

EKLAVYA TECHNOLOGY CHANNEL

(An IIT – IGNOU Initiative)

TRANSMISSION SCHEDULE (JULY TO SEPTEMBER – 2006)

Course Title and Code

IIT BOMBAY	IIT DELHI	IIT KANPUR	IIT KHARAGPUR	IIT MADRAS
<ul style="list-style-type: none"> - Power Electronics (PE) - Advanced Strength of Materials (ASM) 	<ul style="list-style-type: none"> - Digital Communication (DC) - Programming Languages (PLS) - Enzyme Science & Engineering (ES) - Circuit Theory (CT) - Data Structures (DS) - Control Engineering (CE) - Numerical Methods & Computations (NMC) <p>ALL SUNDAY'S TRANSMISSION</p>	<ul style="list-style-type: none"> - Kinematics of Machines (KM) - Engineering Physics - II (EP) - Engineering Mechanics (EM) - Finite Element Methods (FEM) - Dynamics of Machines (DM) - Surveying (SUR) 	<ul style="list-style-type: none"> - Multimedia Systems (MMS) - Probability and Random Variables (PRV) - Industrial Management (IM) - System Analysis and Design (SAD) - Artificial Intelligence (AI) 	<ul style="list-style-type: none"> - Digital Circuits and Systems (DCS) - Heat Transfer (HT) - Water and Wastewater Engineering - Solid State Devices - Computer Graphics - Discrete Mathematical Structures (DMS)

The letters in parenthesis represent the code

JULY 2006

	1000 Hrs Repeat Telecast at 1800 Hrs & 0200 Hrs #	1100 Hrs Repeat Telecast at 1900 Hrs & 0300 Hrs #	1200 Hrs Repeat Telecast at 2000 Hrs & 0400 Hrs #	1300 Hrs Repeat Telecast at 2100 Hrs & 0500 Hrs #	1400 Hrs Repeat Telecast at 2200 Hrs & 0600 Hrs #	1500 Hrs Repeat Telecast at 2300 Hrs & 0700 Hrs #	1600 Hrs Repeat Telecast at 0000 Hrs & 0800 Hrs #	1700 Hrs Repeat Telecast at 0100 Hrs & 0900 Hrs #
JUL 1 (SAT)	MMS (Lec – 14)	DC (Lec – 34)	FEM - III (Lec – 3)	DCS (Lec – 9)	PE (Lec – 5)	PLS (Lec – 28)	HT (Lec – 37)	ES (Lec – 16)
JUL 2 (SUN)	SIP -5	<i>Understanding Financial Statements (Lec – 10)</i>	<i>LANs (Lec -3)</i>	<i>Telematics (Lec – 28)</i>	<i>Manufacturing Processes (Lec -7)</i>	<i>DC Machines (Lec – 6)</i>	<i>Mathematics for Information Technology (Lec - 10)</i>	<i>SIP -6</i>
JUL 3 (MON)	MMS (Lec – 15)	DC (Lec – 35)	FEM - IV (Lec – 1)	DCS (Lec – 10)	PE (Lec – 6)	PLS (Lec – 29)	HT (Lec – 38)	ES (Lec – 17)
JUL 4 (TUE)	MMS (Lec – 16)	DC (Lec – 36)	FEM - IV (Lec – 2)	DCS (Lec – 11)	PE (Lec – 7)	PLS (Lec – 30)	HT (Lec – 39)	ES (Lec – 18)
JUL 5 (WED)	MMS (Lec – 17)	DC (Lec – 37)	FEM - IV (Lec – 3)	DCS (Lec – 12)	PE (Lec – 8)	PLS (Lec – 31)	HT (Lec – 40)	ES (Lec – 19)
JUL 6 (THU)	MMS (Lec – 18)	DC (Lec – 38)	FEM - V (Lec – 1)	DCS (Lec – 13)	PE (Lec – 9)	PLS (Lec – 32)	WWE (Lec – 1)	ES (Lec – 20)

