



International
Institute of Information
Technology Bangalore

PROGRAMMES WHERE SYLLABUS REVISION FOR THE LAST FIVE YEARS

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for Senate Document

MTech Syllabus Revision

Year 2018 – 60th Senate Document

Integrated MTech Syllabus Revision

Year 2015 – 45th & 47th Senate Document

Master of Science (Digital Society) Syllabus Revision

Year 2015 – 45th Senate Document

Year 2018 – 60th Senate Document

Master of Science By Research Syllabus Revision *

Doctor of Philosophy Syllabus Revision *

* Master of Science By Research and Doctor of Philosophy research scholars need to take some mandatory courses from MTECH Programme.

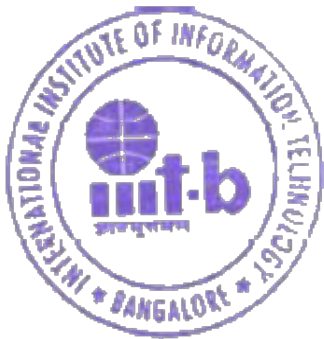
INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY, BANGALORE

45th Meeting of the Senate

Agenda and Notes



Date: April 8, 2015
Time: 2.00 p.m.
Venue: IIITB Board Room



26/C, Electronics City, Hosur Road, Bangalore 560 100 Phones: 080-28527627-635, 41407777



**INTERNATIONAL INSTITUTE
OF INFORMATION TECHNOLOGY BANGALORE**
26/C, Electronics City, Hosur Road, Bangalore 560 100
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Date: April 2, 2015

**Sub:45th meeting of the Senate of International Institute of
Information technology, Bangalore being held on April 8,
2015 at 2.00 pm.**

Dear Sir/Madam,

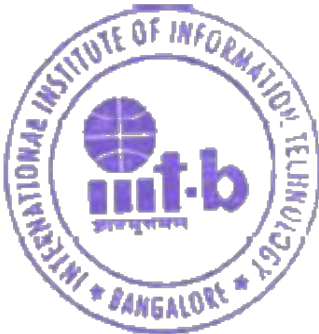
Please find herewith attached agenda papers and notes for the 45th
Meeting of the Senate of IIITB, being held on April 8, 2015 in the Board
Room of IIIT B at 2.00 PM.

Kindly make it convenient to attend the meeting.

Thanking you,

Yours sincerely,

(V S Prakash)
Secretary to the Senate



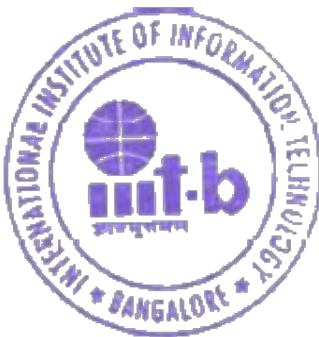
**Agenda and notes
for the
45th meeting of the Senate of the
International Institute of Information Technology, Bangalore
April 8, 2015 at 2.00 pm**

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| 45.5 | Consideration and recommendation of new 2 year MSc Program in Digital Society - Programme manual and Proposed curriculum | 5 - 6 |
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| 4 | MSc Program in Digital Society - Report on proposed curriculum | 118 |



| | |
|---------------------|--------------------------------------|
| | information from unstructured text” |
| Supervisor | Prof S Ramani and Prof S Rajagopalan |
| Degree | Ph.D |
| Date of the Defense | March 14, 2015 |

45.4 Consideration and approval of Restructuring 5 years Integrated M.Tech (iMTech) program Integrated M.Tech (iMTech) program

The Senate Chairman constituted a committee for designing the curriculum for Integrated M.Tech. (iMTech) in two branches, namely, Computer Science and Engineering (CSE) and Electronics and Communications Engineering (ECE). A report of the committee that includes the detailed curriculum for both the new programmes is included in Annexure 2. The report is tabled for senate’s consideration and approval if deemed fit.

