

## Annexure-I

## GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

Department of Electronics and Telecommunication Engineering

Scheme for Semester I B. Tech. (Electronics and Telecommunication Engineering) with effect from academic year 2023-24 (As per NEP 2020)

| Course Cod                                | Name of the Course   | Component as per NEP                 | Teaching Scheme     |          |           |   | Evaluation Scheme                    |           |            |            |          | Credit     |           |
|---|--|--------------------------------------|---------------------|----------|-----------|---|--------------------------------------|-----------|------------|------------|----------|------------|-----------|
|   |  |                                      | L                   | T        | P         | Total                                       | Theory                               |           |            | Practical  |          |            | Total     |
|   |  |                                      |                     |          |           |   | MSE                                  | ISA       | ESE        | ICA        | ESE      |            |           |
| SH100AN                                   | Induction Program [Includes Universal Human Values (UHV - I module)] | Mandatory Audit Course as per AICTE  | ...                 | ...      | ...       | 4   | 30                                   | 10        | 60         | 50         | ...      | 50         | AU        |
| SH101N                                    | Engineering Mathematics I  | BSC                                  | 3                   | 1        | ...       | 4   | 30                                   | 10        | 60         | ...        | ...      | 100        | 4         |
| SH102N                                    | Engineering Chemistry  | BSC                                  | 3                   | ...      | ...       | 3   | 30                                   | 10        | 60         | ...        | ...      | 100        | 3         |
| ME151N                                    | Engineering Graphics   | ESC                                  | 3                   | ...      | ...       | 3   | 30                                   | 10        | 60         | ...        | ...      | 100        | 3         |
| CO101N                                    | Fundamentals of Computer Science and Engineering                     | ESC                                  | 3                   | ...      | ...       | 3   | 30                                   | 10        | 60         | ...        | ...      | 100        | 3         |
| ME152N                                    | Engineering Exploration Workshop                                     | VSEC (Skill)                         | ...                 | ...      | 4         | 4   | ...                                  | ...       | ...        | 50         | ...      | 50         | 2         |
| SH103N                                    | Engineering Chemistry Lab  | BSC                                  | ...                 | ...      | 2         | 2   | ...                                  | ...       | ...        | 50         | ...      | 50         | 1         |
| ME153N                                    | Engineering Graphics Lab   | ESC                                  | ...                 | ...      | 2         | 2   | ...                                  | ...       | ...        | 50         | ...      | 50         | 1         |
| CO102N                                    | Fundamentals of Computer Science and Engineering L                   | ESC                                  | ...                 | ...      | 2         | 2   | ...                                  | ...       | ...        | 50         | ...      | 50         | 1         |
| LL102N                                    | Liberal Learning Course (Yoga and Nutrition)                         | LLC                                  | ...                 | ...      | 4         | 4   | ...                                  | ...       | ..         | 50         | ...      | 50         | 2         |
| SH100N                                    | Ability Enhancement Course (English)                                 | AEC (HSSM)                           | 1                   | ...      | 2         | 3   | ...                                  | ...       | ..         | 50         | ...      | 50         | 2         |
| <b>Total</b>                              |  |                                      | <b>13</b>           | <b>1</b> | <b>16</b> | <b>30</b>                                   | <b>120</b>                           | <b>40</b> | <b>240</b> | <b>300</b> | <b>0</b> | <b>700</b> | <b>22</b> |
| <b>L : Lecture</b>                        |  | <b>T: Tutorial</b>                   | <b>P: Practical</b> |          |           |   | <b>MSE: Mid Semester Examination</b> |           |            |            |          |            |           |
| <b>ISA :Internal Sessional Assessment</b> |  | <b>ESE: End Semester Examination</b> |                     |          |           | <b>ICA : Internal Contineous Accessment</b> |                                      |           |            |            |          |            |           |

**GOVERNMENT COLLEGE OF ENGINEERING, JALGAON**

Department of Electronics and Telecommunication Engineering

Scheme for Semester II B. Tech. (Electronics and Telecommunication Engineering) with effect from academic year 2023-24 (As per NEP 2020)

