| UNIVERSITY DEPARTMENTS , RTU, KOTA           |                               |                |               |   |      |                   |       |                          |                          |                 |  |  |
|--|-------------------------------|----------------|---------------|---|------|-------------------|-------|--------------------------|--------------------------|-----------------|--|--|
|  | LIST OF OPEN CATEGORY COURSES |                |               |   |      |                   |       |                          |                          |                 |  |  |
| Department offering Open category course     | Year/Se<br>m                  | Course<br>Code | Paper<br>Code | Subject Name  | Туре | CORE/ELE<br>CTIVE | Group | Max<br>Marks<br>Internal | Max<br>Marks<br>External | Credit/<br>Unit |  |  |
| Electronics and<br>Communication Engineering | 4 Sem.                        | EIL241         | EIL241        | Introduction to<br>Instrumentation System and<br>Transducer | тн   | ELECTIVE          | 7     | 50                       | 100                      | 3               |  |  |
| Electronics and<br>Communication Engineering | 4 Sem.                        | EIL242         | EIL242        | Linear Integrated Circuits                                  | тн   | ELECTIVE          | 7     | 50                       | 100                      | 3               |  |  |
| Electronics and<br>Communication Engineering | 4 Sem.                        | EIL243         | EIL243        | Industrial Automation                                       | тн   | ELECTIVE          | 7     | 50                       | 100                      | 3               |  |  |
| Electronics and<br>Communication Engineering | 4 Sem.                        | ECL241         | ECL241        | Digital System Design                                       | тн   | ELECTIVE          | 7     | 50                       | 100                      | 3               |  |  |
| Electronics and Communication Engineering    | 4 Sem.                        | ECL242         | ECL242        | Control System  | тн   | ELECTIVE          | 7     | 50                       | 100                      | 3               |  |  |
| Electronics and Communication Engineering    | 4 Sem.                        | ECL243         | ECL243        | CONSUMER ELECTRONICS  | тн   | ELECTIVE          | 7     | 50                       | 100                      | 3               |  |  |
| Mechanical Engineering                       | 4 Sem.                        | MEL215         | MEL215        | Industrial Safety   | тн   | ELECTIVE          | 21    | 50                       | 100                      | 3               |  |  |
| Mechanical Engineering                       | 4 Sem.                        | MEL216         | MEL216        | Total Quality Management                                    | TH   | ELECTIVE          | 21    | 50                       | 100                      | 3               |  |  |
| Petroleum and Petrochemical<br>Engineering   | 4 Sem.                        | PEL209         | PEL209        | Unit Operation in industries                                | тн   | ELECTIVE          | 12    | 50                       | 100                      | 3               |  |  |
| Computer Science and<br>Engineering          | 4 Sem.                        | CSL282         | 820CE         | Artificial Intelligence and Applications                    | тн   | ELECTIVE          | 10    | 50                       | 100                      | 3               |  |  |

| Computer Science and                         |        | 001.004 | 04005  | - 1  | <b>-</b> |          | 10 |    | 400 |   |
|--|--------|---------|--------|--|----------|----------|----|----|-----|---|
| Engineering                                  | 4 Sem. | CSL284  | 84OCE  | Fundamental of DBMS                                      | TH       | ELECTIVE | 10 | 50 | 100 | 3 |
