# SAMRAT ASHOK TECHNOLOGICAL INSTITUTE VIDISHA (M.P.)
### (A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV Bhopal)

## Scheme of Examination (Semester-I)
## for Batch Admitted in session - 2022-23
## Bachelor of Technology (B. Tech.) – Internet of Things

| Subject Code | Subject Category | Subject Name | Maximum Marks Allotted | | | | | | | Total Marks | Contact Hrs. | | | Total Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Theory | | | | Practical | | | | L | T | P | |
| | | | ES | MS | Assignment | Quiz | ES | LW | Quiz | | | | | |
| PYB101 | BSC | Applied Physics | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| CSA 101 | ESC | Introduction to Computer Science Engineering | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| IOA103 | ESC | Basic Electrical Engineering | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| CSA102 | ESC | Digital Electronics | 60 | 20 | 10 | 10 | – | -- | -- | 100 | 3 | 0 | 0 | 3 |
| MAB101 | BSC | Linear Algebra and Calculus | 60 | 20 | 10 | 10 | – | -- | -- | 100 | 3 | 1 | 0 | 4 |
| MAC101 | MAC* | Universal Human Values | -- | -- | | -- | 60 | 20 | 20 | 100 | 0 | 0 | 2 | Grade |
| ILC100 | ILC | Extracurricular Activities | It is a one credit per year activity endorse in eight semester marksheet | | | | | | | | | | | |
| Total | | | 300 | 100 | 50 | 50 | 150 | 50 | 50 | 750 | 15 | 1 | 6 | 19 |

MST: Minimum two mid semester tests to be conducted during Semester, MAC: Mandatory courses classes will be conducted in off hours (Weekends)

| MAC | Induction Program | Non-Credit |
|---|---|---|
| HEC | NSS/NCC/NSO | Non-Credit |

**Abbreviations:** ES -End Semester, MS- Mid Semester, LW- Laboratory Work/Assignment. (L: Lecture, T: Tutorial, P: Practical) BSC- Basic Science Course, ESC- Engineering Science Course, HSMC- Humanities Science and Management Course, MAC- Mandatory, Audit Course, AC- Audit Course, HEC- Holistic Education Course, ITC- Information Technology Course, ILC-Institute Level Course, DC- Department Course, DE-Department Elective, OC- Open Course, DLC- Department Laboratory, PROJ- Project Work

# SAMRAT ASHOK TECHNOLOGICAL INSTITUTE VIDISHA (M.P.)
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**Scheme of Examination (Semester-II)**
**for Batch Admitted in session - 2022-23**
**Bachelor of Technology (B. Tech.) – Internet of Things**

| Subject Code | Subject Category | Subject Name | Maximum Marks Allotted | | | | | | | Total Marks | Contact Hrs. | | | Total Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Theory | | | | Practical | | | | L | T | P | |
| | | | ES | MS | Assignment | Quiz | ES | LW | Quiz | | | | | |
| CHB101 | BSC | Applied Chemistry | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| CSA 103 | ESC | Problem Solving Using Data Structure | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| ITC 101 | ITC | Python Programming | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| HUB 101 | HSMC | Language and Writing Skills | 60 | 20 | 10 | 10 | -- | -- | -- | 100 | 3 | 0 | 0 | 3 |
| MAB 102 | BSC | Probability Distribution and Differential Equation | 60 | 20 | 10 | 10 | – | – | -- | 100 | 3 | 1 | 0 | 4 |
| CSL 110 | ESC | Computer Workshop(Linux Lab) | – | -- | – | -- | 30 | 10 | 10 | 50 | 1 | 0 | 2 | 2 |
| MAC 102 | MAC | Professional Ethics and Social Responsibility | – | -- | -- | -- | 30 | 10 | 10 | 50 | 0 | 0 | 2 | Grade |
| ILC 100 | ILC | Extracurricular Activities | It is a one credit per year activity endorse in eight semester marksheet | | | | | | | | | | | |
| **Total** | | | 300 | 100 | 50 | 50 | 150 | 50 | 50 | 750 | 15 | 1 | 10 | 21 |