JUL 7 (FRI)	MMS (Lec – 19)	CT (Lec – 1)	FEM - V (Lec – 2)	DCS (Lec – 14)	PE (Lec – 10)	PLS (Lec – 33)	WWE (Lec – 2)	ES (Lec – 21)
JUL 8 (SAT)	MMS (Lec – 20)	CT (Lec – 2)	FEM - V (Lec – 3)	DCS (Lec – 15)	PE (Lec – 11)	PLS (Lec – 34)	WWE (Lec – 3)	ES (Lec – 22)
JUL 9 (SUN)	<i>SIP -7</i>	<i>Understanding Financial Statements (Lec – 11)</i>	<i>LANs (Lec -4)</i>	<i>Telematics (Lec – 29)</i>	<i>Manufacturing Processes (Lec -8)</i>	<i>DC Machines (Lec – 7)</i>	<i>Mathematics for Information Technology (Lec - 11)</i>	<i>SIP -8</i>
JUL 10 (MON)	MMS (Lec – 21)	CT (Lec – 3)	FEM - VI (Lec – 1)	DCS (Lec – 16)	PE (Lec – 12)	PLS (Lec – 35)	WWE (Lec – 4)	ES (Lec – 23)
JUL 11 (TUE)	MMS (Lec – 22)	CT (Lec – 4)	FEM - VI (Lec – 2)	DCS (Lec – 17)	PE (Lec – 13)	PLS (Lec – 36)	WWE (Lec – 5)	ES (Lec – 24)
JUL 12 (WED)	MMS (Lec – 23)	CT (Lec – 5)	FEM - VI (Lec – 3)	DCS (Lec – 18)	PE (Lec – 14)	PLS (Lec – 37)	WWE (Lec – 6)	ES (Lec – 25)
JUL 13 (THU)	MMS (Lec – 24)	CT (Lec – 6)	DM - I (Lec – 1)	DCS (Lec – 19)	PE (Lec – 15)	PLS (Lec – 38)	WWE (Lec – 7)	ES (Lec – 26)
JUL 14 (FRI)	MMS (Lec – 25)	CT (Lec – 7)	DM - I (Lec – 2)	DCS (Lec – 20)	PE (Lec – 16)	PLS (Lec – 39)	WWE (Lec – 8)	ES (Lec – 27)
JUL 15 (SAT)	MMS (Lec – 26)	CT (Lec – 8)	DM - I (Lec – 3)	DCS (Lec – 21)	PE (Lec – 17)	PLS (Lec – 40)	WWE (Lec – 9)	ES (Lec – 28)
JUL 16 (SUN)	<i>SIP -9</i>	<i>Understanding Financial Statements (Lec – 12)</i>	<i>LANs (Lec -5)</i>	<i>Telematics (Lec – 30)</i>	<i>Manufacturing Processes (Lec -9)</i>	<i>DC Machines (Lec – 8)</i>	<i>Mathematics for Information Technology (Lec - 12)</i>	<i>SIP -10</i>
JUL 17 (MON)	MMS (Lec – 27)	CT (Lec – 9)	SUR - I (Lec – 1)	DCS (Lec – 22)	PE (Lec – 18)	IM (Lec – 1)	WWE (Lec – 10)	DS (Lec – 1)
JUL 18 (TUE)	MMS (Lec – 28)	CT (Lec – 10)	SUR - II (Lec – 1)	DCS (Lec – 23)	PE (Lec – 19)	IM (Lec – 2)	WWE (Lec – 11)	DS (Lec – 2)
JUL 19 (WED)	MMS (Lec – 29)	CT (Lec – 11)	SUR - II (Lec – 2)	DCS (Lec – 24)	PE (Lec – 20)	IM (Lec – 3)	WWE (Lec – 12)	DS (Lec – 3)
JUL 20 (THU)	MMS (Lec – 30)	CT (Lec – 12)	SUR - II (Lec – 3)	DCS (Lec – 25)	PE (Lec – 21)	IM (Lec – 4)	WWE (Lec – 13)	DS (Lec – 4)
JUL 21 (FRI)	MMS (Lec – 31)	CT (Lec – 13)	SUR - II (Lec – 4)	DCS (Lec – 26)	PE (Lec – 22)	IM (Lec – 5)	WWE (Lec – 14)	DS (Lec – 5)
JUL 22 (SAT)	MMS (Lec – 32)	CT (Lec – 14)	SUR - II (Lec – 5)	DCS (Lec – 27)	PE (Lec – 23)	IM (Lec – 6)	WWE (Lec – 15)	DS (Lec – 6)
JUL 23 (SUN)	<i>SIP -11</i>	<i>Understanding Financial Statements (Lec – 13)</i>	<i>MO (Lec -1)</i>	<i>Telematics (Lec – 31)</i>	<i>Manufacturing Processes (Lec -10)</i>	<i>DC Machines (Lec – 9)</i>	<i>Mathematics for Information Technology (Lec - 13)</i>	<i>SIP -12</i>
JUL 24 (MON)	MMS (Lec – 33)	CT (Lec – 15)	KM - I (Lec – 1)	DCS (Lec – 28)	PE (Lec – 24)	IM (Lec – 7)	WWE (Lec – 16)	DS (Lec – 7)
JUL 25 (TUE)	MMS (Lec – 34)	CT (Lec – 16)	KM - I (Lec – 2)	DCS (Lec – 29)	PE (Lec – 25)	IM (Lec – 8)	WWE (Lec – 17)	DS (Lec – 8)
JUL 26 (WED)	MMS (Lec – 35)	CT (Lec – 17)	KM - I (Lec – 3)	DCS (Lec – 30)	PE (Lec – 26)	IM (Lec – 9)	WWE (Lec – 18)	DS (Lec – 9)
JUL 27 (THU)	MMS (Lec – 36)	CT (Lec – 18)	KM - II (Lec – 1)	DCS (Lec – 31)	PE (Lec – 27)	IM (Lec – 10)	WWE (Lec – 19)	DS (Lec – 10)
JUL 28 (FRI)	MMS (Lec – 37)	CT (Lec – 19)	KM - II (Lec – 2)	DCS (Lec – 32)	PE (Lec – 28)	IM (Lec – 11)	WWE (Lec – 20)	DS (Lec – 11)
JUL 29 (SAT)	MMS (Lec – 38)	CT (Lec – 20)	KM - II (Lec – 3)	DCS (Lec – 33)	PE (Lec – 29)	IM (Lec – 12)	WWE (Lec – 21)	DS (Lec – 12)
JUL 30 (SUN)	<i>SIP -1</i>	<i>Understanding Financial Statements (Lec – 14)</i>	<i>MO (Lec -2)</i>	<i>Telematics (Lec – 32)</i>	<i>Manufacturing Processes (Lec -11)</i>	<i>DC Machines (Lec – 10)</i>	<i>LANs (Lec - 1)</i>	<i>SIP -2</i>
JUL 31 (MON)	MMS (Lec – 39)	CT (Lec – 21)	KM - III (Lec – 1)	DCS (Lec – 34)	PE (Lec – 30)	IM (Lec – 13)	WWE (Lec – 22)	DS (Lec – 13)

