NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA
SURATHKAL

MINUTES

OF

TWENTY THIRD MEETING OF
BOARD OF STUDIES

Date	:	**05.04.2013(Friday)**
Time	:	**02.00 PM**
Venue	:	**Board Room,**
		N.I.T.K., Surathkal,
		Post Srinivasnagar,
		PIN - 575 025.

Minutes of the Twenty Third combined Board of Studies (UG, PG, Research) Meeting held on 05th April, 2013 at 02.00 p.m. in the Board Room, NITK, Surathkal.

Members Present:

1. Dr. Sumam David	…	Chairman
2. Dr. A. Kandasamy	…	Member
3. Dr. Lakshman N	…	Member
4. Dr. DVR Murthy	…	Chairperson, M&CS Division
5. Dr. Subba Rao	…	Member
6. Dr. G. S. Dwarakish	…	Member
7. Dr. Katta Venkataramana	…	Member
8. Dr. Aruna M	…	Member
9. Dr. K. C. Shet	…	Representing the Dept. of CSE
10. Dr. M. S. Bhat	…	Representing the Dept. of EC
11. Dr. Ananthanarayana V S	…	Member
12. Dr. Vidya Shetty	…	Member
13. Dr. K. V. Gangadharan	…	Member
14. Dr. K. N. Prabhu	…	Member
15. Dr. Ramachandra Bhat	…	Representing the Dept. of CHY
16. Dr. Murulidhar N N	…	Member
17. Dr. Shashikantha K	…	Member
18. Dr. Narendanath	…	Member
19. Mr. Manjunath Sharma	…	Representing the Dept. of EE
20. Dr. Udaya Shankar N K	…	Member
21. Dr. Suresh Kumar Y	…	Member
22. Dr. Jagannath Nayak	…	Member
23. Dr. Subhash C. Yaragal	…	Member
24. Dr. Lillykutty Jacob	…	External Member
25. Dr. V. Ramachandra	…	External member
26. Prof. N. B. Ballal	…	External member
27. Prof. K. B. R. Varma	…	External member
28. Mr. K. Ravindranath	…	Secretary/Dy. Registrar (Acad)

CONTENTS

Minutes of Twenty Third BOS meeting held on 05.04.2013

The Chairman (BOS) and Dean (Academic) chaired the meeting and welcomed all the members to the **Twenty Third BOS meeting** and thanked the outgoing members and introduced new BOS members.

The minutes of **Twenty Second BOS** meeting was reviewed and approved as there were no comments received from the members.

ITEM No: 23-BOS - 1:
 	
Modification for the existing course in the B.Tech 2012 curriculum –
 	
a) The Department of Computer Science and Engineering:
The BOS resolved to approve the modification in the course contents for the existing course CO414 – Digital Image Processing in the 2012 B.Tech curriculum. The details are attached as an **ANNEXURE- I, Page No.14.**
 	
b) The Department of Mechanical Engineering:
   i. It was resolved to approve ME328 Basics of Computational Fluid Dynamics as a new open elective for UG Programs.
 	
   ii. It was resolved that there was no need to include the proposed addendum "Core and electives courses offered at PG level by Mechanical department could be opted by students of 5th, 6th, 7th and 8th semester UG, as elective courses with recommendation of faculty advisor and consent of course instructor" in the UG curriculum book as NITK B.Tech Regulations 2012 (3.10) permits B.Tech students to credit PG courses as electives with approval of DUGC.
The details are attached as an **ANNEXURE- II, Page No.15.**
	For Senate Approval

ITEM No: 23-BOS - 2: **Inclusion of courses as Electives for B.Tech –** a) The Department of Computer Science and Engineering: The DUGC was requested to give detailed syllabus of CO422 combinational Optimization as suggested by the BOS. The Chairman, BOS was authorized to approve the same and place it before the Senate. The details are attached as **ANNEXURE -III, Page No. 16.** b) The Department of Civil Engineering: The BOS resolved to approve the inclusion of the following course for the B.Tech Civil Engineering Programme as elective in program Minor and Major Project category: 1: CV380-Mini Project – 1(0-0-3)2. The details are attached as an **ANNEXURE-IV, Page No. 17.**	**For Senate Approval**

ITEM No: 23-BOS - 3:
 	
Modification for the existing course in the M.Tech 2012 curriculum –
 	
(a) The Department of Mechanical Engineering:
   i) To follow a uniform coding scheme for all the core and elective courses of the four M.Tech programs offered by the Department
 	
The BOS resolved to defer the above item.
 	
   ii) To include 11 new elective courses for PG Programs:
      i.   ME 720 Finite volume method for computational Fluid Dynamics (3-0-0) 3
      ii.   ME 731 Nanofluids (3-0-0) 3
      iii. ME 732 Wind Energy (3-0-0) 3
      iv.   ME 733 Turbulent Flow (2-1-0) 3
      v.   ME 734 Micro scale fluid flow and Heat transfer (3-0-0) 3
      vi.   ME 751 Surface Treating and Finishing (3-0-0) 3
      vii. ME 752 Modal Analysis (3-0-0) 3
      viii. ME 785 Vehicle Dynamics (3-0-0) 3
      ix.   ME 786 Theory of Plates and Shells (3-0-0) 3
      x.   ME 787 Gas Turbines and Jet Propulsion (3-0-0) 3
 	
        The BOS resolved to approve the above elective courses for PG Programs.
 	
      xi.   ME 788 Technology of Engineering Materials (3-0-0) 3
        The DPGC was requested to make corrections suggested by BOS. The Chairman BOS was authorized to approve the same and place it before the Senate.
        The details are attached as an **ANNEXURE- V, Page No.18-20.**
 	
(b) The Department of Mathematical and Computational Sciences:
The BOS resolved to approve the equivalent courses in 2012 M.Tech (SACA) curriculum for two courses of M.Tech(SACA) Curriculum prior to 2012. The details are attached as an **ANNEXURE- VI, Page No. 21.**
To be effective from even semester 2012-13.
	Reporting to Senate
	
	For Senate approval

ITEM No: 23-BOS - 4: **Inclusion of the courses as Electives for M.Tech –** a) Transportation Systems Engineering: The BOS resolved to approve the inclusion of following courses for the M.Tech Transportation Systems Engineering Programme as Electives: 1: GT700 - Basic Geomechanics (3-1-0) 4 2: GT703 - Earth & Earth Retaining Structures (3-0-0) 3 3: GT705 - Ground Improvement Techniques (3-0-0) 3 4: ST809 – Advanced Bridge Engineering (3-0-0) 3 The details are attached as an **ANNEXURE-IV, Page No.17.**	**For Senate Approval**

b) Environmental Engineering: The BOS resolved to approve the inclusion of following course for the M.Tech Environmental Engineering Programme as Elective: 1: EN818 – Environmental Toxicology (3-0-0) 3 The details are attached as an **ANNEXURE-IV, Page No.17.** c) Computer Science and Engineering: The BOS resolved to approve the inclusion of the following new electives: 1: CS834 - Network Optimization, (3-0-0)3 2: CS864 - Advanced Image Processing (3-0-0)3 3: CS865 - Topics in Speech Processing (3-0-0)3 in the 2012 M.Tech (CSE) Curriculum. The details are attached as an **ANNEXURE -VII, Page No. 22-23.**	