MST: Minimum two mid semester tests to be conducted during Semester, MAC: Mandatory courses classes will be conducted in off hours (Weekends)

| ILC | Internship-I (60 Hrs) Institute Level | Non-Credit |
|---|---|---|
| HEC | NSS/NCC/NSO | Non-Credit |

**SAMRAT ASHOK TECHNOLOGICAL INSTITUTE VIDISHA (M.P.)**
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| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Scheme of Examination (Semester-III)** | | | | | | | | | | | |

**Scheme of Examination (Semester-III)**

**for Batch Admitted in session - 2022-23**

**Bachelor of Technology (B. Tech.) – Internet of Things**

| Subject Code | Subject Category | Subject Name | Maximum Marks Allotted | | | | | | | Total Marks | Contact Hrs. per week | | | Total Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Theory | | | | Practical | | | | | | | |
| | | | ES | MS | Assignment | Quiz | ES | LW | Quiz | | L | T | P | |
| MAB-301 | BSC | Discrete Mathematics | 60 | 20 | 10 | 10 | -- | -- | -- | 100 | 3 | 1 | 0 | 4 |
| IO-302 | DC | Analysis and Design of Algorithms | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| IO-303 | DC | Object Oriented Programming | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| IO-304 | DC | Electronic Devices & Circuits | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| OE-305 | OE | OE-1 | 60 | 20 | 10 | 10 | -- | -- | -- | 100 | 3 | 0 | 0 | 3 |
| IO-306 | DL | Internet Programming | -- | -- | -- | -- | 30 | 10 | 10 | 50 | 0 | 0 | 4 | 2 |
| IO-307 | ILC | Internship-I (60 Hrs) Institute Level (Evaluation) | -- | -- | -- | -- | - | 50 | -- | 50 | - | - | 2 | 2 |
| | | **Total** | **300** | **100** | **50** | **50** | **120** | **90** | **40** | **750** | **15** | **1** | **12** | **23** |
| | ILC | Extracurricular Activities | Based on participation in extra curriculum activities, one credit per year to be endorsed in the eight semester mark sheet. | | | | | | | | | | | |
| MAC-308 | MAC* | Energy, Ecology, Environment & Society | - | 20 | 20 | 10 | - | - | - | - | - | - | - | Grade |
| HUM-309 | HEC* | Holistic Education Course | - | 20 | 20 | 10 | - | - | - | - | - | - | - | Grade |

MS: Minimum two mid semester tests are to be conducted during Semester, (L-Lecture, T- Tutorial, P-Practical )
MAC* -Mandatory audit course & & HEC*- Holistic education courses classes will be conducted in off hours (Weekends)

| Open Courses Offered by IoT in Session: 2023-24 Semester III (For the students of other departments). Students must check the prerequisite of each course. | | | |
|---|---|---|---|
| **Open Elective-I (OE-305)** | **A** | **B** | **C** |
| | Computer System Organisation | Object Oriented Programming | Data Structure |
| Prerequisite | Fundamental knowledge of Digital Electronics | Fundamental knowledge of Programming Skills | Logical Thinking and Computer Fundamentals |
| Remark | Open to All | Not Applicable for - CSE and Allied branches | Not Applicable for - CSE and Allied branches, EC |

# SAMRAT ASHOK TECHNOLOGICAL INSTITUTE VIDISHA (M.P.)
## (A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV Bhopal)

