



CDEEP

Centre For Distance Engineering Education Programme, IIT Bombay

Our mission is to expand our reach so that engineering and science students in every part of India and the world will have access to IIT Bombay's courseware.



“CDEEP | Professors' Outlook

CDEEP was established to take the quality teaching of IIT Bombay beyond its physical boundaries. The prime objective of CDEEP is to make sure that no aspirant in the country is deprived of quality technical education. It is expected that CDEEP will become a hub for e-learning material in all disciplines of engineering, science and humanities.



Prof. R K Shevgaonkar
Founder Head CDEEP



Prof. V M Gadre
Ex Head CDEEP

CDEEP has played a very important role in my teaching activities. It has given a permanence to the efforts that we, as faculty, put into instruction and academic interaction. It allows broader dissemination and use of the courses that we create. Prof. Kannan Moudgalya and Prof. R. K. Shevgaonkar deserve rich compliments for their efforts to set this up, along with all the staff that work with CDEEP.

CDEEP has great potential to be a leader in educational technology research. It is also well poised to fulfill the need for academic programmes in the area of e-learning, by offering courses such as instructional design and multimedia.



Prof. Sridhar Iyer
Head CDEEP ”

“CDEEP Courses | Participants speaks

CDEEP Courses are useful to improve domain knowledge. As I am working in embedded system domain. I am using this knowledge to become embedded design engineer.

----Mr. Ameya Kotawdekar

CDEEP courses are very helpful. I get the chance to take the lectures of some of the very eminent profs by sitting at home through these CDEEP lecture series. For a professional like me it is very hard to take direct courses from IIT unless and otherwise institution permits.

---- Mr. Sourav Mukhopadhyay

All courses are very good and are helpful even for M Tech students. Concepts are very good. All concepts are explained very clearly. CDEEP makes IIT knowledge accessible.

---- Mr. Prabhakaran Selvam



List of Recorded Courses

"CDEEP recorded courses" updated list is given in this booklet for easy reference. There are 258 distinct courses offered by 155 faculty members in the list.

Aerospace Engineering

AE223	Thermodynamics and Propulsion	Prof. Krishnendu Sinha
AE332	Aircraft Design	Prof. Rajkumar S Pant
AE338	Space Flight Mechanics	Prof. H. B. Hablani
AE641	Introduction to Navigation and guidance	Prof. H. B. Hablani
AE651	Aerodynamics of Compressors and Turbines	Prof. Bhaskar Roy
AE664	Lighter Than Air Systems	Prof. Rajkumar S Pant
AE705	Introduction to Flight	Prof. Rajkumar S. Pant

Biosciences and Bioengineering

BT412	Molecular Biophysics	Prof. P. V. Balaji
BT808/BS400	Principle of biomolecular interactions & recognitions/ Molecular Biophysics	Prof. P. V. Balaji

Chemistry

CH105	Inorganic Chemistry	Prof. Debabrata Maiti
CH107	Physical Chemistry	Prof. Naresh Patwari
CH481	Chemistry and Computers	Prof. B. L. Tembe
CH560	Quantum Chemistry	Prof. Sourav Pal
CH560	Quantum Chemistry	Prof. S. N. Datta
CH576	Statistical Mechanics	Prof. B. L. Tembe
CH801	Symmetry in Chemistry	Prof. Anindya Datta
CH442	Molecular Spectroscopy	Prof. Anindya Datta

Chemical Engineering

CL242	Fundamentals of heat and mass transfer	Prof. Ganesh A. Viswanathan
CL302	Process Control	Prof. R Gudi
CL358	Instrumentation and process control	Prof. Kannan Moudgalya
CL417	Process Control	Prof. Kannan Moudgalya
CL420	Introduction to Biochemical Engineering	Prof. K. V. Venkatesh
CL427	Thermodynamics of Polymeric System	Prof. Hemant Nanavati
CL451	Chemical Process Design	Prof. Sanjay Mahajani / Prof. Sharad Bhartiya
CL601	Advanced Transport Phenomena	Prof. Hemant Nanavati
CL653	State Estimation: Theory and Applications	Prof. Mani Bhushan, Prof. S. Bhartiya
CL662	Computational Biology	Prof. Pramod Wangikar
CL686	Advanced Process Control	Prof. R. Gudi
CL686	Advanced Process Control	Prof. Sachin Patwardhan
CL692	Digital Control	Prof. Kannan Moudgalya
CL701	Computational Methods in Chemical Engineering	Prof. Santosh K. Gupta
CL701	Computational Methods in Chemical Engineering	Prof. Sachin Patwardhan