ITEM No: 23-BOS - 5: **Introduction of new courses for Ph.D –** The Department of Mechanical Engineering: The BOS resolved to approve the proposed additional courses for Ph.D. 1: ME 907 Selected topics in Advanced welding processes – 3 credit 2: ME 908 Selected topics in Advanced Metal Casting Process – 3 credit 3: ME 909 Selected topics in Composite materials – 3 credit The DRPC was requested to add references for all the courses. The Chairman BOS was authorized to approve it and place it before the Senate. The details are attached as an **ANNEXURE-VIII, Page No.24.**	**For Senate Approval**

ITEM No: 23-BOS - 6: **Considering the Additional guide to Ph. D. Scholar–** The Department of Physics: The BOS resolved to approve Dr. Prasanta Chowdhury, Scientist at National Aerospace Laboratories, Bangalore be considered for inclusion as Additional Research Guide for Mr. Boominatha Sellarajan (Reg. No. PH12P01) in the Department of Physics.	*Reporting to Senate*

ITEM No: 23-BOS - 7: **Honorarium for M. Tech (Research) Thesis evaluation –** The BOS resolved to recommend to increase the honorarium for M. Tech (Research) Thesis evaluation to Rs. 2500.	**For Senate approval**

ITEM No: 23-BOS - 8: **Inclusion of Additional guide for Full-time Research Scholars –** The BOS sub-committee report was discussed and it was resolved that in case of fulltime Research scholars permission may be granted for the inclusion of Additional Guide from Institutes having MoU with NITK, depending on the extent of expertise to be utilized, on case to case basis, with the approval of the BOS.	**For Senate approval**

ITEM No: 23-BOS - 9: **Scholarship rules for PG and Research Students –** The Senate subcommittee report was discussed and it was resolved to recommend the following Scholarship rules for PG and Research students 1. The undertaking which is being taken from the students should be continued in the same format. However, any modifications from MHRD need to be incorporated as and when it is available. 2. For Ph.D. students, the duration of Scholarship is up to submission of the thesis or up to a maximum of 4 years whichever is earlier. Beyond 4 years, a token amount of Rs 5000/- per month may be awarded for 1 year or until the submission of the thesis whichever is earlier based on the recommendation of RPAC and DRPC. 3. For Ph.D. Scholars converting the status from Full-time to Part-time, a conversion fee of 25% of the total scholarship disbursed to the scholar may be collected instead of collecting the entire scholarship amount as is being practiced at present. 5. For Students who are leaving the course in between (i.e. before submitting the thesis), the entire scholarship drawn by them need to be collected back. 6. PhD, M.Tech (Research) and M.Tech students need not pay Institute Fees after submission of thesis. The details are attached as **ANNEXURE – IX, Page No.25.**	**For Senate Approval**

ITEM No: 23-BOS - 10:
 	
Effective management of PG projects –
 	
The BOS subcommittee report was discussed and it was resolved to recommend the following guidelines for effective management of PG projects
1. Adopt common guidelines for all M. Tech programs. Other P. G. Courses like MCA, MBA and M. Sc. can have guidelines as suggested by the pertinent DPGCs.
2. Guidelines for the M. Tech projects carried out outside the Institute
    (i) Students may be permitted to carry out the project work for a maximum period of one year in an external organisation.
    (ii) A copy of the final list of selection, indicating the name of the student, name of the industry guide, area/title of work, duration and financial
	For Senate Approval

assistance (if any) provided to the student, is to be sent by the external organization to the HOD / M Tech Project Coordinator. Once a student is selected for internship / project work in an organization, he/she will not be eligible to apply for other external internship opportunities.

(iii) DPGC has to recommend and approve the project work. At least one faculty member from NITK should be identified as internal guide for every student. An initial estimate of M.Tech project duration at external agency must be evaluated by DPGC and accordingly sanctioned. A deviation of 10 % time can be sanctioned at the end if sufficient reason is given by the student with documentary evidence supported by external agency.

(iv) Student should obtain prior permission from the Institute for carrying out external project. A format for the application including details like the Title of the project, Name of the external guide, any financial assistance provided by the external organization, project period etc may be prepared and be added to the regulations along with other forms. The student should submit the application in this prescribed format along with the letter from the external organization.

(v) A monthly attendance report of the student duly signed by the external guide with the seal of the organization submitted to the Academic Office approved by the Internal guide and HOD.

(vi) For proper monitoring of the M. Tech projects, the student should send periodic reports on the progress of the work to the internal guide. The student must participate in all the intermediate evaluations scheduled by the Project Coordinator/DPGC at the Institute. The internal guide reviews the work periodically and there shall be at least one visit by the internal supervisor to the organization at which the project is being carried out and possibly one visit by the external supervisor to NITK.

(vii) The student cannot join for any position (contract/temporary/permanent) in the organization till he completes the M Tech program. However, the student can join as JRF in a joint Research project if the internal guide is a co-investigator.

(viii) Any student receiving any form of financial assistance from the external organisation will cease to receive MTech scholarship from Institute during that period.

(ix) All work carried out in the external organization must be part of the M Tech thesis and intermediate reports submitted and must be presented in each evaluation to the Project work evaluation committee. Demo of work done shall also be shown to the examiners. An undertaking in this regard needs to be obtained from the external organization.

(x) NITK's IPR policy is to be followed for any IP generated as an outcome of the work.

(xi) The right to call back the student to work at NITK at any time during the project work rests with NITK with proper justification and communication to external agency.

3. The PWEC chairman (A faculty from the Programme in the Department, nominated by the Chairman DPGC) should be identified in the third semester itself and the committee consisting of PWEC chairman and guide (s) shall evaluate the project in the Phase-I (third semester). Same chairman will continue for the Phase-II of the project.

4. The PWEC for the evaluation of the project in Phase II (end of fourth semester)shall consist of

(i) PWEC Chairman

(ii) Guide (s)

(iii) External examiner (other than the External guide)/ Internal examiner (from NITK itself, but from outside the department). External examiner would be desirable.

5(a) BEFORE THE VIVA-VOCE EXAM: The student shall submit a copy of his/her thesis well in time (at least two weeks before the viva voce exam) to all PWEC members. For the effective assessment of the projects, all the M. Tech Project Theses of the Department shall be assessed (for attributes listed in table below) and approved by the concerned PWEC before the Viva-voce examination. The committee shall assess the Theses based on the Criteria listed in table below and judge the thesis as Sufficient/Satisfactory/Good/Very good/Excellent under each category. The weightage for each of the items may be decided by the respective DPGCs.

5(b). DURING THE VIVA VOCE EXAMINATION: Appropriate weightage shall also be decided by DPGC for oral presentation (preparation of slides) and for question and answers.

Assessment Criteria	Assessment
1. Purpose, planning and problems of the thesis: - Choice, specification and justification of the topic -Presentation of the problems and hypothesis - Scientific significance and contribution of the thesis	Sufficient/Satisfactory/Good/Very good/Excellent
2. Familiarization with literature - Knowledge of subject area and critical use of sources -Definition od use of concepts	Sufficient/Satisfactory/Good/Very good/Excellent
3. Choice of Research approach, methods and research frame - data collection -Suitability and use of methods - Research ethics	Sufficient/Satisfactory/Good/Very good/Excellent
4. Research Results - Presentation -Use of tables and Figures	Sufficient/Satisfactory/Good/Very good/Excellent
5. Discussion and Conclusions - Evaluation of the strength and weakness of the research	Sufficient/Satisfactory/Good/Very good/Excellent
6. Structure and Coherence of the thesis, Linguistic form and final polishing of the text, Student's learning process, working skills, self direction	Sufficient/Satisfactory/Good/Very good/Excellent

6. To have uniformity in the M. Tech Theses, the Theses may be prepared preferably using LaTeX. A Template in this regard may be made available.