AUGUST 2006

	1000 Hrs Repeat Telecast at 1800 Hrs & 0200 Hrs #	1100 Hrs Repeat Telecast at 1900 Hrs & 0300 Hrs #	1200 Hrs Repeat Telecast at 2000 Hrs & 0400 Hrs #	1300 Hrs Repeat Telecast at 2100 Hrs & 0500 Hrs #	1400 Hrs Repeat Telecast at 2200 Hrs & 0600 Hrs #	1500 Hrs Repeat Telecast at 2300 Hrs & 0700 Hrs #	1600 Hrs Repeat Telecast at 0000 Hrs & 0800 Hrs #	1700 Hrs Repeat Telecast at 0100 Hrs & 0900 Hrs #
AUG 1 (TUE)	MMS (Lec - 40)	CT (Lec - 22)	KM - III (Lec - 2)	DCS (Lec - 35)	PE (Lec - 31)	IM (Lec - 14)	WWE (Lec - 23)	DS (Lec - 14)
AUG 2 (WED)	MMS (Lec - 41)	CT (Lec - 23)	KM - III (Lec - 3)	DCS (Lec - 36)	PE (Lec - 32)	IM (Lec - 15)	WWE (Lec - 24)	DS (Lec - 15)
AUG 3 (THU)	MMS (Lec - 42)	CT (Lec - 24)	KM - III (Lec - 4)	DCS (Lec - 37)	PE (Lec - 33)	IM (Lec - 16)	WWE (Lec - 25)	DS (Lec - 16)
AUG 4 (FRI)	MMS (Lec - 43)	CT (Lec - 25)	KM - IV (Lec - 1)	DCS (Lec - 38)	PE (Lec - 34)	IM (Lec - 17)	WWE (Lec - 26)	DS (Lec - 17)
AUG 5 (SAT)	PRV (Lec - 1)	CT (Lec - 26)	KM - IV (Lec - 2)	DCS (Lec - 39)	PE (Lec - 35)	IM (Lec - 18)	WWE (Lec - 27)	DS (Lec - 18)
AUG 6 (SUN)	<i>SIP -3</i>	<i>Mathematics for Information Technology (Lec - 1)</i>	<i>MO (Lec -3)</i>	<i>Telematics (Lec - 33)</i>	<i>Manufacturing Processes (Lec -12)</i>	<i>DC Machines (Lec - 11)</i>	<i>LANs (Lec - 2)</i>	<i>SIP -4</i>
AUG 7 (MON)	PRV (Lec - 2)	CT (Lec - 27)	KM-V (Lec - 1)	DCS (Lec - 40)	PE (Lec - 36)	IM (Lec - 19)	WWE (Lec - 28)	DS (Lec - 19)
AUG 8 (TUE)	PRV (Lec - 3)	CT (Lec - 28)	KM-V (Lec - 2)	SSD (Lec - 1)	PE (Lec - 37)	IM (Lec - 20)	WWE (Lec - 29)	DS (Lec - 20)
AUG 9 (WED)	PRV (Lec - 4)	CT (Lec - 29)	KM-V (Lec - 3)	SSD (Lec - 2)	PE (Lec - 38)	IM (Lec - 21)	WWE (Lec - 30)	DS (Lec - 21)
AUG 10 (THU)	PRV (Lec - 5)	CT (Lec - 30)	KM-VI (Lec - 1)	SSD (Lec - 3)	PE (Lec - 39)	IM (Lec - 22)	WWE (Lec - 31)	DS (Lec - 22)
AUG 11 (FRI)	PRV (Lec - 6)	CT (Lec - 31)	KM-VI (Lec - 2)	SSD (Lec - 4)	PE (Lec - 40)	IM (Lec - 23)	WWE (Lec - 32)	DS (Lec - 23)
AUG 12 (SAT)	<i>CONVO 2006 (Live Telecast 10.00 - 1.00 p.m.)</i>			SSD (Lec - 5)	PE (Lec - 41)	IM (Lec - 24)	WWE (Lec - 33)	EEC (Lec - 24)
AUG 13 (SUN)	<i>SIP -5</i>	<i>Mathematics for Information Technology (Lec - 2)</i>	<i>MO (Lec -4)</i>	<i>Telematics (Lec - 34)</i>	<i>Manufacturing Processes (Lec -13)</i>	<i>DC Machines (Lec - 12)</i>	<i>LANs (Lec - 4)</i>	<i>SIP -6</i>
AUG 14 (MON)	PRV (Lec - 8)	CT (Lec - 33)	KM-VII (Lec - 1)	SSD (Lec - 6)	PE (Lec - 42)	IM (Lec - 25)	WWE (Lec - 34)	DS (Lec - 25)
AUG 15 (TUE)	PRV (Lec - 9)	CT (Lec - 34)	KM-VII (Lec - 2)	SSD (Lec - 7)	PE (Lec - 43)	IM (Lec - 26)	WWE (Lec - 35)	DS (Lec - 26)
AUG 16 (WED)	PRV (Lec - 10)	CT (Lec - 35)	KM-VII (Lec - 3)	SSD (Lec - 8)	ASM (Lec - 1)	IM (Lec - 27)	WWE (Lec - 36)	DS (Lec - 27)
AUG 17 (THU)	PRV (Lec - 11)	CT (Lec - 36)	KM-VIII (Lec - 1)	SSD (Lec - 9)	ASM (Lec - 2)	IM (Lec - 28)	WWE (Lec - 37)	DS (Lec - 28)
AUG 18 (FRI)	PRV (Lec - 12)	CT (Lec - 37)	KM-VIII (Lec - 2)	SSD (Lec - 10)	ASM (Lec - 3)	IM (Lec - 29)	WWE (Lec - 38)	DS (Lec - 29)
AUG 19 (SAT)	PRV (Lec - 13)	CT (Lec - 38)	KM-IX (Lec - 1)	SSD (Lec - 11)	ASM (Lec - 4)	IM (Lec - 30)	WWE (Lec - 39)	DS (Lec - 30)
AUG 20 (SUN)	<i>SIP -7</i>	<i>Mathematics for Information Technology (Lec - 3)</i>	<i>MO (Lec -5)</i>	<i>Telematics (Lec - 35)</i>	<i>Understanding Financial Statements (Lec - 1)</i>	<i>Synchronous Machines (Lec - 1)</i>	<i>LANs (Lec - 5)</i>	<i>SIP -8</i>
AUG 21 (MON)	PRV (Lec - 14)	CT (Lec - 39)	KM-IX (Lec - 2)	SSD (Lec - 12)	ASM (Lec - 5)	IM (Lec - 31)	WWE (Lec - 40)	DS (Lec - 31)
AUG 22 (TUE)	PRV (Lec - 15)	CT (Lec - 40)	KM-XI (Lec - 3)	SSD (Lec - 13)	ASM (Lec - 6)	IM (Lec - 32)	CG (Lec - 1)	DS (Lec - 32)
AUG 23 (WED)	PRV (Lec - 16)	CT (Lec - 41)	KM-XII (Lec - 1)	SSD (Lec - 14)	ASM (Lec - 7)	IM (Lec - 33)	CG (Lec - 2)	DS (Lec - 33)
AUG 24 (THU)	PRV (Lec - 17)	CT (Lec - 42)	KM-XII (Lec - 2)	SSD (Lec - 15)	ASM (Lec - 8)	IM (Lec - 34)	CG (Lec - 3)	DS (Lec - 34)

AUG 25 (FRI)	PRV (Lec - 18)	CT (Lec - 43)	KM-XII (Lec - 3)	SSD (Lec - 16)	ASM (Lec - 9)	IM (Lec - 35)	CG (Lec - 4)	DS (Lec - 35)
AUG 26 (SAT)	PRV (Lec - 19)	CT (Lec - 44)	KM-XIII (Lec - 1)	SSD (Lec - 17)	ASM (Lec - 10)	IM (Lec - 36)	CG (Lec - 5)	DS (Lec - 36)
AUG 27 (SUN)	<i>SIP -9</i>	<i>Mathematics for Information Technology (Lec - 4)</i>	<i>MO (Lec -6)</i>	<i>Telematics (Lec - 36)</i>	<i>Understanding Financial Statements (Lec - 2)</i>	<i>Synchronous Machines (Lec - 2)</i>	<i>Manufacturing Processes (Lec -1)</i>	<i>SIP -10</i>
AUG 28 (MON)	PRV (Lec - 20)	CT (Lec - 45)	KM-XIII (Lec - 2)	SSD (Lec - 18)	ASM (Lec - 11)	IM (Lec - 37)	CG (Lec - 6)	DS (Lec - 37)
AUG 29 (TUE)	PRV (Lec - 21)	CT (Lec - 46)	KM-XIII (Lec - 3)	SSD (Lec - 19)	ASM (Lec - 12)	IM (Lec - 38)	CG (Lec - 7)	DS (Lec - 38)
AUG 30 (WED)	PRV (Lec - 22)	CT (Lec - 47)	EP-II (Lec - 1)	SSD (Lec - 20)	ASM (Lec - 13)	IM (Lec - 39)	CG (Lec - 8)	DS (Lec - 39)
AUG 31 (THU)	PRV (Lec - 23)	CT (Lec - 48)	EP-II (Lec - 2)	SSD (Lec - 21)	ASM (Lec - 14)	SAD (Lec - 1)	CG (Lec - 9)	CE (Lec - 1)