| Course Cod   | Name of the Course                       | Component as per NEP | Teaching Scheme |          |           |           | Evaluation Scheme |           |            |            |          |            | Credit    |
|--------------|--|----------------------|-----------------|----------|-----------|-----------|-------------------|-----------|------------|------------|----------|------------|-----------|
|              |  |                      | L               | T        | P         | Total     | Theory            |           |            | Practical  |          | Total      |           |
|              |  |                      |                 |          |           |           | MSE               | ISA       | ESE        | ICA        | ESE      |            |           |
| SH151N       | Engineering Mathematics II               | BSC                  | 3               | 1        | ...       | 4         | 30                | 10        | 60         | ...        | ...      | 100        | 4         |
| SH152N       | Engineering Physics                      | BSC                  | 3               | ...      | ...       | 3         | 30                | 10        | 60         | ...        | ...      | 100        | 3         |
| ET151N       | Basic Electronics Engineering            | PCC                  | 3               | ...      | ...       | 3         | 30                | 10        | 60         | ...        | ...      | 100        | 3         |
| CO151N       | Programming for Problem Solving          | ESC                  | 3               | ...      | ...       | 3         | 30                | 10        | 60         | ...        | ...      | 100        | 3         |
| ME101N       | Mechanical Workshop Practices            | VSEC (Skill)         | ...             | ...      | 4         | 4         | ...               | ...       | ...        | 50         | ...      | 50         | 2         |
| CO152N       | Programming for Problem Solving Lab      | ESC                  | ...             | ...      | 2         | 2         | ...               | ...       | ...        | 50         | ...      | 50         | 1         |
| IK103N       | Essence of Indian Traditional Knowledge  | HSSM (IKS)           | 2               | ...      | ...       | 2         | 30                | 10        | 60         | ...        | ...      | 100        | 2         |
| SH153N       | Engineering Physics Lab                  | BSC                  | ...             | ...      | 2         | 2         | ...               | ...       | ...        | 50         | ...      | 50         | 1         |
| ET152N       | Basic Electronics Engineering lab        | PCC                  | ...             | ...      | 2         | 2         | ...               | ...       | ...        | 50         | ...      | 50         | 1         |
| LL101N       | Liberal Learning Course (NSS and Sports) | LLC                  | ...             | ...      | 4         | 4         | ...               | ...       | ..         | 50         | ...      | 50         | 2         |
| <b>Total</b> |  |                      | <b>14</b>       | <b>1</b> | <b>14</b> | <b>29</b> | <b>150</b>        | <b>50</b> | <b>300</b> | <b>250</b> | <b>0</b> | <b>750</b> | <b>22</b> |

|   |                                      |   |                                      |
|---|--------------------------------------|---|--------------------------------------|
| <b>L : Lecture</b>                        | <b>T: Tutorial</b>                   | <b>P: Practical</b>                         | <b>MSE: Mid Semester Examination</b> |
| <b>ISA :Internal Sessional Assessment</b> | <b>ESE: End Semester Examination</b> | <b>ICA : Internal Contineous Accessment</b> |                                      |

**Exit Option for UG Certificate: Additional 8 credits shall be earned in work based Vocational Courses or Internship/apprenticeship offered during summer Vacation (As per exit policy approved by Board of Studies (Electronics and Telecommunication Engineering) in its meeting held on 06 July, 2023.)**

**Note: Students securing CGPA 7.0 and above upto semester-II can opt for Double minor by registering additional courses [Semester-III onwards] and earning these additional 18 credits . Students need to submit written application through respective HoD to Academic and Examination Cell. This double minor track should be different than multidisciplinary minor track opted by students from semester-III as per Multi Disciplinary Minor (MDM) courses. For example: If Mechanical Engineering student opted for Civil Engineering track for MDM, then he/she should register for additional credits other than Mechanical and Civil Engineering courses for double minor. Students opting for double minor can not opt for either Honors or Honors with research degree.**

