ATTENDANCE SHEET -CUM- MINUTES OF BOARD OF FACULTY

Minutes of the meeting of the Board of Faculty Studies of _Engineering Faculty_

held on _15/4/2017_ (date) at _3·00 PM_ (time).

PRESENT

(Name)		(Signature)
1. Prof S.K. Gaur	(Chairperson)	Gyam
2. Prof Puneet Mahajan	(External Expert 1)	Discussed electronically
3. Prof Prabhas Bhardwaj	(External Expert 2)	Discussed electronically
4. Prof Ravindra Kumar	(Internal Member)	Ravi
5. Prof A K Saxena	(Internal Member)	AKL
6. Prof G.S. Tyagi	(Internal Member)	—
7. Rahul Caprihan	(Internal Member)	—
8. V. Soami Das	(Internal Member)	
9. K. HANS RAJ	(Internal Member)	K. Hans Raj
10. S. P. Mathur	(Internal Member)	
11. D.K. Chaturvedi	(Internal Member)	
12. MAN MOHAN	(Internal Member)	Mc
13. S. K. Srivastava	(Internal Member)	
14. Prof Sanat Kumar	(Internal Member)	S. Kumar
15.	(Internal Member)	
16.	(Internal Member)	
17.	(Internal Member)	
18.	(Internal Member)	
19.	(Internal Member)	
20.	(Internal Member)	

Proposed changes in the existing system

Enclosed as Annexure I, II, III, IV & V

Gyam

(Signature of Chairperson)

M Gmail

Sant Gaur <santkumargaurdei@gmail.com>

Re:BOS meeting
1 message

Navneet Arora <navneetroorkee@gmail.com>   Thu, Mar 30, 2017 at 5:43 AM
To: Sant Gaur <santkumargaurdei@gmail.com>

Dear Sir,
I am unable to attend the proposed meeting. However, I have seen the agenda and proposed changes in syalbii, I hereby agree with the proposed changes. Rest of the members can finalise on the spot.

Regards
Navneet Arora

On Mar 29, 2017 11:03 PM, "Sant Gaur" <santkumargaurdei@gmail.com> wrote:

29/03/2017

Dear Professor Navneet,

Greetings!

This has reference to our earlier conversation regarding proposals for modifications/additions in the existing academic content of courses at UG/PG level programme in the Department of Mechanical Engineering. The Institute also has a vision of imparting skill oriented programmes in line with PMKVY. As such the Faculty of Engineering is also taking initiative in this direction too. It has introduced modular programmes of nine weeks each for 10 plus 2 level candidates in giving them practical inputs for 3D printing skills. We have an operational 3D printing lab in the department and are also running elective courses in Additive Manufacturing at UG/PG level.

There are, therefore, two proposals:

1. It relates to suggested modifications in the syllabus of Mechanics of Solids II with its course code as MEM-503 being taught to III years (V Semester) students of B.Tech Mechanical Engineering programme. This is submitted for your kind comments and fruitful advice and is given as Annexure I.

2. The second proposal (Annexure II) deals with the structure of the modules meant for 3D printing skill course for 10 plus 2 level students. It has in-built structure of core courses which form the core of the institute and is compulsory for all the disciplines at UG level and below in order to achieve the mission objective of the institute, that is, **Making a Complete Man.**

I shall be honoured, delighted and grateful to have your valuable advice.

With best regards,

Affectionately yours,

Sant K. Gaur

—
Dr. Sant K. Gaur
Professor & Dean,
Faculty of Engineering
Dayalbagh Educational Institute
(Deemed University)
Dayalbagh, Agra
(UP) 282005. India

+91-562-6548399
+91-897-956-0111

Annexure I

M Gmail

Sant Gaur <santkumargaurdei@gmail.com>

Proposal for faculty board
2 messages

Sant Gaur <santkumargaurdei@gmail.com>   Fri, Apr 14, 2017 at 9:05 PM
To: P Bhardwaj <pbhardwaj.mec@itbhu.ac.in>

Dear Prof. Prabhas,
Greetings
Please find the the proposal from mechanical & electrical engineering department which have been considered and
approved in their respective board of studies meetings the same are being submitted for your valuable consideration
approval suggestions and advice as annexure I & II.
Thanks and regards
--
Dr. Sant K. Gaur
Professor & Dean,
Faculty of Engineering
Dayalbagh Educational Institute
(Deemed University)
Dayalbagh, Agra
(UP) 282005. India

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2 attachments

📄 **Faculty board1.docx**
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📄 **Faculty board2.docx**
   38K

P Bhardwaj <pbhardwaj.mec@itbhu.ac.in>   Sat, Apr 15, 2017 at 2:11 PM
To: Sant Gaur <santkumargaurdei@gmail.com>

To

Dr. Sant K. Gaur

Professor & Dean,
Faculty of Engineering

Dayalbagh Educational Institute
Dayalbagh, Agra

Dear Sir,

I am really thankful to you to consider me as one of the member of this valuable board. In relation to the proposals
sent to me through mail, please note the following...