ITEM No: 23-BOS - 11: **Modifications in PhD Regulations –** The BOS resolved to defer the above item and suggested to implement provisions in present Ph.D regulations for non compliance strictly.	*Reporting to Senate*

ITEM No: 23-BOS - 12:

Seat Matrix for M.Tech (Research) –
The BOS resolved to approve the following seat matrix for M.Tech (Research):

OC	OC-PH	OBC	OB-PH	SC	SC-PH	ST	ST PH	Total
24	1	13	1	7	1	3	0	50

Scholarship will be paid to GATE qualified students for an initial period of 2 years which may be extended by one more semester based on the recommendation of RPAC.

For Senate Approval

ITEM No: 23-BOS - 13:

Modifications in the M.Tech (Research) Regulations –

The BOS resolved to recommend the following modifications in MTech (Research) program

Existing	*Proposed additions*
Student Status: There are four types of student status in the M.Tech.(Research) degree Programme: (a) Full-time/External Registrants - sponsored student from Industry or other Organizations including Educational Institutions. (b) Full-time/External Registrants - non-sponsored, non-scholarship student (c) Internal Registrants - Sponsored Institute Staff or Project Staff of NITK. (d) Internal Registrants- selected as Teaching Assistant of NITK.	**Student status:** There are six types of student status in the M.Tech.(Research) degree Programme: (a) Full-time student with scholarship (b) Full-time - non-sponsored, non-scholarship student (c) Full-time student sponsored from Industry/Educational Institutions/other organizations (d) External registrant sponsored from Industry/Educational Institutions/other organizations (e) Internal Registrants - Sponsored Institute Staff or Project Staff of NITK. (f) Internal Registrants- selected as

For Senate Approval

	Teaching Assistant of NITK. Note: Students of sponsored category (c &d) should produce a sponsorship-cum-clearance certificate from the sponsoring organization. The candidate must have minimum of two year of full-time work experience in the sponsoring organization and should remain with the sponsoring organization till the completion of M.Tech (Research) programme.

3.1 The M. Tech. (Research) Degree programme will typically consists of following components
a) Course work $\geq$ 12 credits
b) Research Thesis
3.2 The course work must be completed within the first THREE semesters in case of Full-time students and within the first SIX semesters in case of internal/external registrants, securing a CGPA of at least 5.50.
	3.1 The M. Tech. (Research) Degree programme will typically consists of following components;
	   a) Course work $\geq$ 12 credits (Courses carrying 'S'/'N' grades shall not be counted)
	   b) MLC course, Research Methodology
	   c) Research Thesis
	3.2 The courses must be selected from list of courses of the respective M. Tech discipline and must be completed within the first THREE semesters in case of Full-time students and within the first SIX semesters in case of internal/external registrants, securing a CGPA of at least 5.50.
	3.3 In case of external registrants, A minimum of one semester (preferably first semester) residential requirement to be completed during the completion of credit requirements. However, the duration and number of visits to the Institute after the course completion shall be decided by the Research guide.
	3.4 Students are required to undergo registration at the commencement of each semester on the days fixed for such registration and notified in the academic Calendar.

4. Research Guide 4.4 Depending on the research requirements, additional Research Guides, including experts from outside the Department/Institute, may be considered as co-Guides, with the recommendation of the DPGC.	4. Research Guide 4.4 Depending on the research requirements, an additional faculty member of the Institute may be included as an Additional-Guide. However, the *main* Research Guide shall be from within the *parent department*. The inclusion of

The bio-data of intending co-Guides from outside the Institute shall be scrutinized and approved by the BOS.	additional guide is allowed till the submission of the research proposal seminar. 4.5 External Registrants need to have an additional Research Guide from the organisation from which he is sponsored. The bio-data of intending Additional Guides from outside the Institute shall be scrutinized and recommended by the DPGC and approved by Dean (Academic).	
5.5 Thesis Submission and Assessment:	**5.5 Thesis Submission and Assessment** 5.5.1 Prior to submission of thesis, the scholar should have at least one paper published preferably in refereed journal or in refereed conference proceedings.	

ITEM No: 23-BOS - 14: **Admission of International students to Postgraduate courses under ICCR Scheme –** The Indian Council for Cultural Relations, Ministry of External Affairs, Govt. of India, desires to admit International candidates for Postgraduate programmes. The BOS resolved to recommend maximum of 1 seat for each PG program under ICCR Scheme. The details are attached as **Annexure-X, Page No.26.**	**For Senate Approval**
ITEM No: 23-BOS - 15: **REPORTING/RATIFICATION ITEMS:** **Modified Seat matrix for DASA-2013 UG admissions –** As per the MHRD order, No. F-35-3/2011-TS.III (Pt.) dated 25-02-2013, the intake of student under DASA scheme in each B.Tech branch can be from 5% to 25% of the total intake for the respective branch, keeping the DASA scheme supernumerary total seats for B.Tech programme to be less than 15% at Institute level. In the light of above, DASA admissions seat matrix for B.Tech programs of NITK Surathkal has been modified. The details are attached as **Annexure-XI, Page No.27.** The BOS resolved to ratify the modifications in seat matrix for DASA-2013 UG admissions.	**For ratification by Senate**

ITEM No: 23-BOS - 16: **Modifications in Eligibility Criteria for MBA admissions –** In order to have a uniform eligibility criteria for all the PG programmes, offered in the Institute, the eligibility criteria for MBA admissions has been modified as follows; | *Existing Eligibility Criteria for admission*	*Proposed Eligibility Criteria for admission*
Admission to MBA program shall be open to candidates who have passed the prescribed qualifying examination with a Cumulative Grade Point Average (CGPA) of at least **5.5** in 0-10 scale grading system, OR not less than **55%** marks in aggregate (taking into account the marks scored in all the subjects of all public/ university examinations conducted during the entire prescribed period of the degree programme). However, this prescribed minimum shall be a CGPA of **5.0** OR **50%** marks in the aggregate for SC/ST candidates.	Admission to MBA program shall be open to candidates who have passed the prescribed qualifying examination with a Cumulative Grade Point Average (CGPA) of at least **6.5** in 0-10 scale grading system, OR not less than **60%** marks in aggregate (taking into account the marks scored in all the subjects of all public/ university examinations conducted during the entire prescribed period of the degree programme). However, this prescribed minimum shall be a CGPA of **6.0** OR **55%** marks in the aggregate for SC/ST candidates. | The BOS resolved to ratify the modifications in eligibility criteria for MBA admissions.	**For ratification by Senate**
ITEM No: 23-BOS - 17: **Modifications in Eligibility Criteria for MCA admissions –** The eligibility criteria for MCA admissions has been modified as follows by NIMCET 2013-14 Core Committee for MCA admissions to all NITs. Indian Nationals securing at least 60% marks in aggregate or 6.5 CGPA on a 10 point scale (55% marks in aggregate or 6.0 CGPA on a 10 point scale in case of SC/ST) in i) B. Sc. /B. Sc. (Hons) / BCA/ BIT of minimum three years full time; OR ii) B.E./B.Tech or equivalent from a recognized University. The percentages of marks in qualifying degree are to be calculated on the basis of marks obtained in all the subjects studied in all the three years including languages, optional and additional subjects studied, if any. The details are attached as **Annexure-XII, Page No.28.** The BOS resolved to ratify the modifications in eligibility criteria for MCA admissions.	**For ratification by Senate**