### Scheme of Examination (Semester-IV)

### for Batch Admitted in session - 2022-23

### Bachelor of Technology (B. Tech.) – Internet of Things

| Subject Code | Subject Category | Subject Name | Maximum Marks Allotted | | | | | | | | Contact Hrs. per week | | | Total Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Theory | | | | Practical | | | Total Marks | L | T | P | |
| | | | ES | MS | Assignment | Quiz | ES | LW | Quiz | | | | | |
| IO-401 | DC | Microprocessors and Microcontrollers | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| IO-402 | DC | Database Management System | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| IO-403 | DC | Signals and Systems | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| IO-404 | DC | Foundation of IoT | 60 | 20 | 10 | 10 | - | - | - | 100 | 3 | 1 | 0 | 4 |
| OE-405 | OE | OE-II | 60 | 20 | 10 | 10 | - | - | - | 100 | 3 | 0 | 0 | 3 |
| IO-406 | DLC | Advance Java Programming | - | - | - | - | 60 | 20 | 20 | 100 | 0 | 0 | 4 | 2 |
| | | **Total** | 300 | 100 | 50 | 50 | 150 | 50 | 50 | 750 | 15 | 1 | 10 | 21 |
| | ILC | Extracurricular Activities | Based on participation in extra curriculum activities, one credit per year to be endorsed in the eight semester mark sheet. | | | | | | | | | | | |
| HUM 408 | HEC* | Holistic Education Course | - | 20 | 20 | 10 | - | - | - | - | - | - | - | Grade |
| MS: Minimum two mid semester tests are to be conducted during Semester, (L-Lecture, T- Tutorial, P-Practical ) HEC*- Holistic education courses classes will be conducted in off hours (Weekends) | | | | | | | | | | | | | | |

| Open Course Offered by IoT in Session: 2023-24 Semester IV (For the students of other departments). Students must check the prerequisite of each course. | | | |
|---|---|---|---|
| **Open Course-II (OE-405)** | **A** | **B** | **C** |
| | Microprocessor | Foundation of IoT | Foundation of Blockchain Technology |
| **Prerequisite** | Digital Electronics | -- | Basic knowledge of Mathematics |
| **Remark** | Open to All | Open to All | Not applicable for - Block Chain |

# SAMRAT ASHOK TECHNOLOGICAL INSTITUTE VIDISHA (M.P.)
### (A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV Bhopal)

| | | | Scheme of Examination (Semester-V) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **for Batch Admitted in session - 2022-23 w.e.f. July - 2024** | | | | | | | | | | | |
| | | | **Bachelor of Technology (B. Tech.) – Internet of Things** | | | | | | | | | | | |
| **Subject Code** | **Subject Category** | **Subject Name** | **Maximum Marks Allotted** | | | | | | | **Total Marks** | **Contact Hrs. per week** | | | **Total Credits** |
| | | | **Theory** | | | | **Practical** | | | | | | | |
| | | | ES | MS | Assignment | Quiz | ES | LW | Quiz | | L | T | P | |
| IO 501 | DC | Artificial Intelligence & Machine Learning | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| IO 502 | DC | Operating Systems for IoT | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| IO 503 | DC | Ad-hoc & Sensor Networks | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| IO 504 | DE | DE -1 | 60 | 20 | 10 | 10 | -- | -- | -- | 100 | 3 | 0 | 0 | 3 |
| OE 505 | OC | OC-3 | 60 | 20 | 10 | 10 | -- | -- | -- | 100 | 3 | 0 | 0 | 3 |
| IO 506 | DLC | IoT Lab | -- | -- | -- | -- | 30 | 10 | 10 | 50 | 0 | 0 | 4 | 2 |
| IO 507 | ILC | Internship-II (60 Hrs) Institute Level (Evaluation) | -- | -- | -- | -- | | 50 | -- | 50 | - | - | 4 | 2 |
| **Total** | | | **300** | **100** | **50** | **50** | **120** | **90** | **40** | **750** | **15** | **-** | **14** | **22** |
| | ILC | Extracurricular Activities | It is a one credit per year activity to be endorsed in eight semester marks sheet. | | | | | | | | | | | |

| | DE -1 | OC -3 |
|---|---|---|
| A | IoT Communication Protocols | IoT Communication Protocols |
| B | 5G and IoT Technologies | Operating Systems for IoT |
| C | Wireless network | Ad-hoc & Sensor Networks |