Electrical Engineering Department:
- **Work Experience Course EEW4XX: Electronics Project, Microcontrollers and IoT**
wil be a good addition to the curricula. I agree with this as it is in line with recent
developments.
- **Regarding the Mathematics Courses:** Shifts in the content and the courses are well
thought and looks to be good for stream and non-stream students. Specially the decision of

MAM58X: Probability and Statistics is very pertaining to the Engineering Students but also to any student who is going through a professional course.

- I feel proposal no 6 and 7 will be more suitable to the curricula of Electrical Engineering. I do agree with the proposed change and its justifications.

- Proposal no. 8 is also very good as first semester is the right time to develop proficiency in English. This can be used by a student for rest of the years of the program as well as during the carrier after completion of program.

Mechanical Engineering Department:
- **Proposal M1** is a good addition as it will strengthen the stream of Industrial Engineering with the option of **MAM58X: Probability and Statistics** available to the with general pool of subjects. I agree with this change.
- **Minor of Proposal M2** is well justified and will reinforce **MEM505** in line with recent developments and application of composites.
- **Proposal M3** is a great idea of having a modular course. It will be developing a skilled force in India in this particular field which has more relevance in the recent developments. I agree with the approval of this type course.

At the end, I wish a very strong curricula that will produce a workforce that India is requiring at this critical time of shift from developing towards developed country.

Thank you very much with Regards.

Prabhas

Associate Professor
Mechanical Engineering Department
Indian Institute of Technology(BHU)
Varanasi, India 221 005
[Quoted text hidden]
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Dr. Prabhas Bhardwaj
Associate Professor
Mechanical Engineering Department
Indian Institute of Technology(BHU)
Varanasi, India 221 005

M Gmail

Sant Gaur <santkumargaurdei@gmail.com>

Proposal for faculty board
4 messages

Sant Gaur <santkumargaurdei@gmail.com>   Fri, Apr 14, 2017 at 9:07 PM
To: mahajan@am.iitd.ac.in

Dear Prof. Puneet,
Greetings
Please find the the proposal from mechanical & electrical engineering department which have been considered and approved in their respective board of studies meetings the same are being submitted for your valuable consideration approval suggestions and advice as annexure I & II.
Thanks and regards

--
Dr. Sant K. Gaur
Professor & Dean,
Faculty of Engineering
Dayalbagh Educational Institute
(Deemed University)
Dayalbagh, Agra
(UP) 282005. India

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2 attachments

📄 **Faculty board1.docx**
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📄 **Faculty board2.docx**
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Sant Gaur <santkumargaurdei@gmail.com>   Fri, Apr 14, 2017 at 10:04 PM
To: mahajan@am.iitd.ac.in

Plesae find attachment
[Quoted text hidden]

📄 **annexure III.docx**
37K

Puneet Mahajan <mahajan@am.iitd.ac.in>   Fri, Apr 14, 2017 at 10:37 PM
To: Sant Gaur <santkumargaurdei@gmail.com>

Dear Prof. Gaur
I agree with the changes introduced.
However, one comment on EEW4XX:
It is an extra course which means total credits of the student will increase. In your last revision also I had expressed the concern that while in IITs we are reducing the credits of students so that they have time to think and innovate, at Dayalbagh tendency is to add more credits so as to feed students more information. This leaves them less time to think on their own. If possible, a new course should be introduced provided credits are reduced somewhere else.

