

**JULY & OCTOBER 2018 NPTEL NEW COURSE LIST**

| S.No | NOC CourseId | NOC CourseName   | NOC Institute  | NPTEL CourseId |
|------|--------------|--|----------------|----------------|
| 1    | noc18-ae04   | Fundamentals of Combustion (Part 2)  | IIT Kanpur     | 101104072      |
| 2    | noc18-ae07   | Design of fixed wing Unmanned Aerial Vehicles                                | IIT Kanpur     | 101104073      |
| 3    | noc18-ae08   | Introduction to Finite Volume Methods I                                      | IIT Kanpur     | 101104074      |
| 4    | noc18-bt16   | Bioengineering: An Interface with Biology and Medicine                       | IIT Bombay     | 102101068      |
| 5    | noc18-bt26   | WildLife Conservation  | IIT Kanpur     | 102104068      |
| 6    | noc18-bt25   | Nanotechnology in Agriculture  | IIT Kanpur     | 102104069      |
| 7    | noc18-bt17   | Biomechanics   | IIT Kharagpur  | 102105068      |
| 8    | noc18-bt22   | Computational Systems Biology  | IIT Madras     | 102106068      |
| 9    | noc18-bt29   | Material and Energy Balances   | IIT Madras     | 102106069      |
| 10   | noc18-bt28   | Computer Aided Drug Design   | IIT Madras     | 102106070      |
| 11   | noc18-ch26   | Introduction to Polymer Physics  | IIT Guwahati   | 103103139      |
| 12   | noc18-ch25   | Natural Gas Engineering  | IIT Guwahati   | 103103140      |
| 13   | noc18-ch21   | Optimization in Chemical Engineering   | IIT Kharagpur  | 103105139      |
| 14   | noc18-ch22   | Heat Transfer  | IIT Kharagpur  | 103105140      |
| 15   | noc18-ph13   | Introduction to Polymer Physics  | IIT Roorkee    | 103107139      |
| 16   | noc18-ee32   | Semiconductor Devices and Circuits   | IISc Bangalore | 103108139      |
| 17   | noc18-cy14   | Inorganic Chemistry of Life: Principles and Perspectives                     | IIT Bombay     | 104101093      |
| 18   | noc18-cy15   | Symmetry and Group Theory  | IIT Bombay     | 104101094      |
| 19   | noc18-cy13   | Computational Chemistry and Classical Molecular Dynamics                     | IIT Bombay     | 104101095      |
| 20   | noc18-cy10   | Molecules in Motion  | IIT Kharagpur  | 104105093      |
| 21   | noc18-cy18   | Chemical Crystallography   | IISER Mohali   | 104106093      |
| 22   | noc18-cy20   | Advanced Chemical Thermodynamics and Kinetics                                | IISER Mohali   | 104106094      |
| 23   | noc18-ce31   | Geosynthetics Testing Laboratory   | IIT Bombay     | 105101176      |
| 24   | noc18-ce30   | Fire Protection, Services and Maintenance Management of Building             | IIT Delhi      | 105102176      |
| 25   | noc18-ce37   | Higher Surveying   | IIT Guwahati   | 105103176      |
| 26   | noc18-ce38   | Unsaturated Soil Mechanics   | IIT Guwahati   | 105103177      |
| 27   | noc18-ce35   | Photogeology In Terrain Evaluation (Part 2)                                  | IIT Kanpur     | 105104177      |
| 28   | noc18-ce39   | Introduction to Accounting and Finance for Civil Engineers                   | IIT Kanpur     | 105104178      |
| 29   | noc18-ce16   | Foundation Engineering   | IIT Kharagpur  | 105105176      |
| 30   | noc18-ce18   | Theory of Elasticity   | IIT Kharagpur  | 105105177      |
| 31   | noc18-ce26   | Wastewater Treatment and Recycling   | IIT Kharagpur  | 105105178      |
| 32   | noc18-ce36   | Fluid Inclusion in Mineral Principles, Methodology, Practice and Application | IIT Kharagpur  | 105105179      |
| 33   | noc18-ce19   | Matrix Method of Structural Analysis   | IIT Kharagpur  | 105105180      |
| 34   | noc18-ce21   | Advanced Concrete Technology   | IIT Madras     | 105106176      |
| 35   | noc18-ce27   | Glass in buildings : Design and Applications                                 | IIT Madras     | 105106177      |
| 36   | noc18-ce41   | Glass Processing Technology  | IIT Madras     | 105106178      |
| 37   | noc18-ce29   | Environmental Engineering- Chemical Processes                                | IIT Roorkee    | 105107176      |
| 38   | noc18-cs57   | Design and pedagogy of the introductory programming course                   | IIT Bombay     | 106101182      |