| GOVERNMENT COLLEGE OF ENGINEERING, JALGAON  |  |                                      |   |                     |          |   |                   |                                      |            |           |           |            |           |
|---|--|--------------------------------------|---|---------------------|----------|---|-------------------|--------------------------------------|------------|-----------|-----------|------------|-----------|
| Department of Electronics and Telecommunication Engineering   |  |                                      |   |                     |          |   |                   |                                      |            |           |           |            |           |
| Scheme for Semester III B. Tech. (Electronics and Telecommunication Engineering) with effect from academic year 2023-24 (As per NEP 2020) |  |                                      |   |                     |          |   |                   |                                      |            |           |           |            |           |
| Course Cod  | Name of the Course   | Component as per NEP                 | Teaching Scheme   |                     |          |   | Evaluation Scheme |                                      |            |           |           |            | Credit    |
|   |  |                                      | L   | T                   | P        | Total                                       | Theory            |                                      |            | Practical |           | Total      |           |
|   |  |                                      |   |                     |          |   | MSE               | ISA                                  | ESE        | ICA       | ESE       |            |           |
| ET201N  | Electronic Devices and Circuits                                | PCC                                  | 3   | ...                 | ...      | 3   | 30                | 10                                   | 60         | ...       | ...       | 100        | 3         |
| ET202N  | Electronic Materials and Components                            | PCC                                  | 2   | ...                 | ...      | 2   | 30                | 10                                   | 60         | ...       | ...       | 100        | 2         |
| ET203N  | Digital Circuits and System Design                             | PCC                                  | 3   | ...                 | ...      | 3   | 30                | 10                                   | 60         | ...       | ...       | 100        | 3         |
| ET204N  | Open Elective -I   | OE (MDC)                             | 3   | 1                   | ...      | 4   | 30                | 10                                   | 60         | ...       | ...       | 100        | 4         |
| XXMYYYYN  | Multi Disciplinary Minor-I                                     | MDM-I (MDC)                          | 2   | ...                 | ...      | 2   | 30                | 10                                   | 60         | ...       | ...       | 100        | 2         |
| ET206N  | Electronic Devices and Circuits Lab                            | PCC                                  | ...   | ...                 | 2        | 2   | ...               | ...                                  | ...        | 30        | 20        | 50         | 1         |
| ET207N  | Digital Circuits and System Design Lab                         | PCC                                  | ...   | ...                 | 2        | 2   | ...               | ...                                  | ...        | 30        | 20        | 50         | 1         |
| SH202N  | Entrepreneur Development                                       | EEMC                                 | 2   | ...                 | ...      | 2   | 30                | 10                                   | 60         | ...       | ...       | 100        | 2         |
| SH204N  | Universal Human Values - II                                    | VEC (HSSM )                          | 2   | ...                 | ...      | 2   | 30                | 70                                   | ...        | ...       | ...       | 100        | 2         |
| ET250N  | Community Engineering Project                                  | CEP (ELC)                            | ...   | ...                 | 2        | 2   | ...               | ...                                  | ...        | 30        | 20        | 50         | 2         |
| <b>HV300R</b>   | <b>Case Study on local / Regional Issues (Optional Course)</b> |                                      | <b>Mentoring by the faculty member and student is expected to work 4 hrs/week</b> |                     |          |   | ...               | ...                                  | ...        | <b>50</b> | ...       | <b>50</b>  | <b>2</b>  |
| <b>Total</b>  |  |                                      | <b>17</b>   | <b>1</b>            | <b>6</b> | <b>24</b>                                   | <b>210</b>        | <b>130</b>                           | <b>360</b> | <b>90</b> | <b>60</b> | <b>850</b> | <b>22</b> |
| <b>L : Lecture</b>  |  | <b>T: Tutorial</b>                   |   | <b>P: Practical</b> |          |   |                   | <b>MSE: Mid Semester Examination</b> |            |           |           |            |           |
| <b>ISA :Internal Sessional Assessment</b>   |  | <b>ESE: End Semester Examination</b> |   |                     |          | <b>ICA : Internal Contineous Accessment</b> |                   |                                      |            |           |           |            |           |
| <b>List of Open Elective -I [For other than E&amp;Tc]</b>   |  |                                      |   |                     |          |   |                   |                                      |            |           |           |            |           |
| ET204NX Digital Electronics   |  |                                      |   |                     |          |   |                   |                                      |            |           |           |            |           |
| ET204NY Principles of Electronics Engineering   |  |                                      |   |                     |          |   |                   |                                      |            |           |           |            |           |