Civil Engineering

CE201	Solid Mechanics	Prof. Tarun Kant
CE223	Fluid Mechanics	Prof. B. S. Pani
CE303	Soil Mechanics - I	Prof. Ashish Juneja
CE304	Soil Mechanics II	Prof. Ashish Juneja
CE317	Structural Mechanics II	Prof. Tarun Kant
CE418	Introduction to FEM	Prof. Y. M. Desai
CE488	Environmental Geotechnics	Prof. D N Singh
CE603	Numerical Methods	Prof. Tarun Kant
CE617	Elastic Plates and Shells	Prof. Tarun Kant
CE620	Finite Element Methods	Prof. Tarun Kant
CE620	Finite Element Methods	Prof. Y. M. Desai
CE620	Finite Element Methods	Prof. Tarun Kant
CE623	Advance solid Mechanics	Prof. Tarun Kant
CE623	Advanced Solid Mechanics	Prof. Y. M. Desai

CE641	Environmental Geomechanics	Prof. D. N. Singh
CE669	Physical and Stochastic Hydrology	Prof. V. Jothiprakash
CE673	Ground Water Hydrology	Prof. A.K. Rastogi
CE751	Urban Transportation Systems Planning	Prof. S. L. Dhingra
CE754	Economic Evaluation and Analysis of Transportation Infrastructure projects	Prof. S. L. Dhingra

Computer Science and Engineering

CS101	Computer Programming and Utilization	Prof. D. B. Phatak
CS101	Computer Programming and utilization	Prof. S. Sarawagi
CS101	Computer Programming and Utilization	Prof. S. Sudarshan
CS212	Electronic Design	Prof. Anil Kottantharayil
CS215	Data Analysis and Interpretation	Prof. Ajit Rajwade and Prof. Suyash Awate
CS317	Database and Information Systems	Prof. S. Sudarshan
CS331	Theory of Computation	Prof. Krishna S.
CS346	Software Engineering	Prof. S. A. Kelkar
CS602	Applied Algorithms	Prof. Milind Sohoni
CS615	Formal Specification & Verification of Programme	Prof. Supratik Chakravorty
CS617	Object Oriented Systems	Prof. R. K. Joshi
CS621	Artificial Intelligence	Prof. Pushpak Bhattacharya
CS634	Information Systems	Prof. D. B. Phatak
CS670	IT Project Management	Prof. S. A. Kelkar
CS674	Computer Vision Understanding	Prof. S. A. Kelkar
CS683	Advance computer architecture	Prof. Virendra Singh
CS684	Embedded Systems	Prof. Kavi Arya, Prof. Krithi Ramamritham , Prof. Kannan Moudgalya
CS709	Convex Optimization	Prof. Saketha Nath
CS716	Introduction to Communication Networks	Prof. Kameswari Chebrolu
CS719	Topics in Mathematical Foundations of Formal Verification	Prof. Supratik Chakravorty
CS745	Principles of Data and System Security	Prof. R.K Shyamasundar
CS754	Advanced Image Processing	Prof. Ajit Rajwade
IT 605	Distributed Systems	Prof. Sridhar Iyer
IT601	Mobile Computing	Prof. Sridhar Iyer
IT604	Human Computer Interaction	Prof. Anirudha Joshi
IT605	Computer Networks	Prof. Anirudha Sahoo
IT605	Distributed Systems	Prof. Sridhar Iyer
IT606	Embedded Systems	Prof Kavi Arya, Prof. Krithi Ramamritham, Prof. S. Ramesh
IT610	QoS in Networks	Prof. Anirudha Sahoo
IT619	Foundation Lab	Prof. Kavi Arya
IT621	Foundation Algorithms - I	Prof. H. V. Sahasrabudde
IT623	Foundation Algorithms - II	Prof. H. V. Sahasrabudde
IT626	Foundation Course on Signals & Systems	Prof. V. M. Gadre
IT628	IT Project Management	Prof. S. A. Kelkar
IT632	Language Technology for the Web	Prof. P. Bhattacharya
IT634	Communication Networks	Prof. Manjunath
IT640	Modern Information Systems	Prof. D. B. Phatak
IT653	Network Security	Prof. Bernard Menezes