ITEM No: 23-BOS - 18: **Modifications in Eligibility Criteria for M. Tech. admissions –** It was decided in the Deans & HODs meeting held on February 01st, 2013, to include special condition of eligibility for M.Tech. admissions as follows: At least 60% marks (or 6.5 CGPA) in 10 (Class X) and 10+2 (Class XII) level or equivalent examination for OC/OB candidates and at least 55% marks (or 6.0 CGPA) in 10 (Class X) and 10+2 (Class XII) level or equivalent examination for SC/ST candidates. The BOS resolved to ratify the modifications in eligibility criteria for M.Tech admissions.	**For ratification by Senate**

ITEM No: 23-BOS - 20: **Considering the Additional guide to Ph. D. Scholar –** The BOS resolved to approve Dr. Jaya Kumar Seelam, Principal Scientist, CSIR-National Institute of Oceanography, Goa be considered for inclusion as Additional Research Guide for Mr. N. Amaranatha Reddy (Reg. No. AM12P04) in the department of Applied Mechanics and Hydraulics.

The Secretary (BOS) proposed the vote of thanks to the chair and to the members.

(K. Ravindranath)
Secretary –BOS, NITK

(Dr. Sumam David S)
Chairman-BOS, NITK

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING, NITK – SURATHKAL

Proceedings of the DUGC Meeting held on 25th March 2013 at 03:30PM
in the Department Meeting room

1. Mrs. Saumya Hegde gave the proposal to include new elective CO422- Combinatorial Optimization in the 2012 B.Tech. curriculum. It has been discussed in DUGC and resolved to recommend the inclusion of CO422- Combinatorial Optimization as elective.

CO422   **COMBINATORIAL OPTIMIZATION**   (3-0-0)3

Introduction, mathematical preliminaries, shortest paths variants, network flows – maximum flows and minimum cost flows, bipartite matching, non bipartite matching, matroids and greedy algorithms.

Eugene Lawler, Combinatorial Optimization – Networks and Matroids, Dover Publication 200.
William J. Cook, William H. Cunningham, William R. Pulleyblank, Alexander Schrijver, Combinatorial Optimization, Wiley 1997.

2. Dr. Jeny Rajan suggested the following changes in the course contents for the existing course CO414- Digital Image Processing in the 2012 B.Tech. curriculum. It was discussed in the DUGC and suggested changes are approved.

(Existing syllabus)
CO414   **DIGITAL IMAGE PROCESSING**   (3-0-0) 3

Digital data sources-satellite and Aerial photographs, Sources of error, Image rectification and restoration, Image enhancement, multi image manipulation, Principal component analysis, Image classification, supervised, unsupervised, and other advanced classification techniques. Accuracy assessment, Analysis of hyperspectral data.

Jensen, J.R. Introductory Digital Image Processing: A remote sensing Perspective, Prentice Hall
Lillesand, Thomas & Kiefer, Remote sensing and Image Interpretation, 6th edition John Wiley & Sons
Rafael C Gonzalez, Richard E Woods 2nd Edition, Digital Image Processing - Pearson Education 2003.

(Proposed new syllabus)
CO414   **DIGITAL IMAGE PROCESSING**   (3-0-0) 3

Introduction and Fundamentals, Image sensing and acquisition, Image sampling and quantization, Image enhancement in the spatial domain, Image enhancement in the frequency domain, Image restoration, Color image processing, Morphological image processing, Image segmentation.

Rafael C. González, Richard E. Woods, "Digital Image Processing", 3rd Ed., PHI, 2007.
Anil K. Jain, "Fundamentals of Digital image Processing", Prentice Hall, US Ed., 1989.
Rafael C. González, Richard Richard Eugene Woods, Steven L. Eddins, "Digital Image Processing using MATLAB", Pearson Education India, 2004.

The following members were present:

1. Dr. K.C Shet
2. Mr. K. Vinay Kumar
3. Dr. P. Santhi Thilagam
4. Dr. Annappa
5. Mrs. Saumya Hegde
6. Mr. Mahendra Pratap Singh
7. Dr. Shashidhar G. Koolagudi
8. Dr. Jeny Rajan

New open elective course offered by the department

ME328   Basic *of* Computational Fluid Dynamics   (3-0-0) 3

Introduction to Computational Fluid Dynamics: historical review, applications. Derivation of the fluid flow and heat transfer governing equations based on various fluid flow models. Mathematical aspects of the fluid dynamic equations, classification methods. Implementation of the finite difference method for fundamental advection, diffusion, advection - diffusion partial differential equations. Stability, consistency and convergence issues. Numerical schemes for two dimensional Navier-Stokes equations like Lax-Wendroff method, MacCormacks method, SIMPLE .

Jiyuan Tu, Guan Heng Yeoh and Chaoqun Liu. Computational fluid dynamics A practical approach. Butterworth Heinemann An Imprint of Elsevier, 2008.

John D.Anderson Jr. Computational Fluid Dynamics The Basics with Applications. McGraw-Hill International Edition, 1995. Chung Patankar S V. Numerical Heat Transfer and Fluid Flow. Hemisphere Publishing Corporation, Taylor and Francis Group New York. 1980.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
NITK-Surathkal

CO422   **COMBINATORIAL OPTIMIZATION**   **(3-0-0)3**

Introduction; mathematical preliminaries; shortest paths variants: Label setting and label correcting methods, Yen's improvement, linear programming interpretation and relaxation procedures, M shortest paths; network flows: maximal flows , max-flow min-cut, minimum cost flows, the out-of-kilter method and improvements, project scheduling and transportation problems, multi-terminal and multi-commodity flows; bipartite matching: cardinality matching algorithms, max-min matching, Gilmore-Gomory matching; Non bipartite matching: weighted matching algorithm, Chinese postman's problem; matroids and greedy algorithms: matching, traversal and partition matroids, matroidaxiomatics, Prims spanning tree algorithm, the Steiner problem.

Eugene Lawler, Combinatorial Optimization – Networks and Matroids, Dover Publication 2002.
William J. Cook, William H. Cunningham, William R. Pulleyblank, Alexander Schrijver, Combinatorial Optimization, Wiley 1997.

10/4/13

Dr. Annappa
Head of the Department
Dept. of Computer Science and Engineering
National Institute of Technology Karnataka
Surathkal, Post Srinivasnagar
MANGALORE - 575 025, INDIA

GT700   **Basic Geomechanics**   (3-1-0) 4

Concepts of failure and yield in soil, Failure theories, Effective stresses in soils, Microstructural considerations, Stress-path concepts and their applications, Shear Strength of soils and rocks, Mohr-Coulomb strength theory, Shear strength tests, Stress-deformation characteristics, Critical state concepts and their application, constitutive relationships, Deformation analysis, components of settlement, permissible settlements, consolidation settlements . Flow through soils.
Mitchell, J.K. Principles of Soil Behavior, John Wiley
Lambe, T.W. and Whitman, R.V. Soil Mechanics, Wiley Eastern.