If however, total credits are remaining unchanged please ignore my comments.
Regards
Puneet Mahajan
[Quoted text hidden]

Sant Gaur <santkumargaurdei@gmail.com>   Sat, Apr 15, 2017 at 12:34 PM
To: Puneet Mahajan <mahajan@am.iitd.ac.in>

Dear Prof.Puneet
Thanks for your fruitful comments.However the course EEW 4XX is a work experience course and is an elective in addition to several other electives.A student has to opt any one out of the given bunch of work experience courses.All courses are of the same credit and hence no increase in over all credit will be there.
Regards
[Quoted text hidden]

M Gmail

Sant Gaur <santkumargaurdei@gmail.com>

Re: BOS Proposal First Proposal

1 message

Suhail Ahmad <suhail@am.iitd.ac.in>   Sun, Apr 2, 2017 at 10:07 AM
To: Sant Gaur <santkumargaurdei@gmail.com>

Dear Prof Gaur,
              I have gone through the first proposal for changes
and justification in MEM503 – Mechanics of Solids II:

      Suggested changes regarding introducing composites are positive.
All the more appropriate when the topics on experimental stress
analysis are introduced in other course.

Suhail Ahmad

> 29/03/2017
>
> Dear Professor Suhail,
>
>
>
> Greetings!
>
>
>
> This has reference to our earlier conversation regarding proposals for
> modifications/additions in the existing academic content of courses at
> UG/PG level programme in the Department of Mechanical Engineering. The
> Institute also has a vision of imparting skill oriented programmes in line
> with PMKVY. As such the Faculty of Engineering is also taking initiative
> in
> this direction too. It has introduced modular programmes of nine weeks
> each
> for 10 plus 2 level candidates in giving them practical inputs for 3D
> printing skills. We have an operational 3D printing lab in the department
> and are also running elective courses in Additive Manufacturing at UG/PG
> level.
>
> There are, therefore, two proposals:
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> 1. It relates to suggested modifications in the syllabus of Mechanics of
> Solids II with its course code as MEM-503 being taught to III years (V
> Semester) students of B.Tech Mechanical Engineering programme. This is
> submitted for your kind comments and fruitful advice and is given as
> Annexure I.
>
> 2. The second proposal (Annexure II) deals with the structure of the
> modules meant for 3D printing skill course for 10 plus 2 level students.
> It
> has in-built structure of core courses which form the core of the
> institute
> and is compulsory for all the disciplines at UG level and below in order
> to
> achieve the mission objective of the institute, that is, *Making a
> Complete
> Man. *
>

>
>
> I shall be honoured, delighted and grateful to have your valuable advice.
>
>
>
> With best regards,
>
> Affectionately yours,
>
> Sant K. Gaur
>
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>
> --
> Dr. Sant K. Gaur
> Professor & Dean,
> Faculty of Engineering
> Dayalbagh Educational Institute
> (Deemed University)
> Dayalbagh, Agra
> (UP) 282005. India
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>
> Annexure I
>

ANNEXURE-I
Proposal for Board of Studies: Department of Electrical Engineering

Proposal 1: Introduction of a new work experience course in fourth semester in addition to existing courses. Syllabus Given below:

Course Number: EEW405,
Course Title: Electronics Project, Microcontrollers and IoT
1. Introduction to Arduino and Shields
2. introduction to ESP8266 and allied boards
3. Discussion about battery solution, battery life estimation
4. Component selection, Board design, BOM, ordering.
5. Assembly & Testing
6. Connection to IoT data logging services.

Proposals 2 to proposals 5 are approved in the BOS meeting of Maths Department.

Proposal 2: Change in the syllabus of Course on Mathematics MAM 181 in the first semester as proposed by Maths Department. Syllabus of existing course and proposed course is given below:

Existing Syllabus with 3 credits:
Course Number: MAM181, Course Title: ENGINEERING MATHEMATICS I
UNIT 1: DIFFERENTIAL CALCULUS
Successive differentiation, Liebnitz theorem, Taylor's and Maclaurin's expansions, Indeterminate forms.
UNIT 2: DIFFERENTIAL CALCULUS
Partial differentiation, Euler's theorem, Change of variables, Jacobian and Maxima and Minima of functions of two or more variables.
UNIT 3: INTEGRAL CALCULUS
Application of Integration to Arc length, Area bounded by Curves, Volumes and Surface area of solids of revolution.
UNIT 4: VECTOR CALCULUS
Differentiation and Integration of vectors, Gradient of Scalar point function, Divergence and curl of a vector point function and their physical meanings. Line, Surface and Volume Integrals, Gauss and Stroke's Theorem (without proof).Simple Applications.
UNIT 5: MATRICES
Linear independence of vectors, Rank of a matrix, Solution of system of Linear simultaneous equations, Characteristics roots and vectors, Cayley-Hamilton theorem.