| <b>GOVERNMENT COLLEGE OF ENGINEERING, JALGAON</b>   |                                    |                      |                               |          |          |              |                   |                                      |                               |           |           |            |           |
|---|------------------------------------|----------------------|-------------------------------|----------|----------|--------------|-------------------|--------------------------------------|-------------------------------|-----------|-----------|------------|-----------|
| <b>Department of Electronics and Telecommunication Engineering</b>  |                                    |                      |                               |          |          |              |                   |                                      |                               |           |           |            |           |
| <b>Scheme for Semester IV B. Tech. (Electronics and Telecommunication Engineering) with effect from academic year 2023-24 (As per NEP 2020)</b>   |                                    |                      |                               |          |          |              |                   |                                      |                               |           |           |            |           |
| Course Cod  | Name of the Course                 | Component as per NEP | Teaching Scheme               |          |          |              | Evaluation Scheme |                                      |                               |           |           |            | Credit    |
|   |                                    |                      | L                             | T        | P        | Total        | Theory            |                                      |                               | Practical |           | Total      |           |
|   |                                    |                      |                               |          |          |              | MSE               | ISA                                  | ESE                           | ICA       | ESE       |            |           |
| ET251N  | Electronic Circuit Analysis        | PCC                  | 3                             | ...      | ...      | 3            | 30                | 10                                   | 60                            | ...       | ...       | 100        | 3         |
| ET252N  | Signals and Systems                | PCC                  | 3                             | ...      | ...      | 3            | 30                | 10                                   | 60                            | ...       | ...       | 100        | 3         |
| ET253N  | Network Analysis and Synthesis     | PCC                  | 3                             | ...      | ...      | 3            | 30                | 10                                   | 60                            | ...       | ...       | 100        | 3         |
| ET254N  | Open Elective-II                   | OE (MDC)             | 2                             | ...      | ...      | 2            | 30                | 10                                   | 60                            | ...       | ...       | 100        | 2         |
| XXMYYYYN  | Multi Disciplinary Minor-II        | MDM-II (MDC)         | 2                             | ...      | ...      | 2            | 30                | 10                                   | 60                            | ...       | ...       | 100        | 2         |
| ET256N  | Electronic Circuit Analysis Lab    | VSEC                 | ...                           | ...      | 2        | 2            | ...               | ...                                  | ...                           | 30        | 20        | 50         | 1         |
| ET257N  | Signals and Systems Lab            | PCC                  | ...                           | ...      | 2        | 2            | ...               | ...                                  | ...                           | 30        | 20        | 50         | 1         |
| ET258N  | Network Analysis and Synthesis Lab | VSEC                 | ...                           | ...      | 2        | 2            | ...               | ...                                  | ...                           | 30        | 20        | 50         | 1         |
| SH201N  | Project and Finance Management     | EEMC (Mgmt)          | 2                             | ...      | ...      | 2            | 30                | 10                                   | 60                            | ...       | ...       | 100        | 2         |
| SH203N  | Environmental Science              | VEC (HSSM)           | 2                             | ...      | ...      | 2            | 30                | 20                                   | ...                           | ...       | ...       | 50         | 2         |
| SH205N  | मराठी लेखनकौशल्य (Writing Skills)* | AEC (HSSM)           | 2                             | ...      | ...      | 2            | 30                | 20                                   | ...                           | ...       | ...       | 50         | 2         |
| <b>Total</b>  |                                    |                      | <b>19</b>                     | <b>0</b> | <b>6</b> | <b>25</b>    | <b>240</b>        | <b>100</b>                           | <b>360</b>                    | <b>90</b> | <b>60</b> | <b>850</b> | <b>22</b> |
| * Students are permitted to earn credits of this course for any other Modern Indian Language (other than English) through MOOC courses, as per credit transfer  |                                    |                      |                               |          |          |              |                   |                                      |                               |           |           |            |           |
| L : Lecture   |                                    |                      | T: Tutorial                   |          |          | P: Practical |                   |                                      | MSE: Mid Semester Examination |           |           |            |           |
| ISA :Internal Sessional Assessment  |                                    |                      | ESE: End Semester Examination |          |          |              |                   | ICA : Internal Contineous Accessment |                               |           |           |            |           |
| <b>List of Open Elective -II [For other than E&amp;Tc]</b>  |                                    |                      |                               |          |          |              |                   |                                      |                               |           |           |            |           |
| ET254NX Fundamentals of Microprocessor and Microcontroller  |                                    |                      |                               |          |          |              |                   |                                      |                               |           |           |            |           |
| ET254NY Fundamentals of Telecommunication   |                                    |                      |                               |          |          |              |                   |                                      |                               |           |           |            |           |
| Exit Option for UG Diploma: Additional 8 credits shall be earned in Skill based Vocational Courses/Internship/apprentiship/MiniProject offered during summer vacation after Second Year (As per exit policy approved by Board of Studies (Electronics and Telecommunication Engineering) in its meeting held on 06 July, 2023). |                                    |                      |                               |          |          |              |                   |                                      |                               |           |           |            |           |
| Note: Students having CGPA more than 8.0, can register for additional 18 credits departmental honours courses from semester-V to earn the credits which will lead to honours degree in that major program with MDM  |                                    |                      |                               |          |          |              |                   |                                      |                               |           |           |            |           |