**Minor Degree and Honour Degree:**

**Students can opt any number of subjects depending on the number of credits he/she wants to earn in a particular semester for Honours/Minor Degree. Total 20 credits required for Honours/Minor Degree (From V to VIII Semester – Refer pool of attached subjects for Honours/Minor Degree)**

| | | | Scheme of Examination (Semester-VI) | | | | | | | | | | | |
| | | | for Batch Admitted in session - 2022-23 w.e.f. July - 2024 | | | | | | | | | | | |
| | | | Bachelor of Technology (B. Tech.) – **Internet of Things** | | | | | | | | | | | |

| Subject Code | Subject Category | Subject Name | Maximum Marks Allotted | | | | | | | | Contact Hrs. per week | | | Total Credits |
| | | | Theory | | | | Practical | | | Total Marks | L | T | P | |
| | | | ES | MS | Assignment | Quiz | ES | LW | Quiz | | | | | |
| IO 601 | DC | IoT Cloud Processing and Analytics | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| IO 602 | DC | Programming Languages for IoT | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 4 |
| IO 603 | DE | DE-2 | 60 | 20 | 10 | 10 | | | | 100 | 3 | 0 | 0 | 3 |
| IO 604 | DE | DE -3 | 60 | 20 | 10 | 10 | | | | 100 | 3 | 1 | 0 | 4 |
| OE 605 | OC | OC – 4 | 60 | 20 | 10 | 10 | | | | 100 | 3 | 0 | 0 | 3 |
| IO 606 | DLC | Lab View | | | | | 30 | 10 | 10 | 50 | 0 | 0 | 4 | 2 |
| IO 607 | DLC | Minor Project | | | | | 50 | 50 | | 100 | 0 | 0 | 4 | 2 |
| | | | 300 | 100 | 50 | 50 | 140 | 80 | 30 | 750 | 15 | `1 | 12 | 22 |
| | ILC | Extracurricular Activities | It is a one credit per year activity endorse in eight semester mark sheet | | | | | | | | | | | |
| MST: Minimum two mid semester tests to be conducted during Semester | | | | | | | | | | | | | | |

| | DE -2 | DE -3 | OC – 4 |
| --- | --- | --- | --- |
| A | IoT Security | Mobile Application Development for IoT | IoT Cloud Processing and Analytics |
| B | Cryptography | Web Engineering | Programming Languages for IoT |
| C | Information Theory and Coding | UI/UX | IoT Security |

**Minor Degree and Honour Degree:** List of MOOCs/SWAYAM Courses will be notified before the start of the semester

**Students can opt any number of subjects depending on the number of credits he/she wants to earn in a particular semester for Honours/Minor Degree. Total 20 credits required for Honours/Minor Degree (From V to VIII Semester – Refer pool of attached subjects for Honours/Minor Degree)**

# SAMRAT ASHOK TECHNOLOGICAL INSTITUTE VIDISHA (M.P.)
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### Scheme of Examination (Semester-VII)
### for Batch Admitted in session - 2022-23 w.e.f. July - 2024
### Bachelor of Technology (B. Tech.) – Internet of Things

| Subject Code | Subject Category | Subject Name | Maximum Marks Allotted | | | | | | | Total Marks | Contact Hrs. per week | | | Total Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Theory | | | | Practical | | | | | | | |
| | | | ES | MS | Assignment | Quiz | ES | LW | Quiz | | L | T | P | |
| IO 701 | DC | Data Analytics for IoT | 60 | 20 | 10 | 10 | 30 | 10 | 10 | 150 | 3 | 0 | 2 | 04 |
| IO 702 | DE | DE-4 | 60 | 20 | 10 | 10 | -- | -- | | 100 | 3 | 1 | 0 | 04 |
| IO 703 | DE | DE-5 | 60 | 20 | 10 | 10 | -- | -- | | 100 | 3 | 1 | 0 | 04 |
| IO 704 | PROJ | Major Project Prelim | -- | -- | -- | | 60 | 40 | | 100 | 0 | 0 | 8 | 04 |
| IO 705 | ILC | Internship-III (Completed in Third Year) | -- | -- | -- | | | 50 | | 50 | 0 | 0 | 4 | 02 |
| **Total** | | | **180** | **60** | **30** | **30** | **90** | **100** | **10** | **500** | **9** | **2** | **14** | **18** |
| | ILC | Extracurricular Activities | | | It is a one credit per year activity endorse in eight semester mark sheet | | | | | | | | | |
| MST: Minimum two mid semester tests to be conducted during Semester | | | | | | | | | | | | | | |

