



National Programme on Technology Enhanced Learning (NPTEL)

Funded by the Ministry of Human Resource Development (MHRD), Government of India

Joint Venture by Indian Institute of Technology (IIT) and Indian Institute of Science (IISc)



IIT BOMBAY

IIT DELHI

IIT GUWAHATI

IIT KANPUR

IIT KHARAGPUR

IIT MADRAS

IIT ROORKEE

IISc BANGALORE

ELECTRONICS & COMMUNICATION ENGINEERING

List of courses

Semester 1

| Course | Course Type | Course Coordinators |
|------------------------------------|-------------|---|
| Engineering Chemistry I | Web | Prof. B. L. Tembe Prof. K. Mangala Sunder |
| Engineering Chemistry I | Video | Prof. K. Mangala Sunder |
| Engineering Physics I (Theory) | Web | Prof. Alike Khare Prof. Pratima Agarwal Prof. S. Ravi |
| Engineering Physics I (Experiment) | Web | Prof. Alike Khare Prof. Pratima Agarwal Prof. S. Ravi |
| Physics I - Oscillations & Waves | Video | Prof. S. Bharadwaj |
| Engineering Physics I | Video | Prof. K. L. Yadav Prof. Jagdish Rai Prof. Ishwar Singh Prof. G. D. Verma |
| Mathematics I | Web | Prof. Inder K. Rana |
| Mathematics I | Video | Prof. Swagato K. Ray Prof. Shobha Madan Prof. P. Shunmugaraj |
| Engineering Mechanics | Web | Prof. Manoj K. Harbola |
| Engineering Mechanics | Web | Prof. U. S. Dixit |
| Engineering Mechanics | Video | Prof. Manoj K. Harbola |
| Engineering Mechanics | Video | Prof. U. S. Dixit |
| Basic Electrical Technology | Web | Prof. G. D. Roy Prof. N. K. De Prof. T. K. Bhattacharya |
| Basic Electrical Technology | Video | Prof. L. Umanand |

Semester 2

| Course | Course Type | Course Coordinators |
|--------------------------------------|-------------|---|
| Environment and Ecology | Web | Prof. Anuradha Sharma Prof. V. B. Upadhyay |
| Environmental Chemistry and Analysis | Web | Prof. M. S. Subramanian |
| Engineering Physics II | Web | Prof. D. K. Ghosh |
| Engineering Physics II | Video | Prof. V. Ravishankar Prof. S. Raychaudhuri |
| Mathematics II | Web | Prof. P. Chandra Prof. A. K. Lal Prof. V. Raghavendra Prof. G. Santhanam |
| Mathematics II | Video | Prof. Sunita Gakhar Prof. H. G. Sharma Prof. Tanuja Srivastava |
| Basic Thermodynamics | Web | Prof. K. Srinivasan Prof. Pradip Dutta |
| Basic Electronics | Web | Prof. Y. N. Singh Prof. Joesph John |
| Basic Electronics | Web | Prof. Pramod Agarwal |
| Basic Electronics | Video | Prof. Chitralkha Mahanta |
| Basic Electronics and Lab | Web | Prof. T. S. Natarajan |
| Basic Electronics and Lab | Video | Prof. T. S. Natarajan |

Semester 3

| Course | Course Type | Course Coordinators |
|---|-------------|---|
| Numerical Analysis in Computer Programming | Web | Prof. Rathish Kumar Prof. V. Raghavendra Prof. M. K. Kadalbajoo Prof. P. B. Sunil Kumar (IITM) |
| Numerical Analysis and Computer Programming | Video | Prof. P. B. Sunil Kumar |
| Materials Science | Web | Prof. Satish V. Kailas |
| Material Science | Video | Prof. S. K. Gupta |
| Strength of Materials | Web | Prof. Ashok Gupta |
| Strength of Materials | Video | Prof. S. K. Bhattacharyya |
| Strength of Materials | Web | Prof. V. K. Goel Prof. S. C. Sharma Prof. B. K. Mishra |

| | | |
|--|-------|--|
| Strength of Materials | Video | Prof. V. K. Goel Prof. S. C. Sharma Prof. B. K. Mishra |
| Mathematics III | Web | Prof. M. Guru Prem Prasad Prof. Durga C. Dalal |
| Mathematics III | Video | Prof. P. N. Agrawal Prof. Tanuja Srivastava |
| Electrical and Electronic Measurements | Video | Prof. V. Jagadeesh Kumar |