| GOVERNMENT COLLEGE OF ENGINEERING, JALGAON  |   |                             |   |          |                      |                    |                   |           |            |            |           |            |           |
|---|---|-----------------------------|---|----------|----------------------|--------------------|-------------------|-----------|------------|------------|-----------|------------|-----------|
| Department of Electronics and Telecommunication Engineering   |   |                             |   |          |                      |                    |                   |           |            |            |           |            |           |
| Scheme for Semester V B. Tech. (Electronics and Telecommunication Engineering) with effect from academic year 2023-24 (As per NEP 2020) |   |                             |   |          |                      |                    |                   |           |            |            |           |            |           |
| Course Code   | Name of the Course  | Component as per NEP        | Teaching Scheme   |          |                      |                    | Evaluation Scheme |           |            |            |           |            | Credit    |
|   |   |                             |   |          |                      |                    | Theory            |           |            | Practical  |           | Total      |           |
|   |   |                             | L   | T        | P                    | Total              | MSE               | ISA       | ESE        | ICA        | ESE       |            |           |
| ET301N  | Analog and Digital Communication                            | PCC                         | 4   | ...      | ...                  | 4                  | 30                | 10        | 60         | ...        | ...       | 100        | 4         |
| ET302N  | Microprocessors, Microcontrollers and PLC                   | PCC                         | 3   | ...      | ...                  | 3                  | 30                | 10        | 60         | ...        | ...       | 100        | 3         |
| ET303N  | Digital Signal Processing                                   | PCC                         | 3   | ...      | ...                  | 3                  | 30                | 10        | 60         | ...        | ...       | 100        | 3         |
| ET304N  | Program Elective- I   | PEC                         | 3   | ...      | ...                  | 3                  | 30                | 10        | 60         | ...        | ...       | 100        | 3         |
| ET305N  | Open Elective-III   | OE (MDC)                    | 2   | ...      | ...                  | 2                  | 30                | 10        | 60         | ...        | ...       | 100        | 2         |
| XXMYYYN   | Multi Disciplinary Minor-III                                | MDM-III (MDC)               | 4   | ...      | ...                  | 4                  | 30                | 10        | 60         | ...        | ...       | 100        | 4         |
| ET307N  | Microprocessors, Microcontrollers and PLC Lab               | PCC                         | ...   | ...      | 2                    | 2                  | ...               | ...       | ...        | 30         | 20        | 50         | 1         |
| ET308N  | Analog and Digital Communication Lab                        | PCC                         | ...   | ...      | 2                    | 2                  | ...               | ...       | ...        | 30         | 20        | 50         | 1         |
| ET309N  | Digital Signal Processing Lab                               | PCC                         | ...   | ...      | 2                    | 2                  | ...               | ...       | ...        | 30         | 20        | 50         | 1         |
| ET310N  | Program Elective- I Lab                                     | PEC                         | ...   | ...      | 2                    | 2                  | ...               | ...       | ...        | 30         | 20        | 50         | 1         |
| <b>HV350R</b>   | <b>Rural Water Supply (Optional Course)</b>                 |                             | <b>Mentoring by the faculty member and student is expected to work 2 hrs/week</b> |          |                      |                    | ...               | ...       | ...        | <b>50</b>  | ...       | <b>50</b>  | <b>1</b>  |
| <b>Total</b>  |   |                             | <b>19</b>   | <b>0</b> | <b>8</b>             | <b>27</b>          | <b>180</b>        | <b>60</b> | <b>360</b> | <b>120</b> | <b>80</b> | <b>800</b> | <b>23</b> |
| ET311N  | Biomedical Engineering                                      | DHC-I                       | 3   | ...      | ...                  | 3                  | 30                | 10        | 60         | ...        | ...       | 100        | 3         |
| ET312N  | Biomedical Engineering Lab                                  | DHC-II                      | ...   | ...      | 2                    | 2                  | ...               | ...       | ...        | 30         | 20        | 50         | 1         |
|   | <b>List of Open Elective -III [For other than E&amp;Tc]</b> |                             | <b>List of Program Elective-I</b>   |          |                      |                    |                   |           |            |            |           |            |           |
|   | ET305NX Principles of IoT                                   |                             | A. Telecommunication Switching Systems  |          |                      |                    |                   |           |            |            |           |            |           |
|   | ET305NY Fundamentals of Mobile Communication                |                             | B. Data Structure and Files   |          |                      |                    |                   |           |            |            |           |            |           |
| DHC: Departmental Honours Course  |   |                             | C. Power Electronics  |          |                      |                    |                   |           |            |            |           |            |           |
| <b>L : Lecture</b>  |   | <b>T: Tutorial</b>          | <b>P: Practical</b>   |          |                      | <b>MSE: Mid Se</b> |                   |           |            |            |           |            |           |
| <b>ISA :Internal Sessional Assessment</b>   |   | <b>ESE: End Semester Ex</b> |   |          | <b>ICA : Interna</b> |                    |                   |           |            |            |           |            |           |