SUGGESTED READINGS:
Gorakh Prasad: TEXT BOOK OF DIFFERENTIAL CALCULUS
Chadda GC, Dwivedi DS &Tripathi SM: TEXT BOOK OF DIFFERENTIAL CALCULUS
Gorakh Prasad: TEXT BOOK OF INTEGRAL CALCULUS
Chadda GC Goyal JK &Bhargava GP: TEXT BOOK OF INTEGRAL CALCULUS
Chandrika Prasad: MATHEMATICS FOR ENGINEERS

PRPOSED SYLLABUS with 3 credits

MAM 181 Mathematics-I

UNIT 1
Linear independence of vectors, Rank of a matrix, Solution of system of linear simultaneous equations,
Characteristics roots and vectors, Cayley-Hamilton theorem.
UNIT 2
Functions of one variable: $\epsilon - \delta$ definition of limit and its applications, Mean value theorems,
indeterminate forms, successive differentiation, Liebnitz theorem.
UNIT 3

Functions of several variables: Limit of real valued functions of several variables, Partial, directional and total derivative, Euler's theorem, Taylor Series(in one and two variables), Maxima and Minima, Jacobians.
UNIT 4
Limit of vector valued functions of one variable, Differentiation and Integration of vector valued functions, arc length, Double and Triple Integrals and their applications to area and volume.
UNIT 5
Gradient, Divergence and curl.Line and Surface Integrals, Gauss, Green's and Stroke's Theorem (without proof).Simple Applications.

Proposal :3:
Change in the syllabus of Course on Mathematics MAM 281 in the Second semester as proposed by Maths Department. Syllabus of existing course and proposed course is given below:

Existing Syllabus with 3 credits
Course Number: MAM281, Course Title: ENGINEERING MATHEMATICS II
UNIT 1: DIFFERENTIAL EQUATIONS
Equations of first order and first degree, Linear equations with constant coefficients, Equations of first order but not of first degree, Singular solutions, Orthogonal Trajectories.

UNIT 2: PARTIAL DIFFERENTIAL EQUATIONS
Simultaneous and Total Differential equations, Elementary partial differential equations of first order, Homogeneous and non-homogeneous partial differential equations with constant coefficients. Solution for wave, heat conduction and transmission equations.

UNIT 3: DIFFERENTIAL EQUATIONS OF SECOND ORDER
Method of variation of parameters, Ordinary Linear Differential Equations of Second order, Solution of Series, Bessel and Legendre's equations and their recurrence relations.

UNIT 4: STATISTICS
Moments, Moment generating functions, Mathematical Expectation, Binomial, Poisson and Normal distribution, Curve fitting, Correlation and regression.

UNIT 5: FOURIER SERIES
Dirichlet's Conditions, Half range Series, Harmonic Analysis.

SUGGESTED READINGS:
Ray & Sharma: DIFFERENTIAL EQUATION
Gorakh Prasad: TEXT BOOK OF DIFFERENTIAL CALCULUS
Chadda GC, Dwivedi DS &Tripathi SM: TEXT BOOK OF DIFFERENTIAL CALCULUS
Raddick& Miller: ADVANCED MATHEMATICS FOR ENGINEERS

Proposed Syllabus with 3 credits
Course: MAM 281, Title: Engineering Mathematics II
UNIT 1: DIFFERENTIAL EQUATIONS
Equations of first order and first degree, Linear equations with constant coefficients, Equations of first order but not of first degree, Singular solutions, Orthogonal Trajectories.

UNIT 2: TOTAL DIFFERENTIAL EQUATIONS
Simultaneous and Total Differential Equations: Necessary and Sufficient conditions for integrability of the total differential equations, Solution by Inspection, Regarding one variable as constant, Homogeneous Total Differential Equations, Method of Auxiliary Equations.

UNIT 3: DIFFERENTIAL EQUATIONS OF SECOND ORDER
Ordinary Linear Differential Equations of Second Order: When one integral belonging to the C.F. is known, Method of Removal of the first derivative, Transformation of the equations by changing the independent variable, Method of Variation of Parameters.

UNIT 4: PARTIAL DIFFERENTIAL EQUATIONS

Elementary partial differential equations of first order, Homogeneous and non- homogeneous partial differential equations with constant coefficients, Solution for Wave, heat conduction and transmission equations

UNIT 5: FOURIER SERIES
Dirichlet's Conditions, Half range Series, Harmonic Analysis.

