

| Annexure I | | | | | | | |
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| DEPARTMENT OF INFORMATION TECHNOLOGY | | | | | | | |
| LIST OF ONLINE NPTEL/SWAYAM COURSES FOR EVEN SEMESTER (RC 19-20) | | | | | | | |
| FOR THE ACADEMIC YEAR 2023-24 (Jan-April 2024) | | | | | | | |
| SEM IV | | | | | | | |
| Sr. No. | Course Id | Course Name (NPTEL Swayam Course) | SME Name | Institute | Duration | Credits | Link to Join |
| 1 | noc24-cs45 | Programming, Data Structures And Algorithms Using Python | Prof. Madhavan Mukund | CMI | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_cs45/preview |
| 2 | noc24-cs42 | Problem Solving Through Programming In C | Prof. Anupam Basu | IITKGP | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs42/preview |
| 3 | noc24-cs10 | Switching Circuits and Logic Design | Prof. Indranil Sengupta | IITKGP | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs10/preview |
| 4 | noc24-cs29 | Getting Started with Competitive Programming | Prof. Neeldhara Misra | IIT Gandhinagar | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc23_cs103/preview |
| 5 | noc24-cs62 | Probability for Computer Science | Prof. Nitin Saxena | IITK | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc21_cs104/preview |
| 6 | noc24-cs57 | The Joy of Computing using Python | Prof. Sudarshan Iyengar, Prof. Shamik Sural | IIT Ropar | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs57/preview |
| 7 | noc24-hs15 | Soft Skill Development | Prof. Priyadarshi Patnaik, Prof. V. N. Giri, Prof. D. Suar | IITKGP | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_hs15/preview |

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| 8 | noc24-mg60 | Talent Acquisition and Management | Prof. Santosh Rangnekar | IITR | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_mg60/preview |
| 9 | noc24-hs07 | Introduction On Intellectual Property To Engineers And Technologists | Prof. Tapas Kumar Bandyopadhyay | IITKGP | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_hs07/preview |
| SEM VI | | | | | | | |
| 1 | noc24-cs52 | Reinforcement Learning | Prof. Balaraman Ravindran | IITM | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs52/preview |
| 2 | noc24-cs34 | Introduction To Industry 4.0 And Industrial Internet Of Things | Prof. Sudip Misra | IITKGP | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs34/preview |
| 3 | noc24-cs59 | Deep Learning - IIT Ropar | Prof. Sudarshan Iyengar, Prof. Sanatan Sukhija | IIT Ropar | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs59/preview |
| 4 | noc24-cs03 | Linear programming and its applications to computer science | Prof. Rajat Mittal, Prof. Abhinav Dhall, Prof. Shamik Sural | IITK | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_cs03/preview |
| 5 | noc24-cs61 | Digital Design with Verilog | Prof. Chandan Karfa, Prof. Aryabartta Sahu | IITG | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs61/preview |
| 6 | noc24-cs51 | Introduction to Machine Learning | Prof. Balaraman Ravindran, Prof. Sudarshan Iyengar, Prof. Sanatan Sukhija | IITM | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs51/preview |
| 7 | noc24-cs60 | Machine Learning, ML | Prof. Carl Gustaf Jansson | KTH Royal Institute of | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_cs60/preview |

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| | | | | Technology, Sweden | | | |
| 8 | noc24- cs54 | Python for Data Science | Prof. Ragunathan Rengasamy | IITM | 4 Weeks | 1 | https://onlinecourses.nptel.ac.in/noc24_cs54/preview |
| 9 | noc24- cs24 | Embedded System Design with ARM | Prof. Indranil Sengupta, Prof. Kamalika Datta | IITKGP | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_cs24/preview |
| 10 | noc24- mg01 | Project Management | Prof. Ramesh Anbanandam | IITR | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_mg01/preview |
| 11 | noc24- hs08 | Legal Compliance For Incorporating Startup | Prof. Indrajit Dube | IITKGP | 4 Weeks | 1 | https://onlinecourses.nptel.ac.in/noc24_hs08/preview |
| 12 | noc24- cs05 | Basics of Computational Complexity | Prof. Nitin Saxena | IITK | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs05/preview |
| 13 | noc24- cs11 | Advanced Computer Networks | Prof. Neminath Hubballi Prof. Sameer Kulkarni | IITM | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs11/preview |
| 14 | noc24- cs12 | Affective Computing | Prof. Jainendra Shukla Prof. Abhinav Dhall | IITM | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs12/preview |
| 15 | noc24- hs26 | Enhancing Soft Skills and Personality | Prof. T. Ravichandran | IITK | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_hs26/preview |

