NPTEL

National Programme on Technology Enhanced Learning

CERTIFICATES from the

IITs & IISc

are just a click away..

https://onlinecourses.nptel.ac.in

JULY - OCTOBER 2017

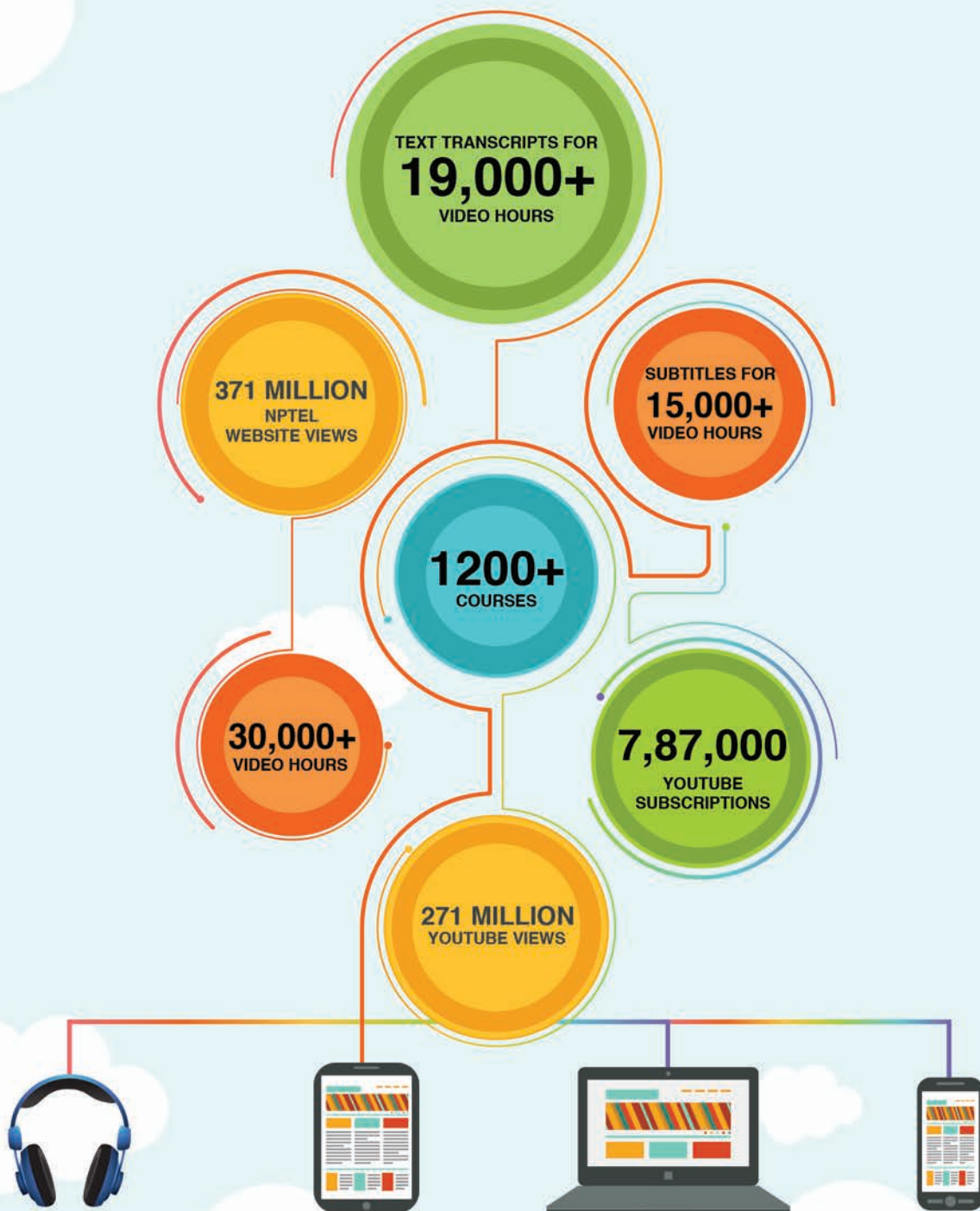IIT BOMBAY   IIT DELHI   IIT GUWAHATI   IIT KANPUR   IIT KHARAGPUR   IIT MADRAS   IIT ROORKEE   IISc BANGALORE

ABOUT NPTEL

The National Programme on Technology Enhanced Learning (NPTEL) was initiated by seven Indian Institutes of Technology (Bombay, Delhi, Kanpur, Kharagpur, Madras, Guwahati and Roorkee) along with the Indian Institute of Science, Bangalore in 2003. Five core disciplines were identified, namely, civil engineering, computer science and engineering, electrical engineering, electronics and communication engineering and mechanical engineering and 235 courses in web/video format were developed in this phase. The main goal of NPTEL Phase II (2009-14) was to build on the engineering and core science courses launched previously in NPTEL Phase I. An additional 600 web and video courses were created in all major branches of engineering, physical sciences at the undergraduate and postgraduate levels and management courses at the postgraduate level. Several improvements such as indexing of all video and web courses and keyword search were implemented.

