

| Annexure I                                                      |             |                                                                 |                                                                |                |          |   |                                                                                           |
|-----------------------------------------------------------------|-------------|-----------------------------------------------------------------|----------------------------------------------------------------|----------------|----------|---|-------------------------------------------------------------------------------------------|
| COMPUTER ENGINEERING DEPARTMENT                                 |             |                                                                 |                                                                |                |          |   |                                                                                           |
| LIST OF ONLINE NPTEL/SWAYAM COURSES FOR ODD SEMESTER (RC 19-20) |             |                                                                 |                                                                |                |          |   |                                                                                           |
| FOR THE ACADEMIC YEAR 2025-26 (July-Nov 2025)                   |             |                                                                 |                                                                |                |          |   |                                                                                           |
| SEM V                                                           |             |                                                                 |                                                                |                |          |   |                                                                                           |
| 1                                                               | noc24-cs127 | Software Conceptual Design                                      | Prof. Sridhar Iyer Prof. Prajish Prasad<br>Prof. T. G. Lakshmi | IIT Bombay     | 4 Weeks  | 1 | <a href="https://nptel.ac.in/courses/106101235">https://nptel.ac.in/courses/106101235</a> |
| 2                                                               | noc24-cs130 | Big Data Computing                                              | Prof. Rajiv Misra                                              | IIT Patna      | 8 Weeks  | 2 | <a href="https://nptel.ac.in/courses/106104189">https://nptel.ac.in/courses/106104189</a> |
| 3                                                               | noc24-cs69  | Demystifying Networking                                         | Prof. Sridhar Iyer<br>Prof. Ashutosh Raina                     | IIT Bombay     | 4 Weeks  | 1 | <a href="https://nptel.ac.in/courses/106101209">https://nptel.ac.in/courses/106101209</a> |
| 4                                                               | noc24-cs93  | Multi-Core Computer Architecture                                | Prof. John Jose                                                | IIT Guwahati   | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106103184">https://nptel.ac.in/courses/106103184</a> |
| 5                                                               | noc24-cs70  | Introduction to Graph Algorithms                                | Prof. C Pandu Rangan                                           | IISc Bangalore | 8 Weeks  | 2 | <a href="https://nptel.ac.in/courses/106108468">https://nptel.ac.in/courses/106108468</a> |
| 6                                                               | noc24-cs107 | Statistical Learning for Reliability Analysis                   | Prof. Monalisa Sarma                                           | IIT Kharagpur  | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106105239">https://nptel.ac.in/courses/106105239</a> |
| 7                                                               | noc24-cs94  | Ethical Hacking                                                 | Prof. Indranil Sengupta                                        | IIT Kharagpur  | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106105217">https://nptel.ac.in/courses/106105217</a> |
| 8                                                               | noc24-cs125 | Programming in Modern C++                                       | Prof. Partha Pratim Das                                        | IIT Kharagpur  | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106105234">https://nptel.ac.in/courses/106105234</a> |
| 9                                                               | noc24-cs95  | Introduction to Industry 4.0 and Industrial Internet of Things  | Prof. Sudip Misra                                              | IIT Kharagpur  | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106105195">https://nptel.ac.in/courses/106105195</a> |
| 10                                                              | noc24-cs96  | Data Structure and Algorithms using Java                        | Prof. Debasis Samanta                                          | IIT Kharagpur  | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106105225">https://nptel.ac.in/courses/106105225</a> |
| 11                                                              | noc24-cs126 | Design & Implementation of Human-Computer Interfaces            | Prof. Samit Bhattacharya                                       | IIT Guwahati   | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106103237">https://nptel.ac.in/courses/106103237</a> |
| 12                                                              | noc24-mg78  | Project Management: Planning, Execution, Evaluation and Control | Prof. Sanjib Chowdhury                                         | IIT Kharagpur  | 8 Weeks  | 2 | <a href="https://nptel.ac.in/courses/110105167">https://nptel.ac.in/courses/110105167</a> |
| 13                                                              | noc24-cs91  | Software Testing                                                | Prof. Meenakshi D'souza                                        | IIT Bangalore  | 12 weeks | 3 | <a href="https://nptel.ac.in/courses/106101163">https://nptel.ac.in/courses/106101163</a> |

