**Syllabus Structure**

**CVM UNIVERSITY**

**VALLABH VIDYANAGAR – 388 120, GUJARAT**

**M. Sc. [INSTRUMENTATION & CONTROL]**

**[First Year] Structure for Semester System**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Course**  **Code** | **Subject Title** | **Class work + Seminar**  **Hours/Week** | **Total Marks** | **External Exam Marks** | **Internal Exam Marks** | **Credits** |
| **FIRST SEMESTER (650 MARKS)** | | | | | | |
| 101390101 | Transducers | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390102 | Microprocessor &  Microcontroller Systems | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390103 | Principles of Control Systems | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390107  **OR** 101390108  **OR**  101390109 | Elective Paper | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390104 | Practical | 6 | 100 | 60 | 40 | 4 |
| 101390105 | Project Work | 6 | 100 | 60 | 40 | 4 |
| 101390106 | Comprehensive Viva | 2 | 50 | 50 | --- | 1 |
| **Total Credits** | | | | | | **25** |
| **SECOND SEMESTER (650 MARKS)** | | | | | | |
| 101390201 | Analytical Instrumentation | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390202 | Advanced Microprocessor & Microcontrollers | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390203 | Computer Aided Process Control | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390207  **OR**  101390208  **OR**  101390209 | Elective Paper | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390204 | Practical | 6 | 100 | 60 | 40 | 4 |
| 101390205 | Project Work | 6 | 100 | 60 | 40 | 4 |
| 101390206 | Comprehensive Viva | 2 | 50 | 50 | --- | 1 |
| **Total Credits** | | | | | | **25** |

**Criteria for offering the Elective Papers:**

The Elective paper at M. Sc. (Instrumentation & Control) First Semester will be offered from:

101390107: Instrumentation of Processing Circuits

101390108: Network Analysis

101390109: Optoelectronics

The Elective paper at M. Sc. (Instrumentation & Control) Second Semester will be offered from:

101390207: Power Electronics

101390208: Boiler Instrumentation

101390209: Meteorological Instrumentation

**Syllabus Structure**

**CVM UNIVERSITY**

**VALLABH VIDYANAGAR – 388 120, GUJARAT**

**M. Sc. [INSTRUMENTATION & CONTROL]**

**[Second Year] Structure for Semester System**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course**  **Code** | **Subject Title** | **Class work + Seminar**  **Hours/Week** | | **Total Marks** | **External Exam Marks** | **Internal Exam Marks** | **Credits** |
| **THIRD SEMESTER (650 MARKS)** | | | | | | | |
| 101390301 | Biomedical Instrumentation | | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390302 | Industrial Communication Techniques | | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390303 | PLC – DCS - SCADA | | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390307  **OR**  101390308  **OR**  101390309 | Elective Paper | | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390304 | Practical | | 6 | 100 | 60 | 40 | 4 |
| 101390305 | Project Work | | 6 | 100 | 60 | 40 | 4 |
| 101390306 | Comprehensive Viva | | 2 | 50 | 50 | -- | 1 |
| **Total Credits** | | | | | | | **25** |
| **FOURTH SEMESTER (650 MARKS)** | | | | | | | |
| 101390401 | Medical Imaging Systems & Therapeutic Equipments | | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390402 | Fabrication & Characterization Techniques | | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390403 | Robotics & Fuzzy Logic | | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390407  **OR**  101390408  **OR**  101390409 | Elective Paper | | 3 + 1 | 100 | 60 | 40 | 4 |
| 101390404 | Practical | | 6 | 100 | 60 | 40 | 4 |
| 101390405 | Project Work | | 6 | 100 | 60 | 40 | 4 |
| 101390406 | Industrial Training Viva | | 2 | 50 | 50 | -- | 1 |
| **Total Credits** | | | | | | | **25** |

**Criteria for offering the Elective Papers:**

The Elective paper at M. Sc. (Instrumentation & Control) Third Semester will be offered from:

101390307: Satcom Instrumentation

101390308: Digital Signal Processing

101390309: CNC Machine and Programming Concept

The Elective paper at M. Sc. (Instrumentation & Control) Fourth Semester will be offered from:

101390407: Programming in C

101390408: Artificial Intelligence & Neural Networks

101390409: Nanoelectronics