SUGGESTED READINGS:
Ray &Sharma: DIFFERENTIAL EQUATION
Gorakh Prasad: TEXT BOOK OF DIFFERENTIAL CALCULUS
Chadda GC, Dwivedi DS &Tripathi SM: TEXT BOOK OF DIFFERENTIAL CALCULUS
Raddick& Miller: ADVANCED MATHEMATICS FOR ENGINEERS

Proposal 4:
Offering Course No.**MAM581 Mathematics-V** in Fourth Semester in place of **MAM 481 -Discrete Mathematics** for all Classes. It is felt that course on Discrete Maths is more useful for students with computer science specialization and in place of this a course on Probability and Statistics will be more useful for other students.

Existing Syllabus:
Course Number: MAM481, Course Title: DISCRETE MATHEMATICS
UNIT 1
Mathematical Logic: Propositions, Connectives, Propositional formulae, Truth Tables, Well formed formulas, Tautologies, Equivalence Formulas; Duality Law: Normal forms: Disjunctive and Conjunctive; Tautological implications: Validity of the arguments, Theory of Inference; Predicate Calculus: Predicates, Variables and Quantifiers, Free and Bounded Variables, Inverse of Discourses.

UNIT 2
Set Theory: Review of basic concepts, Relations, Equivalence relations, Partitions and Equivalence classes, compatibility relations, Partial ordering, Partial Ordering set; Functions: Composition, Inverse, Characteristic functions of a set, Binary and n-ary operations; Natural numbers: Mathematical Induction, Cardinality.

UNIT 3
Groupoid, Monoid, Semigroups, Groups, Subgroups, Normal subgroups, Homomorphism, Cyclic groups, Permutation groups; Lattice: Lattices as posets, some special Lattices, Boolean Algebra; Rings and Fields.

UNIT 4
Combinatorics: Fundamental laws of Counting, Permutations, Combinations, Binomial Theorem, Principle of Exclusion and Inclusion.

UNIT 5
Discrete Numeric Functions, Recurrence relations, Generating functions.

SUGGESTED READINGS:

JP Tremblay, R Manohar: DISCRETE MATHEMATICAL STRUCTURES WITH APPLICATIONS TO COMPUTER SCIENCE, McGraw Hill Publication

CL Lee: DISCRETE MATHEMATICS

Kolman, Busby, Ross: DISCRETE MATHEMATICAL STRUCTURES, Prentice Hall Publication

Proposed Syllabus of MAM481 in fourth semester with 3 credits

Course Number: MAM481, Course Title: ENGINEERING MATHEMATICS IV

(**Originally MAM 581 Engineering Maths-V**)

UNIT 1: ALGEBRAIC AND TRANSIDENTAL EQUATION   [12 pds]
Numerical solution, Method of bisection, Newton-Raphson Iteration, Acceleration of Convergence by Aitken Triangle Square Process.

UNIT 2: LINEAR SIMULTANEOUS ALGEBRAIC EQUATION   [10 pds]
Solution.Cholesky's, Jacobi's and Gauss-Seidal methods.Largest Eigen Value and corresponding Eigen Vector.Relaxation Techniques.
UNIT 3: INTERPOLATION
Difference Table. Forward, Backward, Central and Shift operators. Gregory-Newton, Sterling, Everett's and Bessel's Formulea.Lagrange's formula.Inverse interpolation.
UNIT 4: NUMERICAL DIFFERENTIATION AND INTEGRATION   [10 pds]
Newton-Cotes Formula.Gaussien Quadrature Formula, Extention of trapizoidal and Simpsons rule to multiple integrals.

UNIT 5: ORDINARY DIFFERENTIAL EQUATIONS &PARTIAL DIFFERENTIAL EQUATIONS   [10 pds]
Numerical Solution, Methods of Taylor, Picard, Euler, Range-Kutta, Adams-Bashforth and Milne's method.Simultaneous differential equations.
Numerical Solution. Laplace and one dimensional heat conduction equation.