| 39   | noc18-cs54   | Embedded Systems-Design Verification and Test                                | IIT Guwahati   | 106103182      |
| 40   | noc18-cs50   | MultiCore Computer Architecture-Storage and Interconnects                    | IIT Guwahati   | 106103183      |
| 41   | noc18-cs45   | Cloud Computing and Distributed Systems                                      | IIT Kanpur     | 106104182      |
| 42   | noc18-cs43   | Software Engineering   | IIT Kharagpur  | 106105182      |
| 43   | noc18-cs38   | Computer Networks and Internet Protocol                                      | IIT Kharagpur  | 106105183      |
| 44   | noc18-cs47   | Blockchain Architecture Design and Use Cases                                 | IIT Madras     | 106105184      |
| 45   | noc18-cs30   | Switching Circuits and Logic Design  | IIT Kharagpur  | 106105185      |
| 46   | noc18-cs39   | Scalable Data Science  | IIT Kharagpur  | 106105186      |
| 47   | noc18-cs35   | The Joy of Computing using Python  | IIT Ropar      | 106106182      |
| 48   | noc18-cs53   | Discrete Mathematics   | IIT Ropar      | 106106183      |
| 49   | noc18-cs41   | Deep Learning  | IIT Madras     | 106106184      |
| 50   | noc18-de01   | System Design for Sustainability   | IIT Guwahati   | 107103081      |
| 51   | noc18-de02   | Product Design and Innovation  | IIT Guwahati   | 107103082      |
| 52   | noc18-de03   | Interaction Design   | IIT Guwahati   | 107103083      |
| 53   | noc18-ee41   | Control systems  | IIT Madras     | 107106081      |
| 54   | noc18-ee22   | Microwave Theory and Techniques  | IIT Bombay     | 108101112      |
| 55   | noc18-ee27   | Principles of Digital Communications   | IIT Bombay     | 108101113      |
| 56   | noc18-ee45   | Analog Electronic Circuit  | IIT Delhi      | 108102112      |
| 57   | noc18-ee46   | Nonlinear and Adaptive Control   | IIT Delhi      | 108102113      |
| 58   | noc18-ee43   | Advanced Topics in Probability and Random Processes                          | IIT Guwahati   | 108103112      |
| 59   | noc18-ee31   | Applied Optimization for Wireless, Machine Learning, Big Data                | IIT Kanpur     | 108104112      |
| 60   | noc18-ee28   | Fiber-Optic Communication Systems and Techniques                             | IIT Kanpur     | 108104113      |
| 61   | noc18-ee14   | Fundamentals of Electrical Engineering                                       | IIT Kharagpur  | 108105112      |
| 62   | noc18-ee33   | Digital Circuits   | IIT Kharagpur  | 108105113      |
| 63   | noc18-ee23   | Analysis and Design Principles of Microwave Antennas                         | IIT Kharagpur  | 108105114      |
| 64   | noc18-ee34   | Architectural Design of Digital Integrated Circuits                          | IIT Kharagpur  | 108105118      |
| 65   | noc18-ee15   | Electrical Distribution System Analysis                                      | IIT Roorkee    | 108107112      |
| 66   | noc18-ee42   | Introduction to Smart Grid   | IIT Roorkee    | 108107113      |

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| 67  | noc18-ee44 | Facts Devices   | IIT Roorkee    | 108107114 |
| 68  | noc18-ee25 | Advanced Linear Continuous Control Systems: Applications with MATLAB Prog | IIT Roorkee    | 108107115 |
| 69  | noc18-ph16 | Control System Design   | IISc Bangalore | 108108112 |
| 70  | noc18-ee17 | Recent Advances in Transmission Insulators                                | IISc Bangalore | 108108113 |
| 71  | noc18-ee36 | Fabrication Techniques for MEMs-based sensors: clinical perspective       | IISc Bangalore | 108108114 |
| 72  | noc18-ee37 | Op-Amp Practical Applications: Design, Simulation and Implementation      | IISc Bangalore | 108108115 |
| 73  | noc18-ee38 | Physical Modelling for Electronics Enclosures using Rapid prototyping     | IISc Bangalore | 108108116 |
| 74  | noc18-hs40 | Introduction to Modern Indian Political Thought                           | IIT Guwahati   | 109103135 |
| 75  | noc18-hs43 | Consumer Psychology   | IIT Guwahati   | 109103136 |