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| 16 | noc24- hs12 | Training and Development | Prof. Susmita Mukhopadhyay, Prof. S. Srinivasan | IITKGP | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_hs12/preview |
| 17 | noc24- hs38 | Intellectual Property | Prof. Feroz Ali | IITM | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_hs38/preview |
| SEM VIII | | | | | | | |
| 1 | noc24- cs15 | Blockchain and its Applications | Prof. Sandip Chakraborty, Prof. Shamik Sural | IITKGP | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs15/preview |
| 2 | noc24- cs38 | Machine Learning for Engineering and science applications | Prof. Balaji Srinivasan and Prof. Ganapathy | IITM | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs38/preview |
| 3 | noc24- cs63 | Parallel Computer Architecture | Prof. Hemangee K. Kapoor | IITG | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs63/preview |
| 4 | noc24- cs64 | Games and Information | Prof. Ankur A. Kulkarni | IITB | 12 weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs64/preview |
| 5 | noc24- cs66 | Edge Computing | Prof. Rajiv Misra | IITP | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_cs66/preview |
| 6 | noc24- cs08 | An Introduction to Artificial Intelligence | Prof. Mausam | IITD | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs08/preview |
| 7 | noc24- cs20 | Data Analytics with Python | Prof. A Ramesh | IITR | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs20/preview |
| 8 | noc24- cs22 | Data Mining | Prof. Pabitra Mitra | IITKGP | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_cs22/preview |

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| 9 | noc24-cs31 | Information Security - 5 - Secure Systems Engineering | Prof. Chester Robeiro, Prof. Shankar Narasimhan | IITM | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_cs31/preview |
| 10 | noc24-cs14 | Artificial Intelligence: Knowledge Representation And Reasoning | Prof. Deepak Khemani, Prof. Shamik Sural, Prof. Sudarshan Iyengar, Prof. Sanatan Sukhija | IITM | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs14/preview |
| 11 | noc24-mg08 | Business analytics and data mining Modeling using R | Prof. Gaurav Dixit | IITR | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_mg08/preview |
| 12 | noc24-cs04 | Privacy and Security in Online Social Media | Prof. Ponnurangam Kumaraguru | IITM | 12 weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs04/preview |
| 13 | noc24-cs30 | GPU Architectures And Programming | Prof. Soumyajit Dey | IITKGP | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs30/preview |
| 14 | noc24-cs31 | Information Security - 5 - Secure Systems Engineering | Prof. Chester Robeiro | IITM | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_cs31/preview |
| 15 | noc24-cs50 | User-centric Computing For Human-Computer Interaction | Prof. Samit Bhattacharya | IITG | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_cs50/preview |
| 16 | noc24-cs65 | Business Intelligence & Analytics | Prof. Saji K Mathew | IITM | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs65/preview |

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| 17 | noc24-hs60 | Patent Law for Engineers and Scientists | Prof. Feroz Ali | IITM | 12 Weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_hs60/preview |
| 18 | noc24-cs04 | Privacy and Security in Online Social Media | Prof. Ponnurangam Kumaraguru | IITH | 12 weeks | 3 | https://onlinecourses.nptel.ac.in/noc24_cs04/preview |
| 19 | noc24-hs59 | Patent Drafting for Beginners | Prof. Feroz Ali | IITM | 4 Weeks | 1 | https://onlinecourses.nptel.ac.in/noc24_hs59/preview |
| 20 | noc24-cs13 | AI: Constraint Satisfaction | Prof. Deepak Khemani | IITM | 8 Weeks | 2 | https://onlinecourses.nptel.ac.in/noc24_cs13/preview |
| 21 | noc24-cs56 | Social Networks | Prof. Sudarshan Iyengar Prof. Yayati Gupta | IIT Ropar | 12 weeks | 3 | https://onlinecourses.nptel.ac.in/noc23_cs107/preview |

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.