SUGGESTED READINGS:

SS Sastry: NUMERICAL ANALYSIS
Conte DeBoor: NUMERICAL ANALYSIS
Hildebrand: NUMERICAL ANALYSIS
RG Stantom: NUMERICAL METHODS FOR SCIENTISTS AND ENGINEERS

Proposal 5:

Offering **MAM 481: Discrete Mathematics** as **MAM 581Discrete Mathematics** to students of Fifth Semester with **Computer Science Specialization** retaining the existing syllabus and offering a new course on Mathematics (Probability & Statistics) for students of other streams. The syllabus of proposed course is given below:

MAM 58X: Probability and Statistics
Unit – I
Conditional Probability, Baye's Theorem; Measure of central tendency and dispersion in terms of moments.Mathematical expectstion.
Unit – II
Random Variables: Discrete and continuous, Probability mass/density function, cumulative mass / density function. Binomial, Poisson and Normal distributions and their applications.
Unit – III
Sampling distribution, central limit theorem, Estimation; Point and Internal estimation using z and t distribution.
Unit – IV

Two types of error, Confidence and significance level (small and large samples). Testing of Hypothesis based on means proportions. x^2 – test as the test of independence and goodness of fit. Test based on variance; F-distribution; one way ANOVA.
Unit – V
Curve fitting (Method of least square) correlation analysis. Linear regression analysis.
Reference Books:
1. Walpole, R.E., Myers, R.L., Myers, S.L. and Ye K., 'Probability and Statistics for engineers and scientists', Pearson Education.
2. Johnson, R.A., Probability and Statistics for Engineers, PHI
3. Kapoor and Saxena, Mathematical Statistics, S. Chand

There is no change in other Maths courses. (i.e. MAM 381 and MAM 681)

CourseNumber: MAM381, Course Title: ENGINEERING MATHEMATICS III

UNIT 1: LAPLACE TRANSFORMS
Standard Forms, Shifting and Convolution Theorems, Transforms of derivatives. Inverse Laplace Transforms, Laplace transforms of error function, Heavyside Direct Delta Functions, Applications of Laplace Transforms.
UNIT 2: FOURIER TRANSFORMS
Finite and Infinite Fourier Transforms, Fourier Integral Theorem, Inversion Theorem, Applications of Fourier Transforms.
UNIT 3: COMPLEX ANALYSIS
Analytic Function, Cuachy-Reimann Equation, Conjugate harmonic functions.
UNIT 4: COMPLEX ANALYSIS
Integration, Cauchy's Theorem, Cauchy's Inegral Formulae, Taylor's and Lautent's expansions, Zeros and poles.
UNIT 5: COMPLEX ANALYSIS
Residues, Cauchy Residues Theorem, Simple problems in contour integration.

SUGGESTED READINGS:
MD Raisinghania: INTEGRAL TRANSFORMS
Schaum's Series: LAPLACE TRANSFORM
Schaum's Series: COMPLEX VARIABLES

Course Number: MAM681, Course Title: ADVANCED OPTIMIZATION TECHNIQUES

UNIT 1   [10 pds]
Introduction to general linear programming problems, Geometrical and Algebraic analysis of models/ solutions.Definitions and Theorems, solution of L.p.p.-graphical, simplex, two-phases of simplex, Big-M method.
UNIT 2   [10 pds]
Concept of Duality: Primal/Dual relationship Theorems, Dual-simplex, Post-optimality analysis, Transportation Problems. Assignment Problem and Routeing Problem.
UNIT 3   [10 pds]
Non-linear programming problems: Lagrange's method, Kuhn-Tucker conditions, Graphical Method, Fibonacci and Golden section search, Concept of Quadratic programming, Steepest Descent Method, Conjugate metric method, Frank-Wolfe method.
UNIT 4   [10 pds]
Dynamic Programming: Multistage decision processes, Concept of sub-optimality, Principle of optimality, Calculus method of solution, Tabular method of solution, L.p.p. as a case of Dynamic programming.
UNIT 5: INTEGER PROGRAMMING   [10 pds]
Gomory method for pure and mixed LPP, All pure and mixed integer programming, Algorithm and solution of numerical problems, Branch and bound method.

SUGGESTED READINGS:

G Hadley: LINEAR PROGRAMMING
SI Gass: LINEAR PROGRAMMING
SS Rao: OPTIMIZATION TECHNIQUES
NS Kambo: MATHEMATICAL PROGRAMMING TECHNIQUES
MA Taha: OPERATIONS RESEARCH
KV Mittal:OPTIMIZATION METHODS

Proposal 6:
Exchanging the slot for EEM 704 Computer Technology lab (VII Semester) and EEM 602Microprocessors Lab (VI Semester)

Proposal 7:
Renaming the Computer Technology Lab as Digital Systems Lab with modified syllabus

Justification for Proposal 6:
The Microprocessors Lab course is to augment the practical component of theory course EEM 601 Microprocessors and Microcontrollers. Since the programming part of the theory course starts after about 1 ½ units, the lab experiments could not be started effectively only after about a month.
On the other hand, Computer technology lab, being offered in VII semester deals with digital circuits and design. Since a course on Digital Systems is offered in V semester, its effectiveness will increase if used to support the said theory course.
Further, since the courses are of same credits and LTPS structure, the course numbers may also be exchanged for administrative convenience.