Electrical Engineering

EE210	Signals and Systems	Prof. V. M. Gadre
EE603	Digital Signal Processing & its Applications	Prof. V. M. Gadre
EE004	Electronics	Prof. A. K. Verma
EE004	Electronics	Prof. M. B. Patil
EE101	Introduction to Electrical and Electronics Circuits	Prof. M. B. Patil
EE111	Introduction to Electrical Systems	Prof. B. G. Fernandes
EE112	Introduction to Electronics	Prof. A. K. Verma
EE204	Analog Circuits	Prof. A. N. Chandorkar
EE204	Analog Circuits	Prof. Jayanta Mukherjee
EE207	Electronic Devices	Prof. A. N. Chandorkar
EE210	Signals and System	Prof. H. Narayanan
EE210	Signals and Systems	Prof. U. B. Desai

EE224	Digital Systems	Prof. A. N. Chandorkar
EE225	Network Theory	Prof. H. Narayanan
EE232	Analog Electronics	Prof. Maryam Shojaei Baghini
EE302	Control Systems	Prof. V. Kulkarni
EE308	Communication Systems	Prof. S. N. Merchant
EE328	Digital Communications	Prof. S.N.Merchant
EE403	Introduction to Digital Signal Processing	Prof. Preeti S. Rao
EE403	Introduction to Digital Signal Processing	Prof. S. N. Merchant
EE410/EE719	Mixed Signal VLSI Design	Prof. Dinesh Sharma, Prof. Maryam Shojaei Baghini
EE421	Communication Systems	Prof. U.B.Desai
EE426	Digital Communication Systems	Prof. S. N. Merchant
EE429	Discrete Data Digital Control	Prof. Vishwesh Kulkarni
EE435	Introduction to Fibre Optic Communications	Prof. R.K. Shevgaonkar
EE442/760	Advanced Network Analysis	Prof. H. Narayanan
EE601	Statistical Signal Analysis	Prof. U. B. Desai
EE603	Digital Signal Processing	Prof. V. M. Gadre
EE606	Fibre Optic Communications	Prof. R. K. Shevgaonkar
EE608	Adaptive Signal Processing	Prof. U. B. Desai
EE609	Radiating Systems	Prof. Girish Kumar
EE610	Digital Image Processing	Prof. R.K. Shevgaonkar
EE610	Image Processing	Prof. Subhasis Chaudhuri
EE611	Microwave Integrated Circuits	Prof. Jayanta Mukherjee
EE613	Nonlinear Dynamical Systems	Prof. Madhu Belur
EE614	Solid State Microwave Devices & their Applications	Prof. Jayanta Mukherjee
EE618	CMOS Analog VLSI Design	Prof. M Shojaei Baghini
EE618	CMOS Analog Circuit Design	Prof. R H Zele
EE618	CMOS Analog VLSI Design	Prof. A. N. Chandorkar
EE619	Radio Frequency Microelectronics Chip Design	Prof. Shalabh Gupta
EE619	Radio Frequency Microelectronics Chip Design	Prof. R. H. Zele
EE636	Matrix Computations	Prof. H. Pillai
EE651	Digital Protection of Power Systems	Prof. S. A. Soman
EE656	Electrical Machine Analysis and Control	Prof. Mukul Chandorkar
EE657	Electric Drives	Prof. Kishore Chatterjee
EE659	A First Course in Optimization	Prof. S. A. Soman
EE660	Application of Power Electronics to Power Systems	Prof. B. G. Fernandes
EE668	Systems Design	Prof. M. P. Desai
EE669	VLSI Technology	Prof. Ramgopal Rao
EE669	VLSI Technology	Prof. A. N. Chandorkar
EE669	VLSI Technology	Prof. Anil Kottantharayil
EE671	Digital VLSI Design	Prof. Jayanta Mukherjee
EE675	Microprocessor Applications in Power electronics	Prof. Mukul Chandorkar
EE678	Wavelets	Prof. V. M. Gadre
EE705/707	V L S I Design Lab	Prof. M. Shojoei Baghini
EE706	Communication Networks	Prof. Saravanam Vijayakumar
EE709	Testing and verification of VLSI circuit	Prof. Virendra Singh
EE717	Advance Computing for Electrical Engineers	Prof. Shankar Balachandran
EE717	Advance computing for electrical engineers	Prof. Virendra Singh
EE719	Mixed-Signal VLSI Design	Prof. A. N. Chandorkar
EE719/EE410	Mixed-Signal VLSI Design	Prof. Maryam Shojaei Baghini
EE721	Hardware Description Languages	Prof. Dinesh K. Sharma
EE721	Hardware Description	Prof. Madhav P. Desai
EE724	Nanoelectronics	Prof. Ramgopal Rao
EE730	Reliability and Maintainability of Fault Tolerant Electronic Systems	Prof. A. K. Verma
EE731	Design and Analysis of Experiments Using Taguchi Method	Prof. Prakash Apte
EE735	Microelectronics Simulations Lab	Prof. D. K. Sharma
EE739	Processor Design	Prof. Virendra Singh
EE748	Advanced Topics in Computer Architecture	Prof. Virendra Singh