45.5 Consideration and recommendation of new 2 year MSc Program in Digital Society - Programme manual and proposed curriculum

The Senate at its 43rd meeting in December 2014 discussed ways to streamline IIIT-B’s research and policy contributions on the use of digital technologies in education, governance, health and a number of other domains into a concrete teaching program. It was in this context that it was suggested the institute consider implementing a postgraduate program focused on the emerging challenges of a digital society. These discussions noted that IIITB has been introducing innovative academic programs since its inception to meet the evolving requirements of IT research and practice in India and elsewhere. Adding an interdisciplinary academic program to its offerings, and creating a platform for students from diverse academic backgrounds to learn together, would further consolidate IIITB’s position as a leader in innovative ICT education

Following up on this suggestion, a proposal containing a brief overview of a two-year interdisciplinary MSc (Digital Society) was presented at the 44th Meeting of the Senate, on 11th February 2015. In this meeting, it was decided to design a detailed MSc (Digital Society) curriculum for a programme to be launched in July/August 2015. Senate Chairman and Director approved an MSc (Digital Society) curriculum design committee with the following members: Prof. S Rajagopalan (Convener), Prof. Amit Prakash, Prof. Balaji Parthasarathy,



Prof. Bidisha Chaudhuri, Prof. Janaki Srinivasan, Prof. Jillet Sarah Sam, Prof. P G Poonacha, Prof. T K Srikanth and Prof. G Srinivasaraghavan.

The Committee met thrice in March. The draft report was placed in the LMS for feedback from the faculty. The Report was presented to the faculty at a meeting on the 25th March 2015. The Curriculum Report was finalised based on the discussion at these meetings. The report of the committee is at Annexure-W. The report provides a curriculum framework for the 2 year programme, semester wise break up of core and elective courses and also details for all core courses.

The committee also developed a programme manual , largely based on the existing M.Tech manual. This is at Annexure-3.

The Senate may consider the curriculum report (Annexure 4) and Programme Manual (Annexure 3) and if deemed fit approve them.

45.6 Items for Reporting:

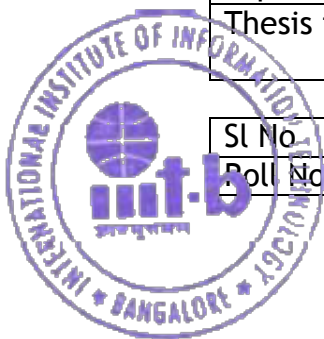
45.6.1. The following PhD student(s) has completed their Academic Milestone(s) as detailed below:

| | |
|---------------------|---|
| Sl.No. | 1 |
| Roll No. | PH2013002 |
| Student Name | Gracy Joseph |
| Supervisor | Prof Meenakshi D'Souza |
| Thesis title | "Safety validation of embedded systems with COTS components |
| Academic Milestone | Comprehensive examination |
| Date of the Seminar | March 27, 2015 |

45.6.2 The following students have submitted their PhD and MS by Research thesis for examination and the same is in progress

| | |
|--------------|---|
| Sl No | 1 |
| Roll No. | PH2006905 |
| Student Name | Vivek Shanbhag |
| Supervisor | Prof K V Dinesha |
| Thesis title | Locating Lock Order Violations in Java Libraries - A Scalable Static Analysis |

| | |
|----------|-----------|
| Sl No | 2 |
| Roll No. | MS2013004 |



INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY, BANGALORE

47th Meeting of the Senate

Agenda and Notes



Date: August 19, 2015
Time: 2.00 p.m.
Venue: IIITB Board Room

26/C, Electronics City, Hosur Road, Bangalore 560 100 Phones: 080-28527627-635, 41407777

**Agenda and notes
for the
47th meeting of the Senate of the
International Institute of Information Technology, Bangalore
August 19, 2015 at 2.00 pm**

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| 47.5 | Restructuring M.Tech. "Mathematics for IT" Core Course | 6 |
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| 1 | Minutes of the 46 th Senate Meeting | 18-35 |
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| | | |
|------|---------------------------------------|--|
| 46.6 | Scholarships/Medals- to 7 students | Governing Body, having accepted the recommendations of the Senate conferred the Scholarships and Medals to the referred 7 students in the 15th Convocation held on 5th July 2015 |
|------|---------------------------------------|--|

47.3 Consideration and Recommendation of the Student(s) for Award of Master of Science by Research Degree

| | |
|---------------------|--|
| Sl No | 1 |
| Roll No. | MS2011008 |
| Student Name | Srinivasan M S |
| Thesis Title | Computational Models to Identify Celebrities from Social Media |
| Supervisor | Prof. Srinath Srinivasa |
| Degree | Master of Science by Research |
| Date of the Defense | June 23, 2015 |

The Senate may consider for award of Master of Science by Research degree and recommend to the Governing Body, if approved, conferring the said degree to them.

47.4 iMTech curriculum retrofit for batches 2012, 2013, 2014:

Integrated M.Tech. (iMTech) curriculum was updated and approved by the Senate for batches joining during 2015-16 academic year onwards. It is proposed that some elements of the revised curriculum be retrofitted for earlier batches of the programme too.