| 76  | noc18-hs31 | Introduction to Literary Theory   | IIT Kanpur     | 109104135 |
| 77  | noc18-hs37 | Development of Sociology in India   | IIT Kanpur     | 109104136 |
| 78  | noc18-hs35 | Introduction to Basic Spoken Sanskrit                                     | IIT Kharagpur  | 109105135 |
| 79  | noc18-hs36 | Water, Society and Sustainability   | IIT Kharagpur  | 109105136 |
| 80  | noc18-hs33 | Indian Fiction in English   | IIT Madras     | 109106135 |
| 81  | noc18-hs39 | Introduction to Cultural Studies  | IIT Madras     | 109106136 |
| 82  | noc18-hs45 | Intellectual Property   | IIT Madras     | 109106137 |
| 83  | noc18-hs46 | Short Fiction in Indian Literature  | IIT Madras     | 109106138 |
| 84  | noc18-mg21 | Economic Growth and Development   | IIT Guwahati   | 110103093 |
| 85  | noc18-mg22 | Microeconomics: Theory & Applications                                     | IIT Kanpur     | 110104093 |
| 86  | noc18-mg33 | Data Analysis and Decision Making - I                                     | IIT Kanpur     | 110104094 |
| 87  | noc18-mg23 | Economics of Health and Health Care                                       | IIT Kanpur     | 110104095 |
| 88  | noc18-mg37 | Simulation of Business Systems: An Applied Approach                       | IIT Kanpur     | 110104096 |
| 89  | noc18-mg24 | Engineering Econometrics  | IIT Kharagpur  | 110105093 |
| 90  | noc18-mg42 | Industrial Safety Engineering   | IIT Kharagpur  | 110105094 |
| 91  | noc18-mg43 | Management of Inventory Systems   | IIT Kharagpur  | 110105095 |
| 92  | noc18-mg32 | Selected Topics in Decision Modeling                                      | IIT Kharagpur  | 110105096 |
| 93  | noc18-mg25 | Ethics in Engineering Practice  | IIT Kharagpur  | 110105097 |
| 94  | noc18-mg40 | Working Capital Management  | IIT Roorkee    | 110107093 |
| 95  | noc18-mg36 | Innovation, Business Models and Entrepreneurship                          | IIT Roorkee    | 110107094 |
| 96  | noc18-mg34 | Business Analytics & Data Mining Modeling Using R-PART II                 | IIT Roorkee    | 110107095 |
| 97  | noc18-ma19 | Introduction to Probability Theory and Stochastic Processes               | IIT Delhi      | 111102111 |
| 98  | noc18-ma22 | Statistical Inference   | IIT Delhi      | 111102112 |
| 99  | noc18-ma13 | Matrix Solver   | IIT Kharagpur  | 111105111 |
| 100 | noc18-ma16 | Introduction to Abstract and Linear Algebra                               | IIT Kharagpur  | 111105112 |
| 101 | noc18-ma12 | Transform Techniques for Engineers  | IIT Madras     | 111106111 |
| 102 | noc18-ma07 | Introduction to probability and Statistics                                | IIT Madras     | 111106112 |
| 103 | noc18-ma15 | Introduction to Abstract Group Theory                                     | CMI            | 111106113 |
| 104 | noc18-ma21 | Groups : Motion, symmetry and puzzles                                     | IISER Mohali   | 111106114 |
| 105 | noc18-ma10 | Ordinary and Partial Differential Equations and Applications              | IIT Roorkee    | 111107111 |
| 106 | noc18-ma14 | Matrix Analysis with Applications   | IIT Roorkee    | 111107112 |
| 107 | noc18-ma18 | Mathematical Modelling: Analysis and Applications                         | IIT Roorkee    | 111107113 |
| 108 | noc18-me42 | RAC Product Design  | IIT Delhi      | 112102248 |
| 109 | noc18-me56 | Mechanics of Machining  | IIT Guwahati   | 112103248 |
| 110 | noc18-me64 | Principles of Hydraulic Machines and System Design                        | IIT Guwahati   | 112103249 |
| 111 | noc18-me70 | Introduction to Abrasive Machining and Finishing Processes                | IIT Guwahati   | 112103250 |
| 112 | noc18-me65 | Theory of Rectangular Plates -Part1                                       | IIT Guwahati   | 112103251 |
| 113 | noc18-mm20 | Phase Equilibria in Materials (Nature & Properties of Materials-II)       | IIT Kanpur     | 112104248 |
| 114 | noc18-me58 | Advanced Composites   | IIT Kanpur     | 112104249 |
| 115 | noc18-me62 | Engineering Metrology   | IIT Kanpur     | 112104250 |
| 116 | noc18-me60 | Smart Materials and Intelligent System Design                             | IIT Kanpur     | 112104251 |