| Computer Science and Engineering             | 4 Sem. | CSL285  | 85OCE  | Software Tools and Techniques                            | TH       | ELECTIVE | 10 | 50 | 100 | 3 |
| Civil Engineering                            | 4 Sem. | CEL209  | CEL209 | Disaster Management                                      | TH       | ELECTIVE | 12 | 50 | 100 | 3 |
| Electrical Engineering                       | 4 Sem. | EEL104  | EEL104 | Electrical Machines and Drives                           | TH       | ELECTIVE | 11 | 50 | 100 | 3 |
| Electronics and<br>Communication Engineering | 5 Sem. | EIL356  | EIL356 | Basic Biomedical Engineering                             | TH       | ELECTIVE | 7  | 50 | 100 | 3 |
| Electronics and<br>Communication Engineering | 5 Sem. | EIL357  | EIL357 | Measurement And<br>Instrumentation                       | TH       | ELECTIVE | 7  | 50 | 100 | 3 |
| Electronics and<br>Communication Engineering | 5 Sem. | EIL358  | EIL358 | SMART AGRICULTURE  | TH       | ELECTIVE | 7  | 50 | 100 | 3 |
| Electronics and<br>Communication Engineering | 5 Sem. | ECL356  | ECL356 | Telecommunication<br>Engineering                         | ТН       | ELECTIVE | 7  | 50 | 100 | 3 |
| Electronics and<br>Communication Engineering | 5 Sem. | ECL357  | ECL357 | Industrial Electronic System<br>Design                   | TH       | ELECTIVE | 7  | 50 | 100 | 3 |
| Electronics and Communication Engineering    | 5 Sem. | ECL358  | ECL358 | Electronics in Agriculture                               | TH       | ELECTIVE | 7  | 50 | 100 | 3 |
| Mechanical Engineering                       | 5 Sem. | MEL214  | MEL214 | Research Methodology and<br>Intellectual Property Rights | TH       | ELECTIVE | 17 | 50 | 100 | 3 |
| Mechanical Engineering                       | 5 Sem. | MEL336  | MEL336 | Solar Engineering  | TH       | ELECTIVE | 17 | 50 | 100 | 3 |
| Petroleum and Petrochemical<br>Engineering   | 5 Sem. | PEL312  | PEL312 | Transportation of Petrouem<br>Products                   | TH       | ELECTIVE | 9  | 50 | 100 | 3 |

|  | I      | I      | 1      |  | l  | 1        | I  |    |     | 1 |
|--|--------|--------|--------|--|----|----------|----|----|-----|---|
| Petroleum and Petrochemical<br>Engineering   | 5 Sem. | PEL313 | PEL313 | Modern Separation Techniques                 | тн | ELECTIVE | 9  | 50 | 100 | 3 |
| Computer Science and Engineering             | 5 Sem. | CSL273 | 730CO  | Fundamental of Computer<br>Networks          | тн | ELECTIVE | 11 | 50 | 100 | 3 |
| Computer Science and<br>Engineering          | 5 Sem. | CSL274 | 740CO  | Operating System Concepts                    | TH | ELECTIVE | 11 | 50 | 100 | 3 |
| Computer Science and Engineering             | 5 Sem. | CSL275 | 75OCO  | Cloud Computing and Applications             | TH | ELECTIVE | 11 | 50 | 100 | 3 |
| Computer Science and<br>Engineering          | 5 Sem. | CSL276 | 76OCO  | Cyber Security                               | TH | ELECTIVE | 11 | 50 | 100 | 3 |
| Civil Engineering                            | 5 Sem. | CEL317 | CEL317 | Remote Sensing Essentials                    | TH | ELECTIVE | 10 | 50 | 100 | 3 |
| Electrical Engineering                       | 5 Sem. | EEL105 | EEL105 | Power Generation Sources                     | TH | ELECTIVE | 13 | 50 | 100 | 3 |
| Electronics and<br>Communication Engineering | 6 Sem. | EIL366 | EIL366 | Process Control System                       | TH | ELECTIVE | 7  | 50 | 100 | 4 |
| Electronics and<br>Communication Engineering | 6 Sem. | EIL367 | EIL367 | Industrial Instrumentation                   | тн | ELECTIVE | 7  | 50 | 100 | 4 |
| Electronics and<br>Communication Engineering | 6 Sem. | EIL368 | EIL368 | Neural Network And Fuzzy<br>Logic Controller | TH | ELECTIVE | 7  | 50 | 100 | 4 |
| Electronics and<br>Communication Engineering | 6 Sem. | ECL366 | ECL366 | Digital Signal Processing                    | TH | ELECTIVE | 7  | 50 | 100 | 4 |
| Electronics and<br>Communication Engineering | 6 Sem. | ECL367 | ECL367 | Digital Image and Video<br>Processing        | TH | ELECTIVE | 7  | 50 | 100 | 4 |