ENT205	IP for Entrepreneurs	Prof. Milind Atrey / Prof. Raj Hirwani
ENT201	Introduction to Entrepreneurship	Prof. A. T. Kusre
ENT202	Business Skills for Entrepreneurs	Prof. A. T. Kusre
ENT203	Identifying and Exploiting Opportunities	Prof. A. T. Kusre
ENT208	Technology Venture Creation	Prof. A. T. Kusre/ Prof. Raj Jaswa /Prof. Adit Parekh
ENT207/ENT605	Business Fundamentals for Technopreneurs	Prof. A. T. Kusre / Prof. Devdip Purkayastha
ENT209/ ENT607	Managing Technological Innovation	Prof. A. T. Kusre
ENT210	Marketing for Entrepreneurs	Prof. A. T. Kusre / Prof. Devdip Purkayastha
MNG607	Financial Reporting and Analysis	Prof. Varadraj Bapat
MNG625	Cost Accounting and Control	Prof. Varadraj Bapat
MNG652	Indian Financial And Business Model	Prof. Varadraj Bapat
MG604	Software Project Management	Prof. S. A. Kelkar
MG645	Systems Analysis And Design	Prof. S. A. Kelkar
MG647	Entrepreneurship	Prof. R. K. Lagu
MG655	Corporate Strategy	Prof. Atanu Ghosh
MGT628	Leadership and Vision	Prof. Atanu Ghosh

Physics

EP222	Classical Mechanics	Prof. D. K. Ghosh
EP228	Quantum Mechanics I	Prof. Ramadevi P
EP307	Quantum Mechanics I	Prof. Raghava Varma
EP331	Electromagnetic Theory and Relativity	Prof. S. Umasankar
PH105	Modern Physics	Prof. Shiva Prasad
PH301	Quantum Mechanics II	Prof. Ramadevi P
PH409	Introduction to Condensed Matter Physics I	Prof. Shiva Prasad
PH422	Quantum Mechanics II	Prof. S. Umasankar
PH422	Quantum Mechanics II	Prof. U. A. Yajnik
PH520	Group Theory Methods	Prof. U A Yajnik
PH523	Quantum Mechanics III	Prof. U A Yajnik
PH525	Electromagnetic Theory II	Prof. S. Umasankar
PH544	General Theory of Relativity	Prof. U. A. Yajnik