Justification for Proposal 7:
The Computer Technology lab was introduced to provide practical inputs from Digital electronics field and to support a course titled Functional Design of Digital Computer. However, this theory course is now became an elective whereas the lab course is compulsory for all students. To justify the title, at some later stage, computer hardware based experiments were introduced (syllabus enclosed) which are more aligned to a work-experience course. It is worth mentioning here that other than this course, some basic Digital electronics experiments are performed in Basic Electronics Lab that deals with logic gates. Hence, it will be more appropriate if the Computer technology lab course is oriented to deal with Digital Electronics experiments (proposed syllabus enclosed) with a suitable title, Digital Systems Lab, instead of Computer Technology lab.

COURSE TEMPLATE

1	Department/Centre proposing the course	Electrical Engineering
2	Course Title (< 45 characters)	MICROPROCESSORS LABORATORY
3	L-T-P Structure	(L:0+T:0+P:3+S:0)
4	Credits	2
5	Course Number	EEM602
6	Status (category for program)	(Elective/ Core) Core
7	Status vis-à-vis other courses (give course number/title)	
7.1	Overlap with any UG/ PG course of Department/ Centre	No
7.2	Overlap with any UG/ PG course of otherDepartment/ Centre	No
8	Frequency of offering	~~Every semester~~/ Every alternative semester/

		~~Once in four semesters/~~
9	Faculty who will teach the course	Dr. G.S.SaileshBabu/ Prof. D. Bhagwan Das / Sh. D.P. Prasad
10	Will the course require visiting faculty?	No
11	Course objectives (about 50 words) indicating motivation and aims	1. To augment practical part of the theory course EEM 601: Microprocessors and Microcontrollers 2. To enable practical exposure to 8085 programming 3. To enable practical exposure to 8085 kit

Course Number: EEM602, Course Title: MICROPROCESSORS LABORATORY
To be renumbered as EEM704
Class: B.Tech., Status of Course: Major, Approved since session 1996-97
Total Credits: 2, Total pds. (50 mts each)/week: 3 (L:0+T:0+P:3+S:0)Min. pds./sem.: 39

Assembly language program for adding/subtracting/multiplying two numbers.
8085 programs for block move, sorting a block in ascending order/descending order.
8085 assembly language program based on loops.
8085 programs involving PPI 8255 chip
8085 programs involving ADC/DAC chips.

Course Number: EEM601, Course Title: MICROPROCESSORS & MICROCONTROLLERS
Class: B.Tech., Status of Course: Major, Approved since session 2006-07
Total Credits: 3, Total pds. (50 mts each)/week: 5 (L:4+T:1+P:0+S:0)Min. pds./sem.: 65

UNIT 1
Concept of Bus Organised Computers,SAP-1 and Architecture of 8085, Functional Block Diagram, Pin Diagram, Machine Cycles and Timing Diagram Memory interfacing.
UNIT 2
Addressing Modes, Instruction Set, Development of Assembly Language Programs.
UNIT 3
Interrupts in 8085. Types of Interrupts, Interrupt Servicing, Multiple Interrupt Requests and their Handling, Programmable Interrupt Controller 8259A.
I/O Interfacing- Memory Mapped I/O and I/O Mapped I/O. 8255 Programmable Peripheral Interface.
UNIT 4
Direct Memory Access, Need for DMA and 8257 DMA Controller.
Serial Data Transfer, USART8251.
UNIT 5
Architecture of 8051, Memory Organisation, Addressing Modes, Instruction Set, Simple Programs.
8051 Interput Structures, Timer and Serial Functions, Parallel Port Features, Power Control Features.

Suggested Readings:
Gaonkar R.S.: "Microprocessor Architecture Programming and Applications with 8085", 3rd Edition Penram International Publishing House.
Kenneth L. Short: - "Microprocessors and Programmed Logic." second edition, PHI.
KannethJ.Ayala: - "The 8051Microcontroller Architecture, Programming and Applications, "Second Edition, Thomson.
Malvino& Brown: -"Digital Computer Electronics." 3rd Edition, TMH.