SEPTEMBER 2006

	1000 Hrs Repeat Telecast at 1800 Hrs & 0200 Hrs #	1100 Hrs Repeat Telecast at 1900 Hrs & 0300 Hrs #	1200 Hrs Repeat Telecast at 2000 Hrs & 0400 Hrs #	1300 Hrs Repeat Telecast at 2100 Hrs & 0500 Hrs #	1400 Hrs Repeat Telecast at 2200 Hrs & 0600 Hrs #	1500 Hrs Repeat Telecast at 2300 Hrs & 0700 Hrs #	1600 Hrs Repeat Telecast at 0000 Hrs & 0800 Hrs #	1700 Hrs Repeat Telecast at 0100 Hrs & 0900 Hrs #
SEPT 1 (FRI)	PRV (Lec - 24)	CT (Lec - 49)	EP-II (Lec - 3)	SSD (Lec - 22)	ASM (Lec - 15)	SAD (Lec - 2)	CG (Lec - 10)	CE (Lec - 2)
SEPT 2 (SAT)	PRV (Lec - 25)	CT (Lec - 50)	EP-II (Lec - 4)	SSD (Lec - 23)	ASM (Lec - 16)	SAD (Lec - 3)	CG (Lec - 11)	CE (Lec - 3)
SEPT 3 (SUN)	<i>SIP -11</i>	<i>Mathematics for Information Technology (Lec - 5)</i>	<i>MO (Lec -7)</i>	<i>Telematics (Lec - 37)</i>	<i>Understanding Financial Statements (Lec - 3)</i>	<i>Synchronous Machines (Lec - 3)</i>	<i>Manufacturing Processes (Lec -2)</i>	<i>SIP -12</i>
SEPT 4 (MON)	PRV (Lec - 26)	CT (Lec - 51)	EP-II - II (Lec - 1)	SSD (Lec - 24)	ASM (Lec - 17)	SAD (Lec - 4)	CG (Lec - 12)	CE (Lec - 4)
SEPT 5 (TUE)	PRV (Lec - 27)	NMC (Lec - 1)	EP-II - II (Lec - 2)	SSD (Lec - 25)	ASM (Lec - 18)	SAD (Lec - 5)	CG (Lec - 13)	CE (Lec - 5)
SEPT 6 (WED)	PRV (Lec - 28)	NMC (Lec - 2)	EP-II - II (Lec - 3)	SSD (Lec - 26)	ASM (Lec - 19)	SAD (Lec - 6)	CG (Lec - 14)	CE (Lec - 6)
SEPT 7 (THU)	PRV (Lec - 29)	NMC (Lec - 3)	EP-II - II (Lec - 4)	SSD (Lec - 27)	ASM (Lec - 20)	SAD (Lec - 7)	CG (Lec - 15)	CE (Lec - 7)
SEPT 8 (FRI)	PRV (Lec - 30)	NMC (Lec - 4)	EP-II - II (Lec - 5)	SSD (Lec - 28)	ASM (Lec - 21)	SAD (Lec - 8)	CG (Lec - 16)	CE (Lec - 8)
SEPT 9 (SAT)	PRV (Lec - 31)	NMC (Lec - 5)	EM (Lec - 1)	SSD (Lec - 29)	ASM (Lec - 22)	SAD (Lec - 9)	CG (Lec - 17)	CE (Lec - 9)
SEPT 10 (SUN)	<i>SIP -1</i>	<i>Mathematics for Information Technology (Lec - 6)</i>	<i>MO (Lec -8)</i>	<i>Telematics (Lec - 38)</i>	<i>Understanding Financial Statements (Lec - 4)</i>	<i>Synchronous Machines (Lec - 4)</i>	<i>Manufacturing Processes (Lec -3)</i>	<i>SIP -2</i>
SEPT 11 (MON)	PRV (Lec - 32)	NMC (Lec - 6)	EM (Lec - 2)	SSD (Lec - 30)	ASM (Lec - 23)	SAD (Lec - 10)	CG (Lec - 18)	CE (Lec - 10)
SEPT 12 (TUE)	PRV (Lec - 33)	NMC (Lec - 7)	EM (Lec - 3)	SSD (Lec - 31)	ASM (Lec - 24)	SAD (Lec - 11)	CG (Lec - 19)	CE (Lec - 11)
SEPT 13 (WED)	PRV (Lec - 34)	NMC (Lec - 8)	EM (Lec - 4)	SSD (Lec - 32)	ASM (Lec - 25)	SAD (Lec - 12)	CG (Lec - 20)	CE (Lec - 12)
SEPT 14 (THU)	PRV (Lec - 35)	NMC (Lec - 9)	EM - II (Lec - 1)	SSD (Lec - 33)	ASM (Lec - 26)	SAD (Lec - 13)	CG (Lec - 21)	CE (Lec - 13)
SEPT 15 (FRI)	PRV (Lec - 36)	NMC (Lec - 10)	EM - II (Lec - 2)	SSD (Lec - 34)	ASM (Lec - 27)	SAD (Lec - 14)	CG (Lec - 22)	CE (Lec - 14)
SEPT 16 (SAT)	PRV (Lec - 37)	NMC (Lec - 11)	EM - II (Lec - 3)	SSD (Lec - 35)	ASM (Lec - 28)	SAD (Lec - 15)	CG (Lec - 23)	CE (Lec - 15)

SEPT 17 (SUN)	<i>SIP -3</i>	<i>Mathematics for Information Technology (Lec - 7)</i>	<i>MO (Lec -9)</i>	<i>Telematics (Lec - 39)</i>	<i>Understanding Financial Statements (Lec - 5)</i>	<i>Synchronous Machines (Lec - 5)</i>	<i>Manufacturing Processes (Lec -4)</i>	<i>SIP -4</i>
SEPT 18 (MON)	PRV (Lec - 38)	NMC (Lec - 12)	EM - II (Lec - 4)	SSD (Lec - 36)	ASM (Lec - 29)	SAD (Lec - 16)	CG (Lec - 24)	CE (Lec - 16)
SEPT 19 (TUE)	PRV (Lec - 39)	NMC (Lec - 13)	EM - II (Lec - 5)	SSD (Lec - 37)	ASM (Lec - 30)	SAD (Lec - 17)	CG (Lec - 25)	CE (Lec - 17)
SEPT 20 (WED)	PRV (Lec - 40)	NMC (Lec - 14)	FEM - I (Lec - 1)	SSD (Lec - 38)	ASM (Lec - 31)	SAD (Lec - 18)	CG (Lec - 26)	CE (Lec - 18)
SEPT 21 (THU)	AI (Lec - 1)	NMC (Lec - 15)	FEM - I (Lec - 2)	SSD (Lec - 39)	ASM (Lec - 32)	SAD (Lec - 19)	CG (Lec - 27)	CE (Lec - 19)
SEPT 22 (FRI)	AI (Lec - 2)	NMC (Lec - 16)	FEM - I (Lec - 3)	SSD (Lec - 40)	ASM (Lec - 33)	SAD (Lec - 20)	CG (Lec - 28)	CE (Lec - 20)
SEPT 23 (SAT)	AI (Lec - 3)	NMC (Lec - 17)	FEM - II (Lec - 1)	SSD (Lec - 41)	ASM (Lec - 34)	SAD (Lec - 21)	CG (Lec - 29)	CE (Lec - 21)
SEPT 24 (SUN)	<i>SIP -5</i>	<i>Mathematics for Information Technology (Lec - 8)</i>	<i>LANs (Lec -1)</i>	<i>Telematics (Lec - 40)</i>	<i>Understanding Financial Statements (Lec -6)</i>	<i>Synchronous Machines (Lec - 6)</i>	<i>Manufacturing Processes (Lec -5)</i>	<i>SIP -6</i>
SEPT 25 (MON)	AI (Lec - 4)	NMC (Lec - 18)	FEM - II (Lec - 2)	SSD (Lec - 42)	ASM (Lec - 35)	SAD (Lec - 22)	CG (Lec - 30)	CE (Lec - 22)
SEPT 26 (TUE)	AI (Lec - 5)	NMC (Lec - 19)	FEM - II (Lec - 3)	DMS (Lec - 1)	ASM (Lec - 36)	SAD (Lec - 23)	CG (Lec - 31)	CE (Lec - 23)
SEPT 27 (WED)	AI (Lec - 6)	NMC (Lec - 20)	FEM - II (Lec - 4)	DMS (Lec - 2)	ASM (Lec - 37)	SAD (Lec - 24)	CG (Lec - 32)	CE (Lec - 24)
SEPT 28 (THU)	AI (Lec - 7)	NMC (Lec - 21)	FEM - III (Lec - 1)	DMS (Lec - 3)	ASM (Lec - 38)	SAD (Lec - 25)	CG (Lec - 33)	CE (Lec - 25)
SEPT 29 (FRI)	AI (Lec - 8)	NMC (Lec - 22)	FEM - III (Lec - 2)	DMS (Lec - 4)	ASM (Lec - 39)	SAD (Lec - 26)	CG (Lec - 34)	CE (Lec - 26)
SEPT 30 (SAT)	AI (Lec - 9)	NMC (Lec - 23)	FEM - III (Lec - 3)	DMS (Lec - 5)	ASM (Lec - 40)	SAD (Lec - 27)	CG (Lec - 35)	CE (Lec - 27)