GT703   **Earth & Earth Retaining Structures**   (3-0-0) 3

Introduction, Rankine and Coulomb theories, Graphical method, Passive earth pressure by curved rupture surface, Stability analysis of gravity type, Cantilever type, Counterfort type and Soil reinforced retaining walls, Braced excavations, Analysis and design of sheet piles, Stability of slopes, Finite and infinite slopes, Swedish circle method, Taylor's modified Swedish circle method and Bishop's method of analysis.
Terzaghi K, and Peck,R.B., Soil Mechanics in engineering practice, McGraw Hill. Bowles, J.E., Foundation analysis and design, McGraw Hill.

GT705   **Ground Improvement Techniques**   (3-0-0) 3

Introduction to engineering ground modification, need and objectives, Soil stabilization techniques; Mechanical modifications (shallow and deep compaction methods); Hydraulic modification, Dewatering systems, use of Geosynthetics and Prefabricated vertical drains, Preloading and Vertical drains; Chemical Modifications, Modification by admixtures, grouting, deep jet mixing methods, stabilization using industrial wastes; Modification by inclusion and Confinement.
Hausmann, M.R.,Engineering Principles of Ground Modification, McGraw-Hill.
Purushotham Raj, Ground Improvement Techniques, Laxmi Publications, New Delhi.

ST809   **Advanced Bridge Engineering**   (3-0-0) 3

Review of IRC and IRS loadings, Effect of concentrated loads on deck slabs, load distribution methods for concrete bridges. Analysis and Design of superstructures -T beam and slab, bridge, Box girder bridge, Prestressed bridge, Balanced cantilever bridge, rigid frame, arch, bow, string girder. Steel plate girder and trussed bridges, Composite bridges, Cable-stayed bridges, Dynamics response of bridge decks. *D.J. Victor, Essentials of Bridge Engg., Oxford & IBH N. Krishna Raju, Design of Bridges, Oxford & IBH M.S. Troitsky, Cable Stayed Bridges, VNR.*

EN818   **Environmental Toxicology**   (3-0-0) 3

Definition, branches in toxicology, role of a toxicologist, causes of toxicity, types of toxicity, occurrence of toxicants, damage process and action of toxicants, factors affecting xenobiotic action, defense responses to toxicants, aquatic and environmental toxicity, aquatic toxicology tests & their types, environmental impact interpretation, some important terminologies in toxicology, recent advances in toxicity analysis.
W. G. Landis, M.-H. Yu, "Introduction to Environmental Toxicology" CRC press (Taylor & Francis) (3rd ed.). (ISBN 1-56670-660-2.)

CV380   **Mini Project**   (0-0-3) 2

Experimental work either in the field or in the laboratory or design task of relatively smaller magnitude=de compared to Major Project work and in line with the guidelines formulated by the DUGC (CV).

Professor and Head
Department of Civil Engineering
National Institute of Technology Karnataka, Surathkal
Mangalore 575 025, Karnataka INDIA

Annexure - II

New elective courses for M. Tech PG Programms

ME801 Finite volume method for computational Fluid Dynamics (3-0-0)3

Introduction, Conservation laws of fluid motion and boundary conditions. Turbulence and its modeling. Finite volume method for diffusion problem. Finite volume method for convection diffusion problem. Solution algorithm for pressure –velocity coupling in steady flows. Solution of the discretised equations. Finite volume method for unsteady flows.

Versteeg H K and Malalasekera W. An Introduction to computational fluid dynamics The finite volume method. Pearson Prentice Hall, 1995.
Date Anil W. Introduction to Computational Fluid Dynamics. Cambridge University Press. 2005
Patnakar Suhavs V. Numerical Heat transfer and Fluid Flow. Hemisphere Publishing corporation, Taylor and Francis Group, New York. 1980.

ME802 Nanofluids (3-0-0) 3

Introduction to microfluids and nanofluids, Synthesis of Nanofluids, Properties of nanofluids, Thermal fluid flow transport phenomena using nanofluids, Heat Transfer in Nanofluids: conduction, convection (natural & forced), Boiling of nanofluids, Advanced cooling device development using nanofluids. Applications and Future Directions.

Sarit K. Das, Stephen U. S. Choi, Wenhua Yu, T. Pradeep, Nanofluids, John Wiley and Sons Inc.
Roy Strandberg, Debendra K. Das, Heat Transfer Performance of Nanofluids, LAP Lambert Academic Publishing

ME803 Wind Energy (3-0-0)3

Introduction; Wind resource assessment; Aerodynamic aspects of rotor; Classification and components of wind turbines; Siting and wind farm design; Wind turbine design; Wind energy economics; Electrical and control systems; Environmental impact.

Siraj Ahmed, "Wind Energy – Theory and Practice", PHI Learning Private Limited, Eastern Economy Edition, New Delhi, 2010.
Freris, L.L., "Wind Energy Conversion Systems", Prentice Hall.1990
Spera, D.A., "Wind Turbine Technology: Fundamental Concepts of Wind Turbine Engineering", ASME Press. 1994
Spera, D.A., "Wind Turbine Technology: Fundamental Concepts of Wind Turbine Engineering", ASME Press. 1994
J.F. Manwell, J.G. McGowan, and A.L. Rogers Wind Energy Explained, Second Edition John Wiley & Sons Inc. 2010

ME804 Turbulent Flow (2-1-0)3

Introduction to stability of laminar flows. Linearized stability analysis using Orr-Sommerfeld equations. Transition to turbulence. General properties of turbulence. Introduction to mathematical analysis of turbulent flows. RANS equations. Turbulence modeling. Eddy viscosity/mixing-length models, application to free shear flows and wall-bounded flows. Two-equation models of turbulence: standard k-e and k-w model. Turbulent free shear flows. Turbulent wall bounded flows, Law of the wall, velocity defect law, law of the wake.

Jean mathien and Julian Scott, Introduction to Turbulent Flow, Cambridge Univ. Press
R.J. Garde, Turbulent Flow, New Age Science.
Stephen Bailey Pope, Turbulent Flow, Cambridge Univ. Press

ME805 Micro scale fluid flow and Heat transfer (3-0-0)3

Prerequisite ; Heat Transfer , Fluid Mechanics

Introduction: Fundamentals of kinetic theory-molecular models, scaling laws for micro-domains, Microscale gas flows: Wall slip effects and accommodation coefficients, flow and heat transfer analysis of microscale Couette flows, micro-Poiseuille flows, effects of compressibility, introductory concepts on gas flows in transitional and free molecular regimes. Microscale liquid flows, Introduction to nanofluidics, concepts of nano-fluids and their augmented transport characteristics, An introduction to bio-microfluidics.