COURSE TEMPLATE

1	Department/Centre proposing the course	Electrical Engineering
2	Course Title (< 45 characters)	Computer Technology Lab
3	L-T-P Structure	(L:0+T:0+P:3+S:0)
4	Credits	2
5	Course Number	EEM704
6	Status (category for program)	(~~Elective/~~ Core) Core
7	Status vis-à-vis other courses (give course number/title)	
7.1	Overlap with any UG/ PG course of Department/ Centre	No
7.2	Overlap with any UG/ PG course of otherDepartment/ Centre	No
8	Frequency of offering	~~Every semester~~/ Every alternative semester/ ~~Once in four semesters/~~
9	Faculty who will teach the course	Sh. Amolgupta/ Dr. G.S.SaileshBabu / Sh. D.P. Prasad
10	Will the course require visiting faculty?	No
11	Course objectives (about 50 words) indicating motivation and aims	1. To augment practical part of the theory course EEM 305: Digital Systems 2. To enable sufficient practical exposure to digital systems 3. To give exposure to simulator software for digital systems

Course Number: EEM704, Course Title: COMPUTER TECHNOLOGY LAB.
To be renumbered as EEM 602 and renamed as Digital Systems lab.
Class: B.Tech., Status of Course: Major Course, Approved since session: 2000-01
Total Credits:2, Total pds.(50 mts each)/week: 3(L:0+T:0+P:3+S:0), Min. pds./sem.:39

Existing List of Experiments
1. Familiarization with the parts of a computer.
2. Familiarization and Understanding of PC Processors (Intel, AMD, Cyrix, etc.) and their features.
3. Familiarization with different types of Motherboards, Memories & Storage Devices.
4. Familiarization and Understanding of Scanner, different types of Printers (impact & non-impact printers) and Modems.
5. Assembling a PC.
6. General Maintenance of a PC.
7. Design and implementation of a sequence generator.
8. Design and implementation of an arbitrary sequence detector.
9. Study and use of a 4-bit comparator IC 7485.
10. Implementation of an 8-bit comparator by cascading two 4-bit comparators.
11. Study and implementation of a 4x4 First In First Out (FIFO) buffer.

Proposed Syllabus for Digital Systems Lab
1. Introduction to tool, digital sources, constant, probe signal analyzer
2. Verification of behavior of logic gates
3. Implement full adder
4. Implement 4 bit ripple carry adder
5. Implement 4 bit serial shift register
6. Implement 8 bit barrel shifter
7. Study and use of a 4-bit comparator IC 7485 and implementation of an 8bit comparator by cascading two 4-bit comparators.
8. Implement logic function using mux, decoder & AND gate
9. Design a counter mod 8
10. Design counter counting from 0 to 9
11. Design a counter counting from 5 to 9

12. Arbitrary sequence generator
13. Sequence detector
14. Study and implementation of a 4x4 First In First Out (FIFO) buffer.

Proposal 8:
Offering ENH 181 to B. Tech (Part Time) First Semester as first course on English in place of ENH 381 which is presently being offered as per the feedback of English department.

Proposed:
Course Number: ENH181, Course Title: ENGLISH I Credits 3

UNIT 1
(a) Phrase, Clause, Sentence- kinds, concepts and uses (b) Reported speech (c) Active and Passive voice.
UNIT 2
(a) Articles (b) Concord.
UNIT 3
(a) Verbs and properties of Verbs (b) Punctuation Marks (c) Anomalous Finites.
UNIT 4
(a) Time Tense and Tense Sequence (b) Conditional (c) Question Tags.
UNIT 5
Word Formation and Word Power.

SUGGESTED READINGS:
Wood FT: A REMEDIAL ENGLISH GRAMMAR FOR FOREIGN STUDENTS
Allen WS: LIVING ENGLISH STRUCTURE: A PRACTICE BOOK FOR FOREIGN STUDENTS

Existing:
Course Number: ENH381, Course Title: ENGLISH III Credits 3

UNIT 1: Reading and Listening Comprehension
UNIT 2: Basics and Forms of Technical and Business Communication.
UNIT 3: Precis and Paragraph writing
UNIT 4: Writing of Scientific and Technical Texts
UNIT 5: Essay writing and Expansion