KINDLY NOTE:

* **Sundays are reserved for Special Interest Programs on Science and Technology related areas.**

The Program cycle starts at 10.00 a.m. daily and goes till 9.59 a.m. next day.

ABOUT THE COURSES AND THE FACULTY

IIT BOMBAY COURSES

PE – Power Electronics

Prof. B.G. Fernandes

43 Units

Prof. B.G. Fernandes has worked as Design Engineer with DCPL and then as a faculty member at IIT Kanpur and IIT Bombay since 1993. His research interests are in the areas of: Switch-Mode Rectifiers, Soft switching Techniques for converters, Power electronic interfaces for non-conventional energy sources, Permanent magnet machines and Electric Drives. He has been actively involved in teaching several undergraduate and postgraduate courses related to Power Electronics and was conferred with the Best Teacher award at IIT Bombay.

This course would be useful to both UG and PG students, teachers wanting to expand their knowledge base and working professionals interested in Power electronics and related areas. This course covers Power semiconductor devices, various converter topologies and their application to electric drives.

ASM - Advanced Strength of Materials

Prof. Surjya Kumar Maiti

40 Units

Prof. Surjya K. Maiti has been involved in teaching and research over the last 32 years. He has been associated with teaching of Mechanics of Solids/Stress Analysis/Strength of Materials, Fracture Mechanics and Finite and Boundary Element Methods, both at the undergraduate and postgraduate levels at IIT Bombay. He had spent about 2 years in industry (TELCO) before moving over to teaching; the major part of the time was spent in designing of machines and their fabrication. His research interests are in the areas of stress analysis, fracture mechanics (of metals, plastics and composites), and finite and boundary element methods.

The course is a continuation of the course on Strength of Materials. It will be useful to undergraduate students of mechanical, aerospace, civil and metallurgical engineering, AMIE students, and, perhaps, for professionals in industry and research institutions and the subject-teachers. The course deals with stresses and strains in three dimensions and their transformation, principal stresses and strains, stress-strain relations for isotropic and anisotropic materials, equilibrium equations in three dimensions and two-dimensional polar coordinates; thick cylinder and rotating disc, stresses due to shrink fitting; torsion of non-circular shafts, membrane analogy, thin box and open sections; bending of curved bars; theories of failure, Griffith theory of brittle fracture; theorems of elasticity (unique-ness theorem, energy theorems, Castigliano's theorem); thermal stresses in rectangular plates and cylinders; unsymmetric bending, shear centre; bending of plates; thin shells of revolution; beam on elastic foundation and its application to pressure vessels. Each topic has been developed in a sequential manner. Wherever possible problem solving and models have been used for illustrations, and unsolved problems are included for further exercise.

IIT DELHI COURSES

DC – DIGITAL COMMUNICATION

Prof. Surendra Prasad

38 Units

Prof. Surendra Prasad, Professor, Dept. of Electrical Engineering, specializes in the areas of Signal Processing, Communication, Radar, Sonar, Speech and Image Processing.

This course is designed as a first course in Digital Communications. The contents are useful both for an undergraduate elective as well for an introductory course at the graduate level. The course is also suitable for professionals in Telecommunications industry and R&D organisations. The topics covered are Basic Principles of PCM; Baseband Coding; Pulse Shaping; Digital Modulations and Elements of Information and coding theory.

PLS – PROGRAMMING LANGUAGES

Dr. S. Arun Kumar

40 Units

Dr. S. Arun Kumar, Associate Professor, Dept. of Computer Science & Engineering, specializes in the areas of Semantics and Verification.

This course is meant for students of 3rd/4th B.Tech./MCA programmes as well as the 'B' level of DOEACC. It covers the full range of issues in any standard first level course on the subject. All important concept in the theory of programming languages are illustrated with complete syntax, semantics and pragmatics of the constructs and their influences in other possible constructs in a language.

ES - ENZYME SCIENCE & ENGINEERING
Prof. Subhash Chand

28 Units

Prof. Subhash Chand, Professor, Department of Biochemical Engineering & Biotechnology, specializes in the area of Enzyme Engineering and Bioconversion.

Enzymes play a key role in all activities related to having cells and form the basis for all process biotechnology applications. The video course offers a detailed insight into the structure & function of enzymes, keeping in view their industrial applications. The course further covers various aspects of the immobilized enzymes and design of bioreactors for their use in industrial process. The course is designed as a 'core' course for programmes covering industrial biotechnology/biochemical engineering.

CT - CIRCUIT THEORY
Prof. S.C. Dutta Roy

51 units

Prof. S.C. Dutta Roy, Professor, Dept. of Electrical Engineering, specializes in the areas of Passive & Active Network Synthesis, Solid State Circuits, Distributed Networks, Digital Signal Processing and Neural Networks.