Suman Chakraborty, Microfluidics and Microfabrication, Springer, 2010.
Stephane Colin, Microfluidics, John Wiley & Sons, 2010

ME806 Surface Treating and Finishing (3-0-0)3

Plating Processes, Diffusion Processes, Thin Film Coatings, Advanced Thermal spray Coatings, Characterization and Testing of Coatings, High-energy Surface Modifications, Plasma Surface Engineering of Plastics, Heat Treatment of Tool Steels, Heat treating solid solution strengthened Iron- Nickel- and Cobalt- base superalloys, Heat Treatment of Titanium and Titanium alloys, Heat Treatment of Cast Iron, Defects and Distortion in Heat Treated Parts

K.G. Budinski, Surface Engineering for Wear Resistances, Prentice Hall, Englewood Cliffs, 1988.

M. Ohring, The Materials Science of Thin Films, Academic Press Inc, 2005
ASM Handbook, Surface Engineering, Vol. 5, ASM Publication, Materials Park, Ohio, 2001.
ASM Handbook, Heat Treating, Vol. 4, ASM Publication, Materials Park, Ohio, 2001.
ASM Handbook, Materials Characterization, Vol. 10, ASM Publication, Materials Park, Ohio, 2001.
Jamal Takadoum, Materials and Surface Engineering in Tribology, John Wiley & Sons, Inc., 2008.
Rointan F. Bunshah, Handbook of Hard Coatings, Noyes Publications, U.S.A.,2001

ME807   Modal Analysis (3-0-0)3

Modal Testing – Introduction, Applications, Measurement Methods, Single DOF system - Theory and Properties of FRF data, Multi DOF system – Undamped, Proportional damping, Hysteric damping, viscous damping, characteristics of FRF data, Mobility Measurement System - Basic measurement system, structure preparation, transducers and amplifiers, Analyzers, Digital Signal Processing. Modal parameter extraction methods – Introduction, preliminary checks of FRF data, SDOF – Peak amplitude, circle fit, inverse method. Analytical and Numerical modal analysis of beam. Demonstration of modal analysis of simple structures.

Ewins D J, "Modal Testing: Theory and Practice ", John Wiley & Sons Inc., 1988
Nuno Manuel Mendes Maia et al," Theoretical and Experimental Modal Analysis", Wiley John & sons, 1997.
Zhi-Fang Fu and Jimin He, "Modal Analysis", Butterworth-Heinemann Publisher, 2001.
Kenneth G McConnel and Paulo S Varoto, "Vibration Testing: Theory and Practice", Wiley, 2ⁿᵈ Edition, 2008

ME808   Vehicle Dynamics (3-0-0) 3

Introduction to Automotive vehicles and Vehicle dynamics, Fundamental approach to modeling, Dynamic axle loads, Automobile - Principle Components, Working Principles and Construction details, Forces and couples on the wheel, Tractive and braking effort, Vehicle drag, power for propulsion, Air resistance, rolling resistance, grade resistance, traction and tractive effort, distribution of effort, Stability of a vehicle on a slope, Front wheel drive, rear wheel drive and four wheel drive. Dynamics of a vehicle running on a banked and curved track, Vehicle Performance, Acceleration Performance, Braking Performance, Road Loads, Aerodynamics,Mechanics of air flow around a vehicle, Pressure distribution on a vehicle, Aerodynamic forces, Ride,Steady State Cornering, Roll Over, Electric Vehicles, Hybrid Electric Vehicles,Rail and off road vehicle dynamics

T.D. Gillespie, "Fundamentals of vehicle dynamics", Society of Automotive Engineers, Warrendale, PA, 1992.
N. K. Giri, "Automotive Mechanics", Khanna Publishers, Eighth edition
Ahmed A. Shabana, "Dynamics of Multibody Systems", Cambridge University Press; 2ⁿᵈ edition,1998.
Michael Blundell and Damian Harty, The Multibody Systems Approach to Vehicle Dynamics, Elsevier Limited, 2004.
M.Ehsani, Y.Gao and A.Emadi, Modern Electric, Hybrid Electric and Fuel Cell Vehicles, Second edition, CRC Press.

ME809   Theory of Plates and Shells (3-0-0) 3

Review of equations of elasticity – Langrange equations, energy principles, Hamilton's principle, Principle of minimum , total potential energy, applications. Classical Theory of Plates – stress and moment resultants, bending of rectangular plates with various boundary conditions and loading, limitations of classical theory. Buckling Analysis of Rectangular plates - simply supported plates under compressive forces, Navier solution, Uni-axial and Bi-axial compression of a plate, Buckling of plates simply supported on two opposite edges, Levy's solution, buckling of plates with various boundary condition. Vibration of Plates – governing equations, simply supported plate, Levy's solution, Rayleigh-Ritz method, plates with general boundary condition. Shells of revolution – geometric properties, strain displacement, stress resultants, equation of motion, analytical solution, vibration of cylindrical shells.

Timoshenko, S. Theory of Plates and Shells 2e,2ⁿᵈ Edition, TataMcGraw Hill, 2010
Reddy,J.N., "Theory and Analysis of Elastic Plates & Shells", C.R.C.Press,NY,USA, 2nd Edition,2006.
Maan H Jawad, " Theory and Design of Plate and Shell Structures", Springer, 2012.
Eduard Ventsel, and Theodor Krauthammer, "Thin Plates and Shells Theory and Applications",CRC Press, 2001.
Wilhelm Flügge, "Stresses in Shells", Springer – Verlag, 1990.

ME810 Gas Turbines and Jet Propulsion (3-0-0) 3

Thermodynamic cycle analysis of gas turbines; open and closed cycles. Axial flow turbines; blade diagrams and design of blading, performance characteristics. Centrifugal and axial flow compressors, blowers and fans. Theory and design of impellers and blading. Matching of turbines and compressors. Fuels and combustion, effect of combustion chamber design and exhaust on performance. Basic principles and methods of heat recovery. Thermodynamic cycle analysis and efficiencies of propulsive devices. Thrust equation, classification and comparison of ram jets, turbojets, pulse jets and rockets. Performance of turbo-prop, turbo-jet and turbo-fan engines. Augmentation of thrust.

H. Cohen, G.E.C. Rogers and Saravanamutto, Gas Turbine Theory, Longman GroupLtd., 1980.
Anderson, J.D., Modern Compressible flow, McGraw Hill, 3rd Edition, 2003.
S.M. Yahya, fundamentals of Compressible Flow, New Age International (P) Limited,New Delhi, 1996.
V. Ganesan, Gas Turbines, Tata McGraw Hill Publishing Co., New Delhi, 1999

ME811 Technology of Engineering Materials (3-0-0) 3

Structure metals and alloys, polymeric materials, ceramic materials; properties of material, mechanical behavior, processing of materials, thermal spray processing of metals and ceramics; economics, environmental and social issues of material usage.

Thomas H.Courtney, " Mechanical Behaviour of Materials ", (2nd Edition), McGraw-Hill, 2000.
Mathew Philip, Bill Bolton, " Engineering Materials, Butterworth-Heiremann, 2001.
Flinn, R.A. and Trojan, P.K., " Engineering Materials and their Applications ", (4th Edition), Jaico, 1999.
George E.Dieter, " Mechanical Metallurgy ", McGraw Hill, 1988.
ASM Handbook, "Fatigue and Fracture", Vol. 19, ASM Publication, Materials Park, Ohio, 2001.
Jamal Takadoum, Materials and Surface Engineering in Tribology, John Wiley & Sons, Inc., 2008.