Centre for Environmental Science & Engineering

ES200	Environmental Studies: Science and Engineering	Prof. V. Sethi
ES645	Environmental Policy and Law	Prof. Shyam Asolekar

Educational Technology

ET805	Adaptive Tutoring Systems	Prof. M. Sasikumar
ET808	Knowledge Structure and Learning System Design	Prof. Maiga Chang

Industrial Design Centre

ID601	Introduction to Industrial Design	Prof. B. K. Chakravarthy
VC401	Basics of Visual Communication	Prof. Raja Mohanty
ID641	Design Strategy (Product Planning & Marketing)	Prof. B. K. Chakravarthy
DE402	Introduction to Design - Case studies	Prof. B. K. Chakravarthy

Industrial Engineering and Operations Research

IE501	Optimization Models	Prof. Vishnu Narayanan
IE502	Probabilistic Models	Prof. Jayendran Venkateswaran
IE601	Optimization Techniques	Prof. Vishnu Narayanan
IE603	Discrete Event System Simulation	Prof. Jayendran Venkateswaran
IE603	Discrete Event System Simulation	Prof. Jayendran Venkateswaran
IE641	Network Flow Models and Applications	Prof. Vishnu Narayanan

Mathematics

MA105	Calculus	Prof. B. V. Limaye
MA105	Calculus	Prof. I. K. Rana
MA106	Linear Algebra	Prof. I. K. Rana
MA106	Linear Algebra	Prof. Akhil Ranjan
MA205	Complex Analysis	Prof. Anant R. Shastri
MA401	Linear Algebra	Prof. J. K. Verma
MA401	Linear Algebra	Prof. Murali K. Srinivasan
MA419	Basic Algebra	Prof. J. K. Verma /Prof. Sudhir R. Ghorpade
MA5109	Graph Theory	Prof. S. S. Sane

Mechanical Engineering

IC102	Data Analysis and Interpretation	Prof. Santosh Noronha
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IC102	Data Analysis and Interpretation	Prof. Kannan Moudgalya, Prof. Siddharth Ghosh
IC211	Experimental and Measurement Laboratory	Prof. S. Suryanarayanan
ME119	Engineering Graphics & Drawing	Prof. Jitendra Shah
ME209	Thermodynamics	Prof. Kannan Iyer
ME209	Thermodynamics	Prof. Uday N. Gaitonde
ME338	Manufacturing Processes II	Prof. Ramesh Singh
ME410/758	Microfluidics	Prof. Amit Agrawal
ME415	Computational Fluid Dynamics and Heat Transfer	Prof. Atul Sharma
ME645	MEMS, Design Fabrication and Characterization	Prof. Prasanna S. Gandhi
ME651	Fluid Dynamics	Prof. Rajneesh Bhardwaj
ME661	Advanced Thermodynamics & combustion	Prof. Shivasubramaniam Gopalakrishnan
ME677	Laser Material Processing	Prof. Ramesh Singh
ME678	Fundamentals of Gas Dynamics	Prof. Bhalchandra Puranik
ME704	Computational Method in Fluid & Thermal Engg.	Prof. Atul Sharma
ME747	Interfacial Transport Phenomena	Prof. Rajneesh Bhardwaj
ME750	Sheet Metal Engineering	Prof. P. P. Date
ME779	Control Systems	Prof. D. N. Manik

Systems and Control Engineering

SC602	Control of Nonlinear Dynamical Systems	Prof. Ravi Banavar
SC607	Optimization	Prof. P. S. V. Nataraj
SC620	Process Automation and Feedback Control	Prof. P. S. V. Nataraj

Humanities and Social Sciences

HS200	Environmental Studies	Prof. Ranjan K. Panda
HS431	Reading Fiction	Prof. Sudha Shastri
HS450	Music Appreciation	Prof. Milind Malshe
HS699	Communication and Presentation Skills	Prof. S. Patwardhan
HS810	A Survey of Modern and Post Modern Literature	Prof. Neelima Talwar