The course contains a detailed exposition of passive circuits. Starting with a review of basic network analysis techniques in the time domain, it goes into frequency domain techniques, with special emphasis on the concepts of poles, zeros, transfer function and their applications. Resonance phenomenon including double tuned circuits, is treated in detail. Two port theory, including scattering parameters and two-port interconnections and elementary synthesis

DS - DATA STRUCTURES
Prof. B.B. Madan

39 units

Prof. B.B. Madan, specializes in the areas of Computer Architecture, Parallel and Distributed Computing and Computer Networks.

The course is meant for 1st/2nd year students of Computer Science Engg., Electrical Engg. and of other disciplines, interested in pursuing studies in Computer Science. Starting with simple structures like arrays and lists, the course progresses to more complex structures such as trees and graphs. The concept of Abstract Data Types is introduced at the beginning of the course which helps in maintaining the distinction between the specifications and implementation of various structures.

CE – CONTROL ENGINEERING
Prof. M. Gopal

41 Units

Prof. Madan Gopal, Professor, Dept. of Electrical Engineering, specializes in the areas of Computer Controlled Systems, Robust Control, Intelligent Control and Robotics.

This course is meant for 3rd Year students of B.Tech./B.E. Electrical Engineering, Electronics & Communication, Mechanical Engg., Chemical Engg., and Aerospace Engg. The contents covered are Dynamic Models & Responses; Basic Principles of Feedback Control & their performance; Concepts of Stability and Routh Stability Criterion; Compensator Design using Root Locus & Bode Plots.

NMC – NUMERICAL METHODS AND COMPUTATIONS
Prof. S.R.K. Iyengar

41 units

Prof. S.R.K. Iyengar, Professor, Dept. of Mathematics, specializes in the area of Numerical Analysis and Fluid Dynamics.

This course is a basic foundation course in mathematics for all Engineering and other undergraduate students.

SUNDAY'S PROGRAMMES

MATHEMATICS FOR INFORMATION TECHNOLOGY

13 units

Dr. D.P. Dubhashi

Dr. D. P. Dubhashi, Assistant Professor in Dept. of Computer Science & Engineering, IIT Delhi, is a B.Tech from IIT Delhi, a Ph.D. from Cornell University and has put in extensive work in research in Germany and Denmark.

This course focuses on the basic mathematical concepts underlying Information Technology. The course is organised into a sequence of independent modules. The course is designed as an introduction for students in Computer Science with some background in high-school mathematics, but can also be used by professionals interested in learning about the mathematics behind information technology. It can be used as a standard Discrete Structures course taught in most modern undergraduate syllabi in CS at the first or second year level.

TELEMATICS

63 units

Prof. Surendra Prasad (Coordinator)

By Experts from all five IITs (Delhi, Bombay, Kanpur, Madras and Kharagpur) and Indian Institute of Science, Bangalore. The Course is coordinated by Prof. Surendra Prasad, IIT Delhi.

This Course is designed to be equally relevant for students as well as professionals in industry. The Course, in modular format, provides detailed inputs on various topics, which fall under the broad subject of Telematics - a word coined specially for technology of representing, sending, switching, networking and receiving a variety of information in digital form.

SYNCHRONOUS MACHINES

11 units

Prof. S.S. Murthy

Prof. S.S. Murthy, Professor, Dept. of Electrical Engineering, specializes in the areas of Electric Machine Drives, Power Electronics Applications, Renewable Energy and Energy Conservation.

This module is meant for Electrical Engineering students and can also be used by industries for training on Synchronous Machines.

D.C. MACHINES

12 units

Prof. S.S. Murthy

Prof. S.S. Murthy, Professor, Dept. of Electrical Engineering, specializes in the areas of Electric Machine Drives, Power Electronics Applications, Renewable Energy and Energy Conservation.

This module is meant for Electrical Engineering students and can also be used by industries for training on DC Machines.

MANUFACTURING PROCESSES

13 units

Prof. R.S. Parmar

Prof. R.S. Parmar, Professor, Dept. of Mechanical Engineering, specializes in the areas of Production Engineering, Welding and Foundry Technology.

This Course is meant for 1st Year students of all engineering disciplines. The topics covered are, introduction to manufacturing processes, engineering materials, casting processes, metal forming, forging processes, sheet metal operations, welding processes and machine tools and metal cutting.

BUILDING LANs

5 units

Dr. Shivraj Kanungo

Dr. Shivraj Kanungo, Associate Professor, Dept. of Management Studies, specializes in the areas of Management of Information Technology, Organizational Culture and Software Engineering Management.

This is a basic introductory module on networks and is suitable for both the under-graduate and the post-graduate students. It broadly covers the definition, the technology and the design aspects of the local area networks.

UNDERSTANDING FINANCIAL STATEMENTS

15 units

Prof. P.K. Jain

Prof. P.K. Jain, Professor, Dept. of Management Studies, specializes in the areas of Financial Management and Development Banking.

This course is meant not only for the students doing Management courses but also for practicing executives in particular with non - finance background.

IIT KANPUR COURSES

KM – KINEMATICS OF MACHINES

39 Units

Prof. A.K. Mallik

Prof. A.K. Mallik is a Professor in Department of Mechanical Engineering, IIT Kanpur. His Research Interests include Mechanical Vibration, Vibration control, Nonlinear vibration and Chaos in mechanical systems, Kinematics and dynamics of machinery. He is a fellow of the Indian National Academy of Engineering, Indian Academy of Sciences and the Indian National Science Academy.

This course is meant for second and third year engineering students.

EP-II – ENGINEERING PHYSICS

9 Units

Prof. V. Ravishankar

Prof. Venkataramu Ravishankar is an Associate Professor in Department of Physics, IIT Kanpur. His Research Interests include HEP, Quark-Gluon Plasma, Quantum Hall Effect. He is a theoretical High Energy physicist, whose main interest lies in Quark-Gluon Plasma (QGP). Currently, he is working on equilibration of QGP in heavy-ion collisions and generalised exclusion statistics. He is also interested in Quantum Hall Systems. Apart from core courses, he has offered electives like Special and General Relativity, Particle Physics, Quantum Chromodynamics and Group Theory.

This course is meant for first and second year students in Physics and Engineering.

EM – ENGINEERING MECHANICS

9 Units

Prof. Manoj Harbola

Prof. Manoj Harbola is a Professor in Department of Physics, IIT Kanpur. He is a theoretical physicist, whose principal interest lies in Electronic Structure of Atoms, Molecules and Solids using Density Functional Methods

This course is meant for first and second year engineering students.

FEM – FINITE ELEMENT METHOD

19 Units

Dr. C.S. Upadhyay

Dr. C.S. Upadhyay is a Professor in Aerospace Engineering Department, IIT Kanpur. His areas of interest are Finite Element Analysis: Adaptive FEM; Time Dependent Nonlinear Problems; Generalized FEM, Analysis & Design of Composite Structures, Micromechanics; Homogenisation; Hierarchic plate and shell modeling.

This course is meant for final year engineering students.