DEPARTMENT OF MATHEMATICAL AND COMPUTATIONAL SCIENCES
NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

No. MACS/		Date:

Priority Level	Initiator's Expectations		
Urgent -	Approval	Decision	Action √
Normal √	Suggestions sought	Information sought	Information conveyed

From	To	Through	Copy to
The Head, Dept. of MACS	The Dean (Academic)		The Associate Dean (PG)

Subject:	Equivalent courses for the subjects prior to 2011 curriculum, in the revised 2012 PG &R curriculum – reg.

Reference:	M.Tech.(SACA) programme.

It was resolved to recommend the following equivalences in the revised 2012 PG&R curriculum for the two courses of M.Tech.(SACA) programmes in the prior to 2011 curriculum:

Course numbers in the curriculum prior to 2012 for M.Tech.(SACA)	Equivalent Course numbers in the 2012 curriculum for M.Tech.(SACA)	Credits to be awarded
SY704: Operating Systems	SY723: Operating Systems	4
SY755: Software Systems Engineering	SY725: Software Systems Engineering	4

Signatures of the DPGC members:

1.	Prof. Murulidhar N. N.	Chairman	
2.	Mr. R. Madhusudhan	Secretary	
3.	Prof. Keshava Prasad Halemane	Member	17-01-2013
4.	Prof. R. J. D'Souza	Member	On leave
5.	Dr. S. S. Kamath	Member	
6.	Mr. Jidesh P.	Member	
7.	Dr. V. Murugan	Member	

Dr. Murulidhar N. N.
Professor and Head
HEAD
Department of Mathematical and Computational Sciences
National Institute of Technology Karnataka, Surathkal
MANGALORE - 575 025

To be included in
BoS Agenda.

18/1/2013

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING, NITK – SURATHKAL

Proceedings of the DPGC Meeting held on 25th March 2013 at 03:45PM in the Department Meeting room

1. Mrs. Saumya Hegde gave the proposal to include new elective CS834- Network Optimization in the 2012 M.Tech.(CSE) curriculum. It has been discussed in the DPGC and resolved to recommend the inclusion of CS834- Network Optimization as elective.

CS834	NETWORK OPTIMIZATION	(3-0-0)3

(M.Tech(CSE) Elective, Group IV Algorithms)

Introduction, Mathematical preliminaries, Comparison of Label Setting and Label Correcting shortest path algorithms, Single Origin/Single Destination and Multiple Origin/Multiple Destination shortest path methods. The Max-Flow Problem: Cuts in a Graph, The Max-Flow/Min-Cut Theorem, The Maximal and Minimal Saturated Cuts, Price-Based Augmenting Path Algorithms. Multicommodity Flow Problems. Auction Algorithms for Min-Cost Flow: The Auction Algorithm for the Assignment Problem, Extensions of the Auction Algorithm, The Preflow-Push Algorithm for Max-Flow, The Auction/Sequential Shortest Path Algorithm. Simplex Methods for Min-Cost Flow

Ravindra K Ahuja, , Thomas L. Magnanti, James B. Orlin. Network Flows: Theory, Algorithms, and Applications, Prentice Hall, 1993

Eugene Lawler, Combinatorial Optimization – Networks and Matroids, Dover Publication 2002

William J. Cook, William H. Cunningham, William R. Pulleyblank, Alexander Schrijver, Combinatorial Optimization, Wiley 1997

Michal Pioro, Deepankar Medhi, Routing, Flow, and Capacity Design in Communication and Computer Networks, The Morgan Kaufmann Series in Networkin.

2. Dr. Jeny Rajan gave the proposal to include new elective CS864- Advanced Image Processing in the 2012 M.Tech.(CSE) curriculum. It has been discussed in DPGC and resolved to recommend the inclusion of CS864- Advanced Image Processing as elective.

CS864	ADVANCED IMAGE PROCESSING	(3-0-0) 3

(M.Tech(CSE) Elective, Group VII Open Group)

Basic concepts, Linear and nonlinear operations, Image Enhancement in the spatial and frequency domains, Important noise probability density functions, Estimation of signal and noise, medical image denoising, geometric transformations, image analysis, image segmentation, image registration, color image processing, image compression.

Rafael C. González, Richard E. Woods, "Digital Image Processing", 3rd Ed., PHI, 2007.

Anil K. Jain, "Fundamentals of Digital image Processing", Prentice Hall, US Ed., 1989.

Rafael C. González, Richard Richard Eugene Woods, Steven L. Eddins, "Digital Image Processing using MATLAB", Pearson Education India, 2004.

AL Bovik (Editor), "Handbook of Image and Video Processing", Academic Press

3. Dr. Shashidhar G. Koolagudi gave the proposal to include new elective CS865- Topics in Speech Processing in the 2012 M.Tech.(CSE) curriculum. It has been discussed in the DPGC and resolved to recommend the inclusion of CS865- Topics in Speech Processing as elective.

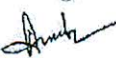CS865   **TOPICS IN SPEECH PROCESSING**   (3-0-0)3

(M.Tech(CSE) Elective, Group VII Open Group)
Mathematical foundations of signal processing, Speech production and perception, Speech signal analysis: Short time speech analysis, Time domain analysis, Frequency domain analysis, LPC (Linear predictive coding) analysis; Issues in in speech processing: Speech synthesis, speech recognition, speaker identification, emotion analysis, language identification; Introduction to advanced topics in speech processing: pattern classifiers.

Speech Communications Human and Machines (Second Edition), Douglas O'Shaughnessy, Fundamentals of speech recognition, Rabiner and Juan.

The following members were present:

1. Dr. K.C.Shet
2. Mr. K. Vinay Kumar
3. Dr. P. Santhi Thilagam
4. Dr. Annappa
5. Mrs. Saumya Hegde
6. Mr. Mahendra Pratap Singh
7. Dr. Shashidhar G. Koolagudi
8. Dr. Jeny Rajan

Annexure-IV

ME906 Selected topics in Advanced welding processes

Metallurgy of welding- Analysis of HAZ- optimization of process parameters in welding process- Modeling of metal flow and Heat transfer in welding process- Recent developments in the metal joining process.

Saddat Ali Rivzi, Advanced Welding Technology, S. K. Kataria & Sons, 2010,

Joseph William Giachino, William R. Weeks, George Stewart Johnson ,Welding technology 2nd edition, American Technical Society, 2007

Little Mn ,Welding & Welding Technology, Tata McGraw-Hill Education, 2001

Radhakrishnan, Welding Technology And Design, 2nd edition, New Age International, 2005,

A. L. Phillips, Welding Handbook: Fundamentals of welding, American Welding Society, 2009

Boniface E. Ross , Welding Engineering, McGraw-Hill Interamericana, 2007

ME907 Selected topics in Advanced Metal Casting Process

Analysis of fluid flow and heat transfer in solidification process.- Science of solidification phenomena- Microstructure modeling - Simulation studies in metal casting- Modern trends in metal casting.

Roy A. Lindberg, Process and materials of manufacturing , Allyn and Bacon publication, 4th edition, 1990.

Richard W. Heine, Carl R. Loper, Philip C. Rosenthal , Principles of Metal Castings , Tata McGraw-Hill Education, 2nd edition, 2001.