| Electronics and<br>Communication Engineering | 6 Sem. | ECL368 | ECL368 | Communication Systems                        | TH | ELECTIVE | 7  | 50 | 100 | 4 |
| Mechanical Engineering                       | 6 Sem. | MEL317 | MEL317 | Lean and Agile Manufacturing                 | ТН | ELECTIVE | 16 | 50 | 100 | 4 |

| Mechanical Engineering                       | 6 Sem. | MEL412 | MEL412 | Rapid Prototyping                           | TH | ELECTIVE | 16 | 50 | 100 | 4 |
|--|--------|--------|--------|---|----|----------|----|----|-----|---|
| Mechanical Engineering                       | 6 Sem. | MEL413 | MEL413 | Business Analytics                          | TH | ELECTIVE | 16 | 50 | 100 | 4 |
| Mechanical Engineering                       | 6 Sem. | MEL415 | MEL415 | Computer Aided<br>Manufacturing             | TH | ELECTIVE | 16 | 50 | 100 | 4 |
| Petroleum and Petrochemical<br>Engineering   | 6 Sem. | PEL314 | PEL314 | Hydrocarbon Engineering                     | TH | ELECTIVE | 8  | 50 | 100 | 4 |
| Petroleum and Petrochemical<br>Engineering   | 6 Sem. | PEL315 | PEL315 | Unconvetional Energy<br>Resources           | тн | ELECTIVE | 8  | 50 | 100 | 4 |
| Computer Science and<br>Engineering          | 6 Sem. | CSL281 | 810CE  | Basics of Big Data Analysis                 | TH | ELECTIVE | 13 | 50 | 100 | 4 |
| Computer Science and Engineering             | 6 Sem. | CSL283 | 83OCE  | Internet of Things Concepts                 | ТН | ELECTIVE | 13 | 50 | 100 | 4 |
| Computer Science and Engineering             | 6 Sem. | CSL286 | 860CE  | Fundamental of Digital Image Processing     | ТН | ELECTIVE | 13 | 50 | 100 | 4 |
| Computer Science and Engineering             | 6 Sem. | CSL287 | 87OCE  | Nature Inspired Algorithms and Applications | TH | ELECTIVE | 13 | 50 | 100 | 4 |
| Civil Engineering                            | 6 Sem. | CEL315 | CEL315 | Green Building Technology                   | TH | ELECTIVE | 8  | 50 | 100 | 4 |
| Electrical Engineering                       | 6 Sem. | EEL106 | EEL106 | Energy Audit and Demand side Management     | TH | ELECTIVE | 11 | 50 | 100 | 4 |
| Electronics and<br>Communication Engineering | 7 Sem. | EIL476 | EIL476 | Distributed Control System                  | TH | ELECTIVE | 5  | 50 | 100 | 4 |
| Electronics and<br>Communication Engineering | 7 Sem. | EIL477 | EIL477 | Optical Instrumentation                     | TH | ELECTIVE | 5  | 50 | 100 | 4 |
| Electronics and Communication Engineering    | 7 Sem. | EIL478 | EIL478 | Digital Image Processing                    | TH | ELECTIVE | 5  | 50 | 100 | 4 |
|  |        |        |        |   |    |          |    |    |     |   |

| 7 Sem. | ECL476  | ECL476  | Embedded System   | тн  | ELECTIVE   | 5  | 50  | 100   | 4   |
|--------|---|---|---|---|--|--|---|---|---|
| 7 Sem. | ECL477  | ECL477  | Digital System Design with FPGA   | тн  | ELECTIVE   | 5  | 50  | 100   | 4   |
| 7 Sem. | ECL478  | ECL478  | Micro-Nano System   | тн  | ELECTIVE   | 5  | 50  | 100   | 4   |
| 7 Sem. | MEL414  | MEL414  | Reliability and Maintainability   | тн  | ELECTIVE   | 14   | 50  | 100   | 4   |
| 7 Sem. | MEL416  | MEL416  | Project Management  | ТН  | ELECTIVE   | 14   | 50  | 100   | 4   |
| 7 Sem. | PEL409  | PEL409  | Introduction to Oil and Gas<br>Engineering  | тн  | ELECTIVE   | 5  | 50  | 100   | 4   |
| 7 Sem. | CSL271  | 710CO   | Data Structures   | тн  | ELECTIVE   | 8  | 50  | 100   | 4   |
| 7 Sem. | CSL272  | 720CO   | Concepts of Object Oriented Programming   | ТН  | ELECTIVE   | 8  | 50  | 100   | 4   |
| 7 Sem. | CSL277  | 770CO   | Robotics  | ТН  | CORE   | 8  | 50  | 100   | 4   |
| 7 Sem. | CSL278  | 780CO   | Basics of Soft Computing<br>Techniques  | TH  | ELECTIVE   | 8  | 50  | 100   | 4   |
| 7 Sem. | CEL316  | CEL316  | Safety Management in Construction   | TH  | ELECTIVE   | 13   | 50  | 100   | 4   |