DM – DYNAMICS OF MACHINES

3 Units

Prof. Amitabha Ghosh

Prof. Amitabha Ghosh joined the Mechanical Engineering Department of IIT Kanpur in 1970. He obtained his doctoral degree from Calcutta University. He was at the University of Aachen of Germany as the Alexander von Humboldt fellow. His areas of expertise are Mechanical Vibration, Dynamics of Machines, Chaos in Mechanical Systems, Manufacturing Science and Nanotechnology. He is a fellow of the Indian National Academy of Engineering, Indian Academy of Sciences and the Indian National Science Academy. He is the former Director IIT Kharagpur.

This course is meant for Second and third year engineering students.

SUR – SURVEYING

5 Units

Prof. Barat Lohani

Dr. Bharat Lohani earned his PhD from the University of Reading, UK. He has been assistant professor at the IIT Kanpur since December 2002. His areas of interest are remote sensing, GIS, GPS, and Surveying. In particular, he is working in the area of laser based mapping both terrestrial and airborne for engineering applications. He has taught land surveying for over 10 years now. He designed the course and laboratory program at IT-BHU for land surveying. He also developed a laboratory for modern surveying, GIS, and Remote Sensing at IT-BHU with the help of Department of Science and Technology. He has taught Geoinformatics course (mainly consisting of land surveying components) at IIT Kanpur and conducted the laboratory exercises. Besides, he has also conducted continuing education program at IIT Kanpur on Surveying and laser mapping for professionals from field.

This course is meant for first and second year engineering students

IIT KHARAGPUR COURSES

MMS – MULTIMEDIA SYSTEMS

43 Units

Prof. S. Sengupta

Prof. S. Sengupta is in the Dept of Electronics and Electrical Communication Engineering at the Indian Institute of Technology, Kharagpur. He has worked in the areas of Microprocessor based systems, Digital Signal Processing hardware and software and Digital Image Processing. He was instrumental in setting up of the Digital Image Processing facilities at TEC R & D. Prof. Sengupta is the author of two video lecture series and several papers in International journals and conferences. His research interests are in the fields of Digital Image Processing, Multimedia Communication and Coding.

This course deals with the basic problems of multimedia communication. It includes exhaustive coverage of lossless and lossy video coding techniques, starting from the DCT based approach to more advanced techniques like Wavelet and Model based coding. Thereafter, the Multimedia Standards for Binary images, Still Images, Moving Images and Video Conferencing applications have been addressed. Audio coding standards have been covered to a considerable depth and the crucial aspects of audio-video synchronization have been discussed. Some of the more advanced topics like content based image retrieval have also been discussed.

PRV – PROBABILITY AND RANDOM VARIABLES

40 Units

Prof. M Chakraborty

M Chakraborty (Ph.D., IIT Delhi) is a Professor in Electronics & Electrical Communication Engineering department. He joined the Institute in 1994. His expertise and Research Areas are Digital and Adaptive Signal Processing, VLSI Signal Processing, Signal Processing for Wireless Communication and Wavelets and Multiresolution Signal Processing

This is a fundamental course on random signals and processes, and is aimed for all the undergraduate students of electrical, electronics and computer science engineering. The course deals with basics of probability Fundamentals. The focus of course on random variables and random process form view point of telecommunications.

IM – INDUSTRIAL MANAGEMENT

39 Units

Professor S Sahu, Professor S Srinivasan and Professor K Chakraborty.

Professor S Sahu is currently a Professor in the Deptt of Industrial Engg & Management at IIT Kharagpur. He holds a Bachelor Degree in Mechanical Engg from REC Rourkela, M Tech and PhD in Industrial Engg from IIT Kharagpur and a Postgraduate Diploma in Industrial Management from the RVB Delft in The Netherlands. He has over 37 years experience in Teaching, Research and Consultancy at IIT Kharagpur and has published over 45 papers in reputed journals. He has guided 13 Ph D scholars and over 100 MTech projects.

Professor S Srinivasan is working at Indian Institute of Technology for the past 25 years. His areas of interest are: Financial Management, Industrial Management and System Dynamics.

Prof. Kalyan Chakravarti is an alumnus of IIT Kharagpur, IIM Ahmedabad and the Harvard Business School. He has wide corporate experience, has held several responsible appointments and has been CEO and Member of the Board. He has been Dean, IIT Kharagpur's Business School, and continues now as Professor and Executive Advisor. He is Fellow of the Institution of Engineers (India) and a Life Fellow of the Indian Academy of Social Sciences. He is also Vice Chairman of the National Safety Council of India.

It is a first level course on Industrial Management and deals with the art and soft skills of industrial and enterprise management. The glimpses of vision, mission, SWOT analysis and strategic plan are introduced and their importance in gaining and sustaining competitive advantage by organizations is explained. The important elements of Human Resource Management as required by practicing managers, such as manpower planning, recruitment, selection, job analysis, job design, safety and welfare, performance management, reward administration, career planning and organizational culture are touched upon.

SAD – SYSTEM ANALYSIS AND DESIGN

40 Units

Professor Biswajit Mahanty

Dr. Biswajit Mahanty, a professor at the department of Industrial Engineering and Management, IIT Kharagpur, is having more than 22 years of academic, research, and industrial experience. He has taught information systems related subjects for many years at IIT Kharagpur and also for some time at the school of management of Asian Institute of Technology, Bangkok. His areas of interest include Information Systems, Optimization and Systems Modelling. He is also actively involved in real-life software project management process through a number of industrial consultancy projects.

This course is about the analysis and design of information systems in the real world. After introducing the software life cycle models, it delves into the software project management and requirement analysis concepts with suitable case studies. Next come discussions on data flow diagrams, decision analysis, and system design. Eight lectures on the design of database systems and five lectures on the object-oriented analysis and design concepts are presented next. Finally, software quality assurance is discussed.

AI – ARTIFICIAL INTELLIGENCE

28 Units

Dr. Pallab Dasgupta

Dr. Pallab Dasgupta is in the Dept of Computer Science & Engineering at the Indian Institute of Technology, Kharagpur. His research interests include Formal Verification of VLSI circuits, Automated Problem Solving in Artificial Intelligence, and Distributed Computing. He has authored more than 50 research papers and a book on Multi-objective Heuristic Search. He has received several awards including the INSA Young Scientist Medal, the INAE Young Engineer Medal, and the Young Associate of the Indian Academy of Sciences.

The focus of this course is on equipping an engineer with the knowledge of developing and using Artificial Intelligence techniques for problem solving, deduction and planning. Consequently, this course mainly deals with the computational and problem solving aspects of Artificial Intelligence techniques. The course contains in-depth analysis of Automated Problem Solving Techniques, Logic and Deduction, Planning and Learning. This should be viewed as a first-level course on Artificial Intelligence.