Semester 4

| Course | Course Type | Course Coordinators |
|------------------------------|-------------|--|
| Solid State Devices | Video | Prof. S. Karmalkar |
| Circuit Theory | Video | Prof. S. C. Dutta Roy |
| Electromagnetic Fields | Video | Prof. Harishankar Ramachandarn |
| Electromagnetic Fields | Web | Prof. Ratnajit Bhattacharjee |
| Electrical Machines I | Web | Prof. Krishna Vasudevan Prof. G. Sridhara Rao Prof. P. Sasidhara Rao |
| Digital Circuits | Web | Prof. Anil Mahanta Prof. Roy Paily Palanthinkal |
| Digital Circuits and Systems | Video | Prof. S. Srinivasan |
| IC Technology | Web | Prof. Roy Paily Palathinkal Prof. Indrajit Chakraborty |
| Data Communications | Web | Prof. H. S. Jamadagni |
| Data Communication | Video | Prof. Ajit Pal |

Semester 5

| Course | Course Type | Course Coordinators |
|--|-------------|---------------------------|
| Management Science I | Web | Prof. M. Thenmozhi |
| Management Science II | Web | Prof. R. Madhumathi |
| Computer Organization and Architecture | Web | Prof. Jatindra Kumar Deka |
| Computer Organisation and Architecture | Web | Prof. Bhaskaran Raman |
| Microprocessors and Microcontrollers | Web | Prof. Krishna Kumar |
| Microcontrollers and Applications | Web | Prof. S. P. Das |
| Control Engineering | Web | Prof. M Gopal |
| Control Engineering | Video | Prof. S. D. Agashe |

| | | |
|--------------------------------------|-------|---|
| Communication Networks and Switching | Web | Prof. S.L. Maskara |
| Digital Communication | Web | Prof. R. V. Rajakumar Prof. Saswat Chakrabarti |
| Principles of Communication | Web | Prof. V. Venkat Rao |
| Principles of Communication | Video | Prof. Surendra Prasad |
| Digital Communications | Video | Prof. Manjunath |

Semester 6

| Course | Course Type | Course Coordinators |
|-------------------------------------|-------------|---|
| Industrial Instrumentation | Web | Prof. V. Jayashankar |
| Industrial Instrumentation | Video | Prof. Alok Barua |
| Industrial Drives | Web | Prof. K. Rajagopal |
| Industrial Drives | Video | Prof. K. Gopakumar |
| Power Electronics | Web | Prof. D. Kastha Prof. D. Prasad Prof. N. K. De Prof. S. Sengupta |
| Power Electronics | Video | Prof. B. G. Fernandes Prof. Kishore Chatterjee |
| Power Systems Operation and Control | Web | Prof. A. M. Kulkarni |
| Power Systems Operation and Control | Video | Prof. S. N. Singh |

Semester 7

| Course | Course Type | Course Coordinators |
|------------------------------|-------------|--|
| Optical Communication | Web | Prof. R.K. Shevgaonkar Prof. D.K.Ghosh |
| Optical Communication System | Video | Prof. Yatindra N. Singh Prof P. K. Chatterjee |
| Digital Signal Processing | Web | Prof. Govind Sharma |
| Digital Signal Processing | Video | Prof. S.C. Dutta Roy |
| VLSI Design | Web | Prof. A. N. Chandorkar |
| VLSI Design | Web | Prof. H.S. Jamadagni |
| VLSI Circuits | Video | Prof. S. Srinivasan |
| Basics of VLSI | Video | Prof. H.S. Jamadagni |

Semester 8 / Electives

| Course | Course Type | Course Coordinators |
|---|--------------------|------------------------------|
| Transmission Lines and EM Waves | Web | Prof. R.K. Shevgaonkar |
| Transmission Lines and EM Waves | Video | Prof. R. K. Shevgaonkar |
| Broadband Networks: Concepts and Technology | Video | Prof. Abhay Karandikar |
| Information Theory and Coding | Web | Prof. Pavan S Nuggehalli |
| Information Theory and Coding | Video | Prof. S. N. Merchant |
| Semiconductor Devices | Web | Prof. G. S. Vishveshwaran |
| High Speed Semiconductor Devices | Web | Prof. Anjan Ghosh |
| High Speed Devices and Circuits | Video | Prof. K.N. Bhat |
| Probability and Random Processes | Web | Prof. Prabin K. Bora |
| Probability and Random Processes | Video | Prof. Mrityunjoy Chakraborty |
| Digital Image Processing | Web | Prof. Sumana Gupta |
| Digital Image Processing | Video | Prof. P.K. Biswas |
| Multimedia processing | Web | Prof. Somnath Sengupta |
| Signals and Systems | Video | Prof. K.S. Venkatesh |
| Adaptive Signal Processing | Video | Prof. M. Chakaborty |
| Digital Voice & Picture Communication | Video | Prof. S. Sengupta |
| Wireless Communication | Video | Prof. Ranjan Bose |



NPTEL