P.N. Rao, Manufacturing Technology, Tata McGraw-Hill Education; 3rd edition, 2009

ME908 Selected topics in Composite materials

Analysis of PMC, CMC and MMC - Recent advances in processing of composite materials- Natural composites- Nano-composites- Modeling and analysis of composite structures for engineering applications- FEM of composite structure.

Mein Schwartz , Composite Materials Handbook - Mc Graw Hill, 2nd edition , 1992

Autar K Kaw Mechanics of Composite Materials - CRC Press New York. – 2nd edition, 1997.

Rober M. Joness , Mechanics of Composite Materials - Taylor & Francis Group, 2nd edition, 1999.

M. W. Hyer, Scott R. White, Stress Analysis of Fiber Reinforced Composite Materials , Destech Publications, Inc, 2009.

Krishan K , Chawla , Composite Material Science and Engineering , Springer, 2nd edition - 1999.

P.C. Mallik , Fiber Reinforced Composites , Marcel Decker- 2nd edition, 1993.

National Institute of Technology Karnataka, SurathkalP.O. Srinivasnagar -575 025

Proceedings of the Committee for PG and R Scholarship Rules

Preamble: A Committee consisting of following members was constituted by the Chairman Senate vide No. CSSC-Acad/2012/B1 Dated:17-10-2012

1. Dr. Katta Venkataramana, Professor, Civil Engg - Chair Person

2. Dr. M. B. Saidutta, Professor, Chemical Engg - Member

3. Dr. A. Kandasamy, Professor, MACS - Member

4. Dean (Academic) - Member

5. Associate Dean (PG & R) - Convener

Terms and references for the committee:
The Committee shall look into the various issues regarding the scholarship rules for Ph.D and M.Tech students. The Senate Sub Committee is required to come up with recommendations.

Methodology Adopted:
The *first meeting* of the committee was held on 22-02-2013 at 2-30 PM in the Committee Room. Various issues to be considered were discussed.

Following suggestions were made;

1. The undertaking which is being taken from the students should be continued in the same format. However, any modifications from MHRD needs to be incorporated as and when it is available.
2. For Ph.D. students, the duration of Scholarship is up to submission of the thesis or up to a maximum of 4 years whichever is earlier. Beyond 4 years, a token amount (Amount to be decided) may be awarded as is practiced in some other Institutions until the submission of the thesis or a maximum of seven years from registration.
3. For M. Tech (Research) students, the duration of scholarship is up to submission of the thesis or 2 years whichever is earlier.
4. For Ph.D. Students converting the status from Full-time to Part-time, a conversion fee (Amount to be decided) may be collected instead of collecting the entire scholarship amount as is being practiced at present.
5. For Students who are leaving the course in between (i.e. before submitting the thesis), the entire scholarship drawn by them need to be collected back.
6. It was also felt that there is no need of collecting Fee from the students (both Ph.D. and M. Tech) after the submission of the thesis.

Prof. Katta Venkataramana   Prof. M. B. Saidutta

Prof. A. Kandasamy   Prof. Sumam David S

Prof. Jagannatha Nayak

Committee for Scholarship Rules - Proceedings of First Meeting   Page 1

INDIAN | भारतीय
COUNCIL FOR | सांस्कृतिक
CULTURAL | सम्बंध
RELATIONS | परिषद

MINISTRY OF EXTERNAL AFFAIRS, GOVT. OF INDIA

No. BNG/173/2012———   25th March 2013

**Sub: Admission of International Students for various
courses in NITK, Surathkal**

Sir,

This has reference to admission of international students in your institute. Apart from Engineering, ICCR desires to admit international students for courses like Pharmacy, Architecture, MBA, MCA etc, during 2013-14.

We shall be grateful, if you could kindly let us know,

a) The courses available.
b) No. of ICCR students you can admit
c) Fee structure.

An early reply is appreciated to enable us to send the application accordingly.

Thanking you,

Yours faithfully,

(Mrs. Sarala Unnikrishnan)
Regional Director

The Registrar (Academic)
National Institute of Technology Karnataka,
Surathkal,
P.O. Srinivasnagar,
Mangalore – 575 025

Proceedings of the Meeting of Deans and Heads of Departments offering BTech programs held on March 15, 2013 at 03.00PM in Board Room

Members Present

1. Prof G.Umesh, Director (i/c) and Dean(R&C)
2. Prof A. Kandasamy, Dean(FW)
3. Prof Lakshman Nandagiri, Dean (P&D)
4. Prof Sumam David S.,Dean (Academic)
5. Prof Jagannath Nayak, Associate Dean (PG)
6. Prof Subhash C. Yaragal, Associate Dean (UG)
7. Prof A U Ravishankar, Civil Engineering
8. Prof KV Gangadharan, Mechanical Engineering
9. Prof KP Vittal, Electrical & Electronics Engg
10. Prof Muralidhar Kulkarni, Electronics & Communication Engg
11. Prof. Vidya Shetty, Chemical Engg
12. Prof KN Prabhu, Metallurgical & Materials Engg
13. Prof Aruna M, Mining Engg
14. Prof KC Shet, Computer Science & Engg
15. Prof Ananathanarayana VS, Information Technology

The issue of revising Seat Matrix for DASA undergraduate admission 2013-14 was discussed in light of MHRD order No. F – 35-3/2011-TS.III (Pt.) dt 25-02-2013. It was resolved to recommend the following revised seat matrix based on the MHRD order and the status of DASA admissions in NITK Surathkal during the period 2010-12 :

Branch	Intake	DASA Seats Proposed - 2013-14	%
Civil Engg	92	16	17.39%
Mechanical Engineering	139	22	15.82%
Electrical & Electronics Engg	93	14	15.05%
Electronics & Communication Engg	93	16	17.20%
Chemical Engg	46	08	17.39%
Metallurgical & Materials Engg	46	03	6.52%
Mining Engg	46	03	6.52%
Computer Engg	92	16	17.39%
Information Technology	93	13	13.97%
TOTAL	740	111	15.00%

The meeting also resolved to recommend that allocation to any Department from IRG funds from DASA should be proportional to the number of DASA students admitted to that Department.

ELIGIBILITY CRITERIA FOR ADMISSION TO MCA DURING ACADEMIC YEAR 2013-14.

1. Indian Nationals securing at least 60% marks in aggregate or 6.5 CGPA on a 10 point scale (55% marks or 6.0 CGPA on a 10 point scale in case of SC, ST) in
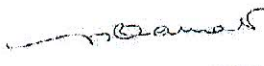
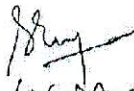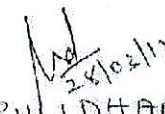   i). BSc /BSc (Hons)/BCA/BIT of minimum three years full-time;

   OR

   ii). B E /B Tech or equivalent:

   from a recognized University. The percentages of marks in qualifying degree are to be calculated on the basis of marks obtained in all the subjects studied in all the years including languages, optional and additional subjects studied, if any.

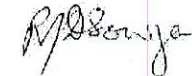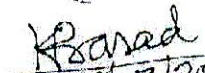2. A valid score in NITMCA Common Entrance Test (NIMCET - 2013)

(S. S. KAMATH)

(V. Murugan)

(MURULIDHAR N N)
HEAD
Department of Mathematical and Computational Sciences
National Institute of Technology Karnataka, Surathkal
MANGALORE - 575 025

(Jidesh P)

(R. J. D'Souza)

Barad
28/03/2013