Metallurgical Engineering and Material Science

MM204	Transport Phenomena for Materials Engineers	Prof. N. N. Viswanathan
MM650	Protective Coatings	Prof. A. S. Khanna
MM659	Transport Phenomena for Material Engg.	Prof. N. N. Viswanathan
MM695	High Temperature corrosion	Prof. A. S. Khanna
MM711	Materials for Corrosion Prevention at High Temperatures	Prof. A. S. Khanna

Centre of Studies in Resources Engineering

GNR607	Principles of Satellite Image Processing	Prof. B. K. Mohan
GNR624	Water Resources and River Basin Management	Prof. R. Nagarajan
GNR639	Natural disaster and management	Prof. R. Nagarajan
NR602	Advanced Methods in Satellite Image Processing	Prof. B. K. Mohan
NR607	Principles of Satellite Image Processing	Prof. B. K. Mohan
NR645	Advanced Methods in Satellite Image Processing	Prof. B. K. Mohan

Centre for Technology Alternatives for Rural Areas

TD603	Water Resource Management	Prof. Milind Sohoni
TD612	Analysis of Technologies in Practise	Prof. Mahdavi Gadgil

Energy Science

EN601	Non-Conventional Energy Sources	Prof. P. C. Ghosh
EN607	Energy Management	Prof. Rangan Banerjee
EN616	Solar Photovoltaic Technologies	Prof. Chetan Solanki
EN640	Solar Photovoltaics: Fundamentals	Prof. Chetan Solanki
EN703	Advanced Concepts in solar Cell Technologies	Prof. Chetan Solanki, Prof. Shaibal Sarkar
EN705	An Introduction to Energy Systems Engineering	Prof. Chetan S. Solanki

Courses Participation

CDEEP offers IIT Bombay live and recorded courses to individuals and groups from any institute or organization. CDEEP offers IIT Bombay courses to view it for free or get certified by paying a nominal fee.

To enroll and register for a course/s offered by CDEEP, choose one of following courses participation and follow instructions given there:

1) Live Classroom

This is the basic free service available for all recipients of live courses.

It has the following features:

- An individual participant can receive live lectures from IIT Bombay.
- Participants can interact live with the IIT Bombay instructors during the lectures.
- Evaluation is not permitted in this mode..
- View videos of Current semester IITB courses offered through CDEEP at http://www.cdeep.iitb.ac.in/live_course_s.php

2) Extended Live Classroom

This package extends the Live Classroom and is available only for group consisting of 25 or more participants.

It has the following features

It has the following features:

- The group can receive live lectures from IIT Bombay through arrangement to be made by them..
- The participants of the group could interact with IIT Bombay instructors during the lectures.

- The group will get a certificate that it participated in the Extended Live Classroom.
- Online payment is available to participate and enroll in this mode at http://www.cdeep.iitb.ac.in/OP/view_courses.php?pay=6

3) Credit

Certification by CDEEP, IIT Bombay for current semester courses.

- In this mode the participant has to complete all the requirements of the course as specified by the Course Instructor including assignments, quizzes, examinations.
- The participant shall be evaluated by giving grades exactly as given to IITB students.
- A Certificate shall be issued by CDEEP, IITB to successful participants showing grades secured by the participant.
- All students enrolled for this course will be eligible to participate in the Learning Management System (LMS) for this course. To make online payment visit : http://www.cdeep.iitb.ac.in/OP/view_courses.php?pay=3 then select courses you required and follow further instructions there.

Fees Structure in different modes

The fee structure per course is given below and is including GST (18% at present).

Sl. No.	Mode	Fee	Remarks
1.	Live Classroom	Nil	- -
2.	Extended Live Classroom	Rs. 35,400	One Institute/ Individual representing the group shall coordinate the group activity and be accountable to the Course Instructor about participation of individuals actively during the course.

B. Fee payable by Individual Participant.

Sl. No.	Mode	Fee
3.	Credit	
	a. Certification by IIT Bombay	Rs. 11,800



CDEEP

Ground Floor, Mathematics Building
IIT Bombay, Powai,
Mumbai - 400 076



Phone : +91-22-2576 4820
Fax : +91-22-2576 4812



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cdeep@iitb.ac.in