushing and sporadic with examples | | 4 | 5&6 | |
| = | Lecture | Mathematical instruction collection | Study mathematical instructions: all kinds of adding, all kinds of subtraction | | 4 | 7&8 | |
| = | Lecture | Mathematical instruction collection | Learn instruction for adding and subtraction with writing related programs using mathematical instructions | | 4 | 9&10 | |
| = | Lecture | Logical instruction collection | Study logical instructions: and, or, exclusive or, negation | | 4 | 11&12 | |
| Homework &Discussion | Lecture | Logical instruction collection | Study comparison instructions with examples and programs | | 2 | 13 | |
| Written exam | Lecture | Logical instruction collection | Study rotation instructions with examples and programs | | 2 | 14 | |
| Homework &reports. | Lecture | Sub instruction collection | Recognize on the formation of conditional and unconditional options | | 4 | 15&16 | |
| Homework &discussion | Solving problems | Sub instruction collection | Learn repeated loops | | 4 | 17&18 | |
| Written exam &homework &discussion | Lecture | Sub instruction collection | Learn recalling and return instructions, application programs includes above instructions | | 2 | 19 | |
| Discussion | Lecture | Schedule time for the instructions | Study stages of instructions executions, instructions period, machine period, timing scheme | | 2 | 20 | |
| Homework &discussion | Lecture | Input & Output | Learn (input, output) control interrupt, stack, application examples | | 2 | 21 | |
| Discussion | Lecture | Time delay loops | Study creation and building delay loops (one loop, two loops, three loops) | | 2 | 22 | |
| Written exam | Lecture | Time delay loops | Writing program for time delay | | 2 | 23 | |
| Exam & Discussion | Lecture | Counters | Learn programs for ascending & descending counter & for Ascending/ Descending counter & application examples on utilization delay loops in the industrial & engineering fields | | 6 | 24&25&26 | |
| Homework & Discussion | Lecture | Microprocessor 8086 | Study the microprocessor 8086 & its Architecture | | 6 | 27&28&29 | |
| Exam & Discussion | Lecture | Microprocessor 8086 | Learn instruction collection for microprocessor 8086 | | 2 | 30 | |
| 12. Infrastructure | | | | | | | |
| SDK-85 Mohammed Rafiq Ulzamman | | | | Required reading: | | |
| Training Package | | | | · CORE TEXTS | | |
| Microcomputers Techniques | | | | · COURSE MATERIALS | | |
| Circuits today, Electronic Amplifiers | | | | · OTHER | | |
| Electronic today.com, PCBheaven.com | | | | Special requirements (include for example workshops, periodicals, IT software, websites) | | |
|  | | | | Community-based facilities  (include for example, guest  Lectures , internship , field studies) | | |

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| 13. Admissions | |
| Graduate from secondary school – scientific branch | Pre-requisites |
| 100 student | Minimum number of students |
| 150 student | Maximum number of students |