| SEM VII |             |                                                                         |                                                                                                     |                                                     |          |   |                                                                                           |
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| 1       | noc24-bt53  | Medical Image Analysis                                                  | Prof. Ganapathy Krishnamurthi                                                                       | IIT Madras                                          | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/102106094">https://nptel.ac.in/courses/102106094</a> |
| 2       | noc24-bt64  | Next Generation Sequencing Technologies: Data Analysis and Applications | Prof. Riddhiman Dhar                                                                                | IIT Kharagpur                                       | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/102105099">https://nptel.ac.in/courses/102105099</a> |
| 3       | noc24-bt69  | Introduction to Biomedical Imaging Systems                              | Prof. Arun K. Thittai                                                                               | IIT Madras                                          | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/102105090">https://nptel.ac.in/courses/102105090</a> |
| 4       | noc24-cs86  | Distributed Optimization and Machine Learning                           | Prof. Mayank Baranwal                                                                               | IIT Bombay                                          | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106101466">https://nptel.ac.in/courses/106101466</a> |
| 5       | noc24-cs112 | Secure Computation: Part II                                             | Prof. Ashish Choudhury                                                                              | IIIT Bangalore                                      | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106108237">https://nptel.ac.in/courses/106108237</a> |
| 6       | noc24-cs99  | Advanced Distributed Systems                                            | Prof. Smruti Ranjan Sarangi                                                                         | IIT Delhi                                           | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106102237">https://nptel.ac.in/courses/106102237</a> |
| 7       | noc24-cs85  | Practical Cyber Security for Cyber Security Practitioners               | Prof. Sandeep K. Shukla                                                                             | IIT Kanpur                                          | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106104467">https://nptel.ac.in/courses/106104467</a> |
| 8       | noc24-cs101 | Introduction to Machine Learning                                        | Prof. Balaraman Ravindran                                                                           | IIT Madras                                          | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106106139">https://nptel.ac.in/courses/106106139</a> |
| 9       | noc24-cs102 | Reinforcement Learning                                                  | Prof. Balaraman Ravindran                                                                           | IIT Madras                                          | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106106143">https://nptel.ac.in/courses/106106143</a> |
| 10      | noc24-cs89  | Deep Learning for Computer Vision                                       | Prof. Vineeth N Balasubramanian                                                                     | IIT Hyderabad                                       | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106106224">https://nptel.ac.in/courses/106106224</a> |
| 11      | noc24-cs103 | Getting Started with Competitive Programming                            | Prof. Neeldhara Misra                                                                               | IIT Gandhinagar                                     | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106106231">https://nptel.ac.in/courses/106106231</a> |
| 12      | noc24-cs104 | Applied Accelerated Artificial Intelligence                             | Prof. Satyajit Das<br>Prof. Satyadhyan Chickerur<br>Prof. Bharatkumar Sharma<br>Prof. Adesuyi Tosin | IIT Palakkad KLE Technological University<br>NVIDIA | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106106238">https://nptel.ac.in/courses/106106238</a> |
| 13      | noc24-cs90  | Social Network Analysis                                                 | Prof. Tanmoy Chakraborty                                                                            | IIT Delhi                                           | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106106239">https://nptel.ac.in/courses/106106239</a> |
| 14      | noc24-cs120 | Social Networks                                                         | Prof. Sudarshan Iyengar<br>Prof. Yayati Gupta                                                       | IIT Ropar                                           | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106106169">https://nptel.ac.in/courses/106106169</a> |
| 15      | noc24-cs114 | Deep Learning - IIT Ropar                                               | Prof. Sudarshan Iyengar<br>Prof. Sukrit Gupta                                                       | IIT Ropar                                           | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106106184">https://nptel.ac.in/courses/106106184</a> |
| 16      | noc24-cs121 | Cyber Security and Privacy                                              | Prof. Saji K Mathew                                                                                 | IIT Madras                                          | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106106248">https://nptel.ac.in/courses/106106248</a> |

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| 17 | noc24-cs81  | Introduction To Machine Learning                                   | Prof. Sudeshna Sarkar                                                            | IIT Kharagpur                 | 8 Weeks  | 2 | <a href="https://nptel.ac.in/courses/106105152">https://nptel.ac.in/courses/106105152</a> |
| 18 | noc24-cs109 | Algorithmic Game Theory                                            | Prof. Palash Dey                                                                 | IIT Kharagpur                 | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106105237">https://nptel.ac.in/courses/106105237</a> |
| 19 | noc24-cs76  | Artificial Intelligence for Economics                              | Prof. Adway Mitra Prof. Dripto Bakshi<br>Prof. Palash Dey                        | IIT Kharagpur                 | 8 Weeks  | 2 | <a href="https://nptel.ac.in/courses/106105470">https://nptel.ac.in/courses/106105470</a> |
| 20 | noc24-cs132 | Responsible & Safe AI Systems                                      | Prof. Ponnurangam Kumaraguru<br>Prof. Balaraman Ravindran<br>Prof. Arun Rajkumar | IIIT Hyderabad and IIT Madras | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/106106472">https://nptel.ac.in/courses/106106472</a> |
| 21 | noc24-ee146 | Machine Learning and Deep Learning - Fundamentals and Applications | Prof. M.K. Bhuyan                                                                | IIT Guwahati                  | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/108103192">https://nptel.ac.in/courses/108103192</a> |
| 22 | noc24-ee118 | Pattern Recognition and Application                                | Prof. Prabir Kumar Biswas                                                        | IIT Kharagpur                 | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/117105101">https://nptel.ac.in/courses/117105101</a> |
| 23 | noc24-ee136 | Real-Time Digital Signal Processing                                | Prof. Rathna G N                                                                 | IISc Bangalore                | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/108108185">https://nptel.ac.in/courses/108108185</a> |
| 24 | noc24-ee122 | Optimization Theory and Algorithms                                 | Prof. Uday K Khankhoje                                                           | IIT Madras                    | 12 Weeks | 3 | <a href="https://nptel.ac.in/courses/108106478">https://nptel.ac.in/courses/108106478</a> |

**Note:**

**1. The credits will be awarded based on scheme proposed above.**

**2. Students should mandatory undertake one NPTEL/SWAYAM course of only 3 credits from the above list between 5th to 7th semester against 8th-semester course i.e. CE820 Elective –NPTEL/MOOC/SWAYAM.**

**3. The student shall submit the NPTEL/SWAYAM certificates to Goa University through Heads of Department while applying for the degree.**