| 117 | noc18-me69 | Design Practice - II  | IIT Kanpur     | 112104252 |
| 118 | noc18-me43 | Heat Exchangers: Fundamentals and Design Analysis                         | IIT Kharagpur  | 112105248 |
| 119 | noc18-me61 | Robotics  | IIT Kharagpur  | 112105249 |
| 120 | noc18-me55 | Mechanics of Human Movement   | IIT Madras     | 112106248 |
| 121 | noc18-me53 | Design for Quality, Manufacturing and Assembly                            | IIT Madras     | 112106249 |
| 122 | noc18-me67 | Surrogates and Approximations in Engineering Design                       | IIT Madras     | 112106250 |
| 123 | noc18-me66 | Fundamentals of Surface Engineering: Mechanisms,Processes and Characteriz | IIT Roorkee    | 112107248 |
| 124 | noc18-me68 | Work System Design  | IIT Roorkee    | 112107249 |
| 125 | noc18-me49 | Principles of Metal Forming Technology                                    | IIT Roorkee    | 112107250 |
| 126 | noc18-mm11 | Defects in Crystalline Solids (Part-I)                                    | IIT Kanpur     | 113104081 |
| 127 | noc18-mm14 | Corrosion - Part I  | IIT Kanpur     | 113104082 |
| 128 | noc18-mm12 | Advanced Materials and Processes  | IIT Kharagpur  | 113105081 |
| 129 | noc18-mm18 | Elementary Stereology for Quantitative Metallography                      | IIT Madras     | 113106081 |
| 130 | noc18-mm21 | Welding of Advanced High Strength Steels for Automotive Applications      | IIT Madras     | 113106082 |
| 131 | noc18-mm13 | Structural Analysis of Nanomaterials                                      | IIT Roorkee    | 113107081 |
| 132 | noc18-oe05 | Structural Health Monitoring  | IIT Madras     | 114106046 |
| 133 | noc18-ph11 | Theory of groups for physics applications                                 | IIT Bombay     | 115101104 |
| 134 | noc18-ph14 | Advanced Quantum Mechanics with Applications                              | IIT Guwahati   | 115103104 |
| 135 | noc18-ph09 | Modern Optics   | IIT Kharagpur  | 115105104 |

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| 136 | noc18-ph10 | Introduction to Non-linear Optics and its Applications  | IIT Kharagpur  | 115105105 |
| 137 | noc18-ph15 | Upstream LNG Technology                                 | IIT Kharagpur  | 115105106 |
| 138 | noc18-ch24 | Infra Red Spectroscopy for Pollution Monitoring         | IISc Bangalore | 115108104 |
| 139 | noc18-de05 | Science of Clothing Comfort                             | IIT Delhi      | 116102047 |
| 140 | noc18-de04 | Yarn manufacture I : Principle of Carding and Drawing   | IIT Delhi      | 116102048 |
| 141 | noc18-ge14 | Non-Conventional Energy Resources                       | IIT Madras     | 121106014 |
| 142 | noc18-mm19 | Drilling and Blasting Technology                        | IIT Kharagpur  | 123105003 |
| 143 | noc18-ar11 | Architectural Acoustics                                 | IIT Kharagpur  | 124105004 |
| 144 | noc18-ar13 | Culturally Responsive Built Environments                | IIT Roorkee    | 124107004 |
| 145 | noc18-ar14 | Contemporary Architecture and Design                    | IIT Roorkee    | 124107005 |
| 146 | noc18-ar15 | Role of Craft and Technology in Interior - Architecture | IIT Roorkee    | 124107006 |
| 147 | noc18-ar05 | Farm Machinery  | IIT Kharagpur  | 126105009 |
| 148 | noc18-ar07 | Irrigation and Drainage                                 | IIT Kharagpur  | 126105010 |
| 149 | noc18-ar08 | Fundamentals of Food Process Engineering                | IIT Kharagpur  | 126105011 |
| 150 | noc18-ar09 | Soil and Water Conservation Engineering                 | IIT Kharagpur  | 126105012 |
| 151 | noc18-ar10 | Dairy and Food process and products technology          | IIT Kharagpur  | 126105013 |
| 152 | noc18-ar06 | Organic Farming for Sustainable Agricultural Production | IIT Kharagpur  | 126105014 |
| 153 | noc18-ge13 | Neuroscience of Human Movement                          | IIT Madras     | 127106001 |
| 154 | noc18-ge10 | Manage TB   | ICMR-NIRT      | 127106003 |
| 155 | noc18-ge16 | Ecology and Environment                                 | IIT Madras     | 127106004 |