| <b>GOVERNMENT COLLEGE OF ENGINEERING, JALGAON</b><br><b>Department of Electronics and Telecommunication Engineering</b><br><b>Scheme for Semester VI B. Tech. (Electronics and Telecommunication Engineering) with effect from academic year 2023-24 (As per NEP 2020)</b>   |                                    |                                      |   |                     |           |   |                   |                                      |            |            |            |            |           |
|--|------------------------------------|--------------------------------------|---|---------------------|-----------|---|-------------------|--------------------------------------|------------|------------|------------|------------|-----------|
| Course Code  | Name of the Course                 | Component as per NEP                 | Teaching Scheme                             |                     |           |   | Evaluation Scheme |                                      |            |            |            |            | Credit    |
|  |                                    |                                      | L   | T                   | P         | Total                                       | Theory            |                                      |            | Practical  |            | Total      |           |
|  |                                    |                                      |   |                     |           |   | MSE               | ISA                                  | ESE        | ICA        | ESE        |            |           |
| ET351N   | Electromagnetic Fields and Antenna | PCC                                  | 3   | ...                 | ...       | 3   | 30                | 10                                   | 60         | ...        | ...        | 100        | 3         |
| ET352N   | Mobile Communication               | PCC                                  | 2   | ...                 | ...       | 2   | 30                | 10                                   | 60         | ...        | ...        | 100        | 2         |
| ET353N   | Linear Integrated Circuits         | PCC                                  | 2   | ...                 | ...       | 2   | 30                | 10                                   | 60         | ...        | ...        | 100        | 2         |
| XXMYYYN  | Multi Disciplinary Minor-IV        | MDM-IV (MDC                          | 2   | ...                 | ...       | 2   | 30                | 10                                   | 60         | ...        | ...        | 100        | 2         |
| ET355N   | Program Elective- II               | PEC                                  | 3   | ...                 | ...       | 3   | 30                | 10                                   | 60         | ...        | ...        | 100        | 3         |
| ET356N   | Program Elective- III              | PEC                                  | 3   | ...                 | ...       | 3   | 30                | 10                                   | 60         | ...        | ...        | 100        | 3         |
| ET357N   | Mobile Communication Lab           | PCC                                  | ...   | ...                 | 2         | 2   | ...               | ...                                  | ...        | 30         | 20         | 50         | 1         |
| ET358N   | Linear Integrated Circuits Lab     | PCC                                  | ...   | ...                 | 2         | 2   | ...               | ...                                  | ...        | 30         | 20         | 50         | 1         |
| ET359N   | Program Elective- II Lab           | PEC                                  | ...   | ...                 | 2         | 2   | ...               | ...                                  | ...        | 30         | 20         | 50         | 1         |
| ET360N   | Program Elective- III Lab          | PEC                                  | ...   | ...                 | 2         | 2   | ...               | ...                                  | ...        | 30         | 20         | 50         | 1         |
| ET361N   | Mini Project                       | VSEC (Skill)                         | ...   | ...                 | 4         | 4   | ...               | ...                                  | ...        | 30         | 20         | 50         | 2         |
| <b>Total</b>   |                                    |                                      | <b>15</b>                                   | <b>...</b>          | <b>12</b> | <b>27</b>                                   | <b>180</b>        | <b>60</b>                            | <b>360</b> | <b>150</b> | <b>100</b> | <b>850</b> | <b>21</b> |
| ET362N   | Nanoelectronics                    | DHC-III                              | 3   | ...                 | ...       | 3   | 30                | 10                                   | 60         | ...        | ...        | 100        | 3         |
| <b>List of Program Elective-II</b>   |                                    |                                      | <b>List of Program Elective-III</b>         |                     |           |   |                   |                                      |            |            |            |            |           |
| A. Computer Networks   |                                    |                                      | A. Audio Video Engineering                  |                     |           |   |                   |                                      |            |            |            |            |           |
| B. Wireless Sensor Networks  |                                    |                                      | B. VLSI Design                              |                     |           |   |                   |                                      |            |            |            |            |           |
| C. Digital Audio Processing  |                                    |                                      | C. Information Theory and Coding Techniques |                     |           |   |                   |                                      |            |            |            |            |           |
| <b>L : Lecture</b>   |                                    | <b>T: Tutorial</b>                   |   | <b>P: Practical</b> |           |   |                   | <b>MSE: Mid Semester Examination</b> |            |            |            |            |           |
| <b>ISA :Internal Sessional Assessment</b>  |                                    | <b>ESE: End Semester Examination</b> |   |                     |           | <b>ICA : Internal Contineous Accessment</b> |                   |                                      |            |            |            |            |           |
| <b>Exit Option for B.Voc.: Additional 8 credits shall be earned in Skill based Vocational Courses/Internship/apprentiship/MiniProject offered during summer vacation after Third Year (As per exit policy approved by Board of Studies (Electronics and Telecommunication Engineering) in its meeting held on 06 July, 2023. )</b> |                                    |                                      |   |                     |           |   |                   |                                      |            |            |            |            |           |