| 7 Sem. | EEL107  | EEL107  | Industrial Electrical Systems   | тн  | ELECTIVE   | 10   | 50  | 100   | 4   |
|        | 7 Sem. | 7 Sem. ECL477 7 Sem. ECL478 7 Sem. MEL414 7 Sem. MEL416 7 Sem. PEL409 7 Sem. CSL271 7 Sem. CSL272 7 Sem. CSL277 7 Sem. CSL278 7 Sem. CEL316 | 7 Sem. ECL477 ECL477 7 Sem. ECL478 ECL478 7 Sem. MEL414 MEL414 7 Sem. MEL416 MEL416 7 Sem. PEL409 PEL409 7 Sem. CSL271 710C0 7 Sem. CSL272 720C0 7 Sem. CSL277 770C0 7 Sem. CSL278 780C0 7 Sem. CEL316 CEL316 | 7 Sem. ECL477 ECL477 Digital System Design with FPGA  7 Sem. ECL478 ECL478 Micro-Nano System  7 Sem. MEL414 MEL414 Reliability and Maintainability  7 Sem. MEL416 MEL416 Project Management  7 Sem. PEL409 PEL409 Introduction to Oil and Gas Engineering  7 Sem. CSL271 710C0 Data Structures  7 Sem. CSL272 720C0 Concepts of Object Oriented Programming  7 Sem. CSL277 770C0 Robotics  7 Sem. CSL278 780C0 Basics of Soft Computing Techniques  7 Sem. CEL316 CEL316 CEL316 Safety Management in Construction | 7 Sem. ECL477 ECL477 Digital System Design with FPGA  7 Sem. ECL478 ECL478 Micro-Nano System  7 Sem. MEL414 MEL414 Reliability and Maintainability TH  7 Sem. MEL416 MEL416 Project Management TH  7 Sem. PEL409 PEL409 Introduction to Oil and Gas Engineering  7 Sem. CSL271 710C0 Data Structures  7 Sem. CSL272 720C0 Concepts of Object Oriented Programming  7 Sem. CSL277 770C0 Robotics  TH  7 Sem. CSL278 780C0 Basics of Soft Computing Techniques  7 Sem. CEL316 CEL316 Safety Management in Construction  TH | 7 Sem. ECL477 ECL477 Digital System Design with FPGA  TH ELECTIVE  7 Sem. ECL478 ECL478 Micro-Nano System  TH ELECTIVE  7 Sem. MEL414 MEL414 Reliability and Maintainability  TH ELECTIVE  7 Sem. MEL416 MEL416 Project Management  TH ELECTIVE  7 Sem. PEL409 PEL409 Introduction to Oil and Gas Engineering  TH ELECTIVE  7 Sem. CSL271 710C0 Data Structures  TH ELECTIVE  7 Sem. CSL272 720C0 Concepts of Object Oriented Programming  7 Sem. CSL277 770C0 Robotics  TH CORE  7 Sem. CSL278 780C0 Basics of Soft Computing Techniques  7 Sem. CEL316 CEL316 CEL316 Safety Management in Construction | 7 Sem. ECL477 ECL477 Digital System Design with FPGA  TH ELECTIVE 5  7 Sem. ECL478 ECL478 Micro-Nano System TH ELECTIVE 5  7 Sem. MEL414 MEL414 Reliability and Maintainability TH ELECTIVE 14  7 Sem. MEL416 MEL416 Project Management TH ELECTIVE 14  7 Sem. PEL409 PEL409 Introduction to Oil and Gas Engineering TH ELECTIVE 5  7 Sem. CSL271 710C0 Data Structures TH ELECTIVE 8  7 Sem. CSL272 720C0 Concepts of Object Oriented Programming TH ELECTIVE 8  7 Sem. CSL277 770C0 Robotics TH CORE 8  7 Sem. CSL278 780C0 Basics of Soft Computing TH ELECTIVE 8  7 Sem. CEL316 CEL316 CEL316 Construction TH ELECTIVE 13 | 7 Sem. ECL477 ECL477 Digital System Design with FPGA  TH ELECTIVE 5 50  7 Sem. ECL478 ECL478 Micro-Nano System TH ELECTIVE 5 50  7 Sem. MEL414 MEL414 Reliability and Maintainability TH ELECTIVE 14 50  7 Sem. MEL416 MEL416 Project Management TH ELECTIVE 14 50  7 Sem. PEL409 PEL409 Introduction to Oil and Gas Engineering TH ELECTIVE 5 50  7 Sem. CSL271 710C0 Data Structures TH ELECTIVE 8 50  7 Sem. CSL272 720C0 Concepts of Object Oriented Programming TH ELECTIVE 8 50  7 Sem. CSL277 770C0 Robotics TH CORE 8 50  7 Sem. CSL278 780C0 Basics of Soft Computing Techniques TH ELECTIVE 8 50  7 Sem. CEL316 CEL316 CEL316 Safety Management in Construction TH ELECTIVE 13 50 | 7 Sem. ECL477 ECL477 FPGA  TH ELECTIVE 5 50 100  7 Sem. ECL478 ECL478 Micro-Nano System TH ELECTIVE 5 50 100  7 Sem. MEL414 MEL414 Reliability and Maintainability TH ELECTIVE 14 50 100  7 Sem. MEL416 MEL416 Project Management TH ELECTIVE 14 50 100  7 Sem. PEL409 PEL409 Introduction to Oil and Gas Engineering TH ELECTIVE 5 50 100  7 Sem. CSL271 710C0 Data Structures TH ELECTIVE 8 50 100  7 Sem. CSL272 720C0 Concepts of Object Oriented Programming TH ELECTIVE 8 50 100  7 Sem. CSL272 770C0 Robotics TH CORE 8 50 100  7 Sem. CSL278 780C0 Basics of Soft Computing TH ELECTIVE 8 50 100  7 Sem. CSL278 780C0 Basics of Soft Computing TH ELECTIVE 8 50 100  7 Sem. CEL316 CEL316 CEL316 COnstruction TH ELECTIVE 13 50 100 |