TEXT TRANSCRIPTS FOR
19,000+
VIDEO HOURS

371 MILLION
NPTEL
WEBSITE VIEWS

SUBTITLES FOR
15,000+
VIDEO HOURS

1200+
COURSES

30,000+
VIDEO HOURS

7,87,000
YOUTUBE
SUBSCRIPTIONS

271 MILLION
YOUTUBE VIEWS

CIVIL
ENGINEERING

CIVIL ENGINEERING

10 hour courses / 4 weeks:

01. Digital Image Processing of Remote Sensing Data
02. Geotechnical Engineering Laboratory
03. Reinforced Concrete Road Bridges

20 hour courses / 8 weeks:

04. Principles of Construction Management
05. Project Planning and Control

30 hour courses / 12 weeks:

06. Computational Hydraulics
07. Design of Reinforced Concrete Structures
08. Design of Steel Structures
09. Foundation Design
10. Geoenvironmental Engineering
    (Environmental Geotechnology):
     Landfills, Slurry Ponds & Contaminated Sites
11. Integrated Waste Management for a Smart City
12. Mechanics of Solids
13. Momentum transfer in Process Engineering
14. Strength of Materials
15. Structural Analysis I

COMPUTER SCIENCE ENGINEERING

COMPUTER SCIENCE ENGINEERING

10 hour courses / 4 weeks:

01. Introduction To Cryptology
02. Introduction to Parallel Programming in OpenMP

20 hour courses / 8 weeks:

03. Cloud Computing
04. Design and Analysis of Algorithms
05. Distributed Systems
06. Fundamentals of Database Systems
07. Hardware Modeling using Verilog
08. Introduction to Machine Learning
09. Introduction to Modern Application Development
10. Introduction to Operating Systems
11. Introduction to Programming in C
12. Object Oriented Analysis and Design
13. Programming in C++
14. Programming, Data Structures and
     Algorithms using Python
15. Theory of Computation

30 hour courses / 12 weeks:

16. AI: Search Methods for Problem Solving
17. Computer Architecture and Organization
18. Computer Organization
19. Introduction to Algorithms and Analysis
20. Introduction to Internet of Things
21. Model Checking
22. Modern Compilers - Theory and Practice
23. Privacy and Security in Online Social Media
24. Social Networks
25. Software Testing

ELECTRICAL ENGINEERING

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10 hour courses / 4 weeks:

01. Photonic Integrated Circuits

20 hour courses / 8 weeks:

02. Advances in UHV Transmission and Distribution
03. An Introduction to Information Theory
04. Design for Internet of things
05. Digital Speech Processing
06. Estimation for Wireless Communications
    – MIMO/OFDM Cellular and Sensor Networks
07. Microwave Integrated Circuits
08. Optimal Control
09. Principles of Communication Systems: Part - II
10. Satellite Communication

30 hour courses / 12 weeks:

11. Analog Circuits
12. Analog Circuits and Systems through SPICE Simulation
13. Analog Communication
14. Applied Engineering Electromagnetics
15. Basic Electrical Circuits
16. Computational Electromagnetics & Applications
17. Controls Engineering
18. Design of Photovoltaic Systems
19. Electrical Machines - I
20. Enclosure Design of Electronics Equipment
21. Industrial Instrumentation
22. Introduction to Wireless and Cellular Communications
23. Modern Digital Communication Techniques
24. Networks and Systems
25. Power System Analysis

MECHANICAL ENGINEERING

MECHANICAL ENGINEERING

10 hour courses / 4 weeks:

01. Laws of thermodynamics
02. Spur and helical gear cutting

20 hour course / 8 weeks:

03. Fluid dynamics and turbomachines
04. Foundation of computational fluid dynamics
05. Fundamentals of Material Processing - I
06. Heat Treatment and Surface Hardening - II
07. Manufacturing of Composites
08. Modelling and simulation of descrete event systems
09. Nature and Properties of Materials
10. Processing of Polymers and Polymer Composites
11. Refrigeration And Air-conditioner
12. Steel Quality : Role of Secondary
    Refining & Continuous Casting
13. Sustainability through Green
    Manufacturing Systems: An Applied Approach

30 hour course / 12 weeks:

14. Acoustic and Noise Control
15. Applied Ergonomics
16. Electron diffraction and imaging
17. Energy conservation and waste heat recovery
18. Engineering fracture mechanics
19. Fundamentals of manufacturing processes
20. Manufacturing Systems Technology I & II
21. Mathematical Methods in Engineering and Science
22. Micro and nano scale energy transport
23. Noise Management & Control
24. Phase Transformation in Materials
25. X-ray Crystallography & Diffraction