| | DE -4 | DE -5 |
|---|---|---|
| **A** | IoT System Architectures | Industrial IoT |
| **B** | Embedded Systems Design | AR and VR |
| **C** | Real time Systems | Edge Computing |

**Minor Degree and Honour Degree: List of MOOCs/SWAYAM Courses will be notified before the start of the semester**

**Students can opt any number of subjects depending on the number of credits he/she wants to earn in a particular semester for Honours/Minor Degree. Total 20 credits required for Honours/Minor Degree (From V to VIII Semester – Refer pool of attached subjects for Honours/Minor Degree)**

## SAMRAT ASHOK TECHNOLOGICAL INSTITUTE VIDISHA (M.P.)
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### Scheme of Examination (Semester-VIII)
#### for Batch Admitted in session - 2022-23 w.e.f. July - 2024
### Bachelor of Technology (B. Tech.) -Internet of Things

| Subject Code | Subject Category | Subject Name | Maximum Marks Allotted | | | | | | Contact Hrs. per week | | | Total Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Theory | | | Practical | | Total Marks | L | T | P | |
| | | | ES | MS | Assignment/ Quiz | ES | LW/ Quiz | | | | | |
| IO 801 | PROJ | Major Project | | | | 300 | 200 | 500 | 0 | 0 | 20 | 10 |
| IO 802 | ILC | Extracurricular Activities | | It is a one credit per year activity endorsed in eight semester mark sheet | | | | | | | | 04 |
| Total | | | | | | 300 | 200 | 500 | | | | 14 |

**Minor Degree and Honour Degree:** List of MOOCs/SWAYAM Courses will be notified before the start of the semester

Students can opt any number of subjects depending on the number of credits he/she wants to earn in a particular semester for Honours/Minor Degree. Total 20 credits required for Honours/Minor Degree (From V to VIII Semester – Refer pool of attached subjects for Honours/Minor Degree)

**Tentative Pool of subjects for Honours and Minor Degree**

**SWAYAM/NPTEL/MOOC's Courses**

| S. No. | Honours Degree for students of parent department | Credit | Minor Degree for students of other department | Credit |
|---|---|---|---|---|
| 1. | Cloud Computing | 3 | Analog Electronic Circuits - IITKGP | 3 |
| 2. | Electronic Systems Design: Hands-on Circuits and PCB Design with CAD Software | 3 | Computer Architecture | 3 |
| 3. | Web Based Technologies and Multimedia Application | 3 | Fundamentals of Communication System and Its Application | 3 |
| 4. | System Design Through Verilog | 2 | Introductory concept of Digital Computing | 3 |
| 5. | Deep Learning for Computer Vision | 3 | Practical Cyber Security for Cyber Security Practitioners | 3 |
| 6. | Cyber Security, Tools, Techniques and Counter Measures | 3 | Google Cloud Computing Foundations | 2 |
| 7. | Smart Grid: Basics to Advanced Technologies | 3 | Introduction To Industry 4.0 And Industrial Internet Of Things | 3 |
| 8. | Enclosure Design of Electronics Equipment | 3 | Introduction To Internet Of Things | 3 |

*Note: Those subjects which are already studied in the core scheme from I to VIII semester cannot be opted.

20 additionally to be earned between V to VIII semester Maximum 6 credits per semester from V semester onwards will be permitted.