| <p style="text-align: center;"><b>GOVERNMENT COLLEGE OF ENGINEERING, JALGAON</b><br/> <b>Department of Electronics and Telecommunication Engineering</b><br/> <b>Scheme for Semester VII B. Tech. (Electronics and Telecommunication Engineering) with effect from academic year 2023-24 (As per NEP 2020)</b></p>   |  |                      |                              |                                      |           |           |   |   |     |            |     |            |           |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|----------------------|------------------------------|--------------------------------------|-----------|-----------|---|---|-----|------------|-----|------------|-----------|------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Course Code  | Name of the Course   | Component as per NEP | Teaching Scheme              |                                      |           |           | Evaluation Scheme                           |   |     |            |     | Credit     |           |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |                      | L                            | T                                    | P         | Total     | Theory                                      |   |     | Practical  |     |            | Total     |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |                      |                              |                                      |           |           | MSE   | ISA   | ESE | ICA        | ESE |            |           |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ET401N   | Optical Fiber Communication (NPTEL Course)   | PCC                  | As per NPTEL Teaching Scheme |                                      |           |           | As per NPTEL examination scheme and         |   |     |            |     | 100        | 4         |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ET402N   | NPTEL Course (Program Elective-IV)   | PEC                  | As per NPTEL Teaching Scheme |                                      |           |           | As per NPTEL examination scheme and         |   |     |            |     | 100        | 2         |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| XXMYYYN  | Multi Disciplinary Minor-V   | MDM-V (MDC)          | As per NPTEL Teaching Scheme |                                      |           |           | As per NPTEL examination scheme and         |   |     |            |     | 100        | 2         |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ET410N   | Professional Internship  | ELC                  | ...                          | ...                                  | 24        | 24        | ...   | ...   | ... | 100        | ... | 100        | 12        |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Total</b>   |  |                      | ...                          | ...                                  | <b>24</b> | <b>24</b> | ...   | ...   | ... | <b>100</b> | ... | <b>400</b> | <b>20</b> |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ET411N   | Real Time Digital Signal Processing (12 Weeks NPTEL)                                   | DHC-IV               | As per NPTEL Teaching Scheme |                                      |           |           | examination scheme and institute policy for |   |     |            |     | 100        | 4         |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ET412N   | Principles of Modern CDMA / MIMO / OFDM Wireless Communications (8 Weeks NPTEL course) | DHC-V                | 3                            | ...                                  | ...       | 3         | 30  | 10  | 60  | ...        | ... | 100        | 3         |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <p><b>A Program Internship of one semester is to be completed by the students. One semester means 12 weeks minimum (Engagement hours of student for internship should be 18-20 hours per week.)</b></p>  |  |                      |                              |                                      |           |           |   |   |     |            |     |            |           |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="14" style="text-align: left;"><b>List of Program Elective-IV</b></th> </tr> </thead> <tbody> <tr> <td colspan="14">A. Introduction to Adaptive Signal Processing (8 Weeks NPTEL Course)</td> </tr> <tr> <td colspan="14">B. 5G Technology (NPTEL Course / offered in online mode by in-house faculty)</td> </tr> <tr> <td colspan="14">C. Any other NPTEL/MOOC course as approved by BoS from time to time</td> </tr> </tbody> </table> |  |                      |                              |                                      |           |           |   |   |     |            |     |            |           | <b>List of Program Elective-IV</b> |  |  |  |  |  |  |  |  |  |  |  |  |  | A. Introduction to Adaptive Signal Processing (8 Weeks NPTEL Course) |  |  |  |  |  |  |  |  |  |  |  |  |  | B. 5G Technology (NPTEL Course / offered in online mode by in-house faculty) |  |  |  |  |  |  |  |  |  |  |  |  |  | C. Any other NPTEL/MOOC course as approved by BoS from time to time |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>List of Program Elective-IV</b>   |  |                      |                              |                                      |           |           |   |   |     |            |     |            |           |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| A. Introduction to Adaptive Signal Processing (8 Weeks NPTEL Course)   |  |                      |                              |                                      |           |           |   |   |     |            |     |            |           |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| B. 5G Technology (NPTEL Course / offered in online mode by in-house faculty)   |  |                      |                              |                                      |           |           |   |   |     |            |     |            |           |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C. Any other NPTEL/MOOC course as approved by BoS from time to time  |  |                      |                              |                                      |           |           |   |   |     |            |     |            |           |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>L : Lecture</b>   |  | <b>T: Tutorial</b>   |                              | <b>P: Practical</b>                  |           |           |   | <b>MSE: Mid Semester Examination</b>        |     |            |     |            |           |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>ISA :Internal Sessional Assessment</b>  |  |                      |                              | <b>ESE: End Semester Examination</b> |           |           |   | <b>ICA : Internal Contineous Accessment</b> |     |            |     |            |           |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <p><b>Note: Mentor faculty/Course Teacher shall be allotted for each online course for smooth evaluation and completion of the course. Mentor faculty/course Teacher need to enrol the course alongwith students.</b></p>  |  |                      |                              |                                      |           |           |   |   |     |            |     |            |           |                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |

| <p style="text-align: center;"><b>GOVERNMENT COLLEGE OF ENGINEERING, JALGAON</b><br/> <b>Department of Electronics and Telecommunication Engineering</b><br/> <b>Scheme for Semester VIII B. Tech. (Electronics and Telecommunication Engineering) with effect from academic year 2023-24 (As per NEP 2020)</b></p> |                                    |                                      |                 |                     |   |           |                                      |           |            |            |            |            |           |  |
|---|------------------------------------|--------------------------------------|-----------------|---------------------|---|-----------|--------------------------------------|-----------|------------|------------|------------|------------|-----------|--|
| Course Code   | Name of the Course                 | Component as per NEP                 | Teaching Scheme |                     |   |           | Evaluation Scheme                    |           |            |            |            |            | Credit    |  |
|   |                                    |                                      | L               | T                   | P   | Total     | Theory                               |           |            | Practical  |            | Total      |           |  |
|   |                                    |                                      |                 |                     |   |           | MSE                                  | ISA       | ESE        | ICA        | ESE        |            |           |  |
| ET451N  | Microwave Communication            | PCC                                  | 3               | ...                 | ...   | 3         | 30                                   | 10        | 60         | ...        | ...        | 100        | 3         |  |
| ET452N  | Program Elective - V               | PEC                                  | 2               | ...                 | ...   | 2         | 30                                   | 10        | 60         | ...        | ...        | 100        | 2         |  |
| XXMYYYYN  | Multi Disciplinary Minor-VI        | MDM-VI (MDC                          | 2               | ...                 | ...   | 2         | 30                                   | 10        | 60         | ...        | ...        | 100        | 2         |  |
| ET454N  | Research Methodology and IPR       | ELC                                  | 3               | 1                   | ...   | 4         | 30                                   | 10        | 60         | ...        | ...        | 100        | 4         |  |
| ET455N  | Program Elective - VI              | PEC                                  | 3               | ...                 | ...   | 3         | 30                                   | 10        | 60         | ...        | ...        | 100        | 3         |  |
| ET456N  | Microwave Communication Lab        | PCC                                  | ...             | ...                 | 2   | 2         | ...                                  | ...       | ...        | 30         | 20         | 50         | 1         |  |
| ET457N  | Program Elective-VI Lab            | PEC                                  | ...             | ...                 | 2   | 2         | ...                                  | ...       | ...        | 30         | 20         | 50         | 1         |  |
| ET458N  | Project                            | ELC                                  | ...             | ...                 | 8   | 8         | ...                                  | ...       | ...        | 50         | 100        | 150        | 4         |  |
| <b>Total</b>  |                                    |                                      | <b>13</b>       | <b>1</b>            | <b>12</b>                                   | <b>26</b> | <b>150</b>                           | <b>50</b> | <b>300</b> | <b>110</b> | <b>140</b> | <b>750</b> | <b>20</b> |  |
| ET460N  | Networking in IoT                  | DHC-VI                               | 4               | ...                 | ...   | 4         | 30                                   | 10        | 60         | ...        | ...        | 100        | 4         |  |
|   | <b>List of Program Elective-V</b>  |                                      |                 |                     |   |           |                                      |           |            |            |            |            |           |  |
|   | A. Internet of Things              |                                      |                 |                     |   |           |                                      |           |            |            |            |            |           |  |
|   | B. Antennas and Propagation        |                                      |                 |                     |   |           |                                      |           |            |            |            |            |           |  |
|   | C. Satellite Communication         |                                      |                 |                     |   |           |                                      |           |            |            |            |            |           |  |
|   | <b>List of Program Elective-VI</b> |                                      |                 |                     |   |           |                                      |           |            |            |            |            |           |  |
|   | A. Digital Image Processing        |                                      |                 |                     |   |           |                                      |           |            |            |            |            |           |  |
|   | B. Embedded Systems                |                                      |                 |                     |   |           |                                      |           |            |            |            |            |           |  |
|   | C. Analog and Digital CMOS Design  |                                      |                 |                     |   |           |                                      |           |            |            |            |            |           |  |
| <b>L : Lecture</b>  |                                    | <b>T: Tutorial</b>                   |                 | <b>P: Practical</b> |   |           | <b>MSE: Mid Semester Examination</b> |           |            |            |            |            |           |  |
| <b>ISA :Internal Sessional Assessment</b>   |                                    | <b>ESE: End Semester Examination</b> |                 |                     | <b>ICA : Internal Contineous Accessment</b> |           |                                      |           |            |            |            |            |           |  |
| Total Credits: 172 for BTech in Electronics &Telecommunication (E&Tc) Engineering with MDM  |                                    |                                      |                 |                     |   |           |                                      |           |            |            |            |            |           |  |
| Total Credits: 172 + 18 = 190 for BTech in E&Tc Engineering with MDM and specialization minor [Double Minor]  |                                    |                                      |                 |                     |   |           |                                      |           |            |            |            |            |           |  |
| Total Credits: 172 + 18 = 190 for BTech in E&Tc Engineering with MDM and Honours in E&Tc  |                                    |                                      |                 |                     |   |           |                                      |           |            |            |            |            |           |  |
| Total Credits: 172 + 18 = 190 for BTech in E&Tc Engineering with MDM and Honours with Research  |                                    |                                      |                 |                     |   |           |                                      |           |            |            |            |            |           |  |