IIT MADRAS COURSES

DCS – DIGITAL CIRCUITS AND SYSTEMS

40 Units

Prof. S. Srinivasan

Dr. S. Srinivasan obtained B.E. degree from the University of Madras and M.Tech and Ph.D degrees from the Indian Institute of Technology, Madras. He has over 30 years of experience in teaching, research, laboratory development and implementation sponsored research projects. His areas of teaching and research interests are Digital Design, Computer Architectures, DSP Applications and VLSI Design. He has guided a large number of M.S. and Ph.D. students and has over 70 research publications to his credit. He was a member of a team which developed the material for a continuing education course for the Indira Gandhi National Open University. He has co-authored a text book on DSP Architectures and Implementations and has delivered 4 series of video courses on Digital Design, Microprocessors and VLSI Design. He is at present a Professor and head of the Department of Electrical Engineering at IIT, Madras.

This video course is designed for the first level under graduate students to lay a strong foundation on the fundamentals of design of digital circuits and systems. The course starts with simple combinational logic and sequential logic circuits. It shows how to optimize digital circuits using Karnaugh maps and thereby design a number of combinational and sequential circuits such as arithmetic circuits, flip-flops, counters, shift registers and state machines. The course also presents advanced topics such as design of systems using MSI/LSI chips, ROM and PAL/PLA. Finally, a system design example, the traffic light controller, is presented.

HT – HEAT TRANSFER

40 Units

Prof. S.P. Venkateshan

Prof. S.P. Venkateshan obtained his Ph.D in the area of Radiative Heat Transfer from the Indian Institute of Science, Bangalore in 1977. After a four year Post - Doctoral work at Yale University, Connecticut, USA. He joined IIT Madras as an Assistant Professor and became a full Professor in 1990. He has taught courses on Heat Transfer and Power Plants both at IIT Madras as well as at Monash University, Clayton, Australia. He has more than fifty published papers to his credit. He also has three patents in the area of Instrumentation. Areas of his current research interests are: Interaction of radiation with free convection, phase change heat transfer, instrumentation.

The series of lectures presupposes a background in Thermodynamics and Mathematics (calculus, including differential equations). After introducing the various modes of heat transfer, citing examples from engineering applications, the lectures take up detailed exposition of conduction, radiation and convection heat transfer, in that order. Study of conduction heat transfer is approached by describing one dimensional steady systems, thereby introducing the methods which are followed in more complex multidimensional problems. Numerical methods are described for solving complex heat conduction problems. Radiation heat transfer deals with the fundamental radiation physics describing black body radiation characteristics. Surface radiation is treated first, in great detail. Surface properties relevant to the study of radiation heat transfer are introduced. Geometric concepts of shape factors are dealt with in great detail. Radiant interchange amongst gray, diffuse surfaces are treated by the radiosity irradiation formulation. Gas radiation is discussed in detail, introducing the equation of transfer and the concept of mean beam length. Hottel's charts for calculating gas emissivities are introduced. Radiation interchange in an enclosure containing an absorbing emitting gas is dealt with in detail. Dimensional analysis forms a prelude to the study of convection heat transfer. Internal flow and heat transfer is considered first. Concepts of fully developed flow and heat transfer are explained in detail. Correlations are given for both laminar as well as turbulent flows. External flows are considered by describing the boundary layer flow past a flat plate placed parallel to the free stream. This is followed by a description of external flows over a cylinder and then a bank of cylinders. Appropriate correlations are also presented. Analysis of various types of Heat Exchangers are dealt with in detail, introducing the concept of LMTD, effectiveness and NTU. An introduction to free convection is provided by treating free convection from an isothermal vertical surface by the integral approach.

Dr. Sukhendu Das, Associate Professor
Deptt. Of CS&E, IIT Madras, Chennai -36, India.

Dr. Sukhendu Das was born in 1962, in Kharagpur, W.B., India. He completed his B.Tech degree from IIT Kharagpur in the Deptt. of Electrical Engg. in 1985 and

M. Tech Degree in the area of Computer Technology from IIT Delhi in 1987. He then obtained his Ph.D degree from IIT Kharagpur in 1993. His current areas of research interests are: Visual Perception, Computational Intelligence, Computer Vision: Digital Image Processing and Pattern Recognition, Computer Graphics, Computational Science and Engg., and Digital and Analog Systems. Dr. Sukhendu Das has been a faculty in the Deptt. Of CS&E, IIT Madras, INDIA, since 1989, where he is currently working as an Associate Professor. He has guided one (currently guiding four) PhD student and several MS (currently guiding eight), M. Tech and B. Tech students. He had completed several international and national sponsored projects and consultancies, both as principle and co-investigators. Currently he is involved in five (5) sponsored projects in IIT Madras. He has published several technical papers in international and national journals and conferences. He has received one best paper and a best design contest award.

Synopsis of the Video Lectures in COMPUTER GRAPHICS
By Dr.Sukhendu Das

Computer Graphics deals with the creation, manipulation, storage and display of pictures and modeling of objects forming the images. The subject of Computer Graphics has grown with the advent of modern and new technologies in hardware, software and algorithms.

Modeling of objects involve concepts from various fields such as, physical, mathematical, engineering, structural, natural phenomena, abstract (conceptual) etc. A user would like the choice of manipulating pictures using keyboard, mouse, touch-sensitive panel, joystick etc. These requirements gave rise to interactive graphics. Computer Graphics is involved in almost all fields of computer applications – from the process of booting a computer, login screen to applications in window based platforms and video games. Some of the diverse areas of application include, engineering (CAD/CFD/CAE, VLSI, simulators), education and teaching, medicine, commerce, games, animation movies, military, cartography, digital image processing, advertising and entertainment.

Simulations using Computer Graphics help to generate significant spatial and temporal data describing three-dimensional structures and environments. Visualization techniques in computer graphics provide mechanisms to display multidimensional data in various forms, allowing significant information to be communicated to the designer or planner. Modern and recent advances in Computer Graphics deal with visual realism, Virtual (augmented and mobile) reality, Haptics devices, image/video based rendering, soft object modeling, light field rendering, radiosity, light collage, procedural textures and noise generation, parallel processing and pipelining hardware etc.

To understand the requirements, technology and issues involved in these recent advances, a student must understand the basic concepts, ideas, algorithms and principles behind computer graphics. This video lecture has been designed for such a purpose and is meant for the beginner. It is better to have basic computer science background, although it is not a must. The student must brush up his skills in linear algebra, analytical geometry and programming to follow the course material more effectively.

The outline of course covers important aspects of :

- Introduction
- Display Systems
- Transformations – 2D & 3D
- Projective transformations and Viewing pipeline
- Line, circle and Ellipse drawing
- Scanline-Polygon filling algorithm
- Clipping
- Solid Modeling
- Visible Surface Determination
- Illumination and Shading
- Curves and Surfaces
- Digital image processing, compression and enhancement
- Special topics

No course is complete without reference books. It is advised that the students must read 1-2 of the reference books suggested in the introductory part of the lecture, for better and comprehensive understanding of the basic concepts.

The course material has adequate coverage of mathematics, geometry, and algorithms and uses illustrations wherever possible to describe the concepts more vividly. It is our hope that students will benefit from the course material and obtain the enthusiasm to learn more about advanced concepts of computer graphics, after going through the material covered in this lecture series.