Following are the key elements of the new iMTech 2015 curriculum that is proposed to be made applicable for the iMTech batches of 2012, 2013 and 2014 too:

1. Convert 9th and 10th semesters into "Masters Project" of which 9th semester can be spent in the industry and 10th semester in the Institute OR do a 1 year Thesis. There will not be any compulsory Summer internship after their 6th semester.
 - o Existing structure: 2.5 months of internship in Summer after 6th Semester and 1 year of compulsory Thesis during 9th and 10th semesters.
2. Converting "IT in Domains" into "IT Electives"
 - o Existing structure: Two specific electives need to be done in specific domains (e.g., banking, healthcare, etc.). We have found it difficult

to get faculty members to offer sufficient number of electives in specific domains.

The above points are approved for iMTEch 2015 onwards. The Senate may consider the same, to be made applicable for the earlier batches too.

47.5. Restructuring M.Tech. “GEN 501 Mathematics for IT” Core Course

The M.Tech. core course GEN 501 Mathematics for IT is a 4 credit course comprised of 4 modules: Probability Theory and Statistics, Linear Algebra and Matrix Theory, Discrete Mathematics, Optimization - Convex Programming. Based on the feedback from the faculty members who taught the course during the last three years, following are the proposed changes to the course:

-) Split the course into three separate courses of 2 credits each: (a) Probability Theory and Statistics, (b) Linear Algebra (c) Discrete Mathematics
-) Students have to choose two out of the three modules (thus totalling 4 credits overall for the Mathematics courses).

The course proposal documents are included in Annexure -2.

47.6. Proposal for a new letter grade ‘W’

‘W’ grade: Indicates the student withdrew from the course. The course credits will not be counted for the student. Consequently, no impact on CGPA either. The grade will be listed in transcript with ‘W’ grade. The instructor takes a call on award of this grade at the end of the course.

47.7. Items for Reporting:

47.7.1 MS & PhD 2015 Batch: List of the students admitted for research program during the year 2015-16.

| Sl. No. | Roll No. | Name of the Student | Ft/PT | Stream | Supervisor/co-supervisor | Funding Source |
|---------|------------|---------------------|-------|--------|--|----------------|
| 1 | MS2015001 | Ananta Kumar Das | PT | SE | Sujit Kumar Chakrabarti | NA |
| 2 | MS2015002* | Bhawna Arora | M.S | FT | Sujit Kumar Chakrabarti | NA |
| 3 | MS2015003 | Dhirendra Singh | FT | CS | G Srinivasaraghavan; co-supervisor: Jaya Sreevalsan Nair | INCOIS |

INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY BANGALORE

60th Meeting of the Senate

Minutes of the Meeting



Date: February 21, 2018
Time: 2.00 PM.
Venue: IIITB Board Room

26/C, Electronics City, Hosur Road, Bangalore 560 100 Phones: 080-28527627-635, 41407777

Minutes of the 60th Senate meeting

International Institute of Information Technology, Bangalore

February 21, 2018 at 200 PM

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| 60.1 | Confirmation of the minutes of the 59th meeting of Senate | 5 |
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| 60.6 | For consideration and approval of the Senate with regard to Research students | 11 |
| 60.7 | Items for Reporting | 12 - 15 |
| 60.8 | Any other matter with permission of the Chair. | 15 |

| | |
|---|--|
| Thesis Oral Examination | PASSED |
| Fulfillment of requirements for award of Degree Reviewed by | Programme Coordinator |
| SI No | 3 |
| Roll No. | PH2012003 |
| Student Name | Joy Prabhakaran |
| Thesis Title | Novel techniques in Image zooming and hierarchical multi-resolution image representation |
| Supervisor | Prof P G Poonacha Prof Jaya Sreevalsan Nair |
| Degree | PhD |
| Course Credits | 16 |
| Research Credits | 92 |
| Milestone Checklist | |
| Comprehensive Exam | PASSED |
| State of the Art Seminar | COMPLETED |
| Open Seminar | COMPLETED |
| Thesis Examination | PASSED |
| Thesis Oral Examination | PASSED |
| Fulfillment of requirements for award of Degree Reviewed by | Programme Coordinator |

60.4 Curriculum Review

The Chairman Senate constituted curriculum review committees as per the following:

- M.Tech. (Electronic Systems Design) chaired by Prof. B S Sonde
- M.Sc. (Digital Society) chaired by Prof. S S Prabhu

An internal committee chaired by Dean (Academics) was also constituted for the following programme:

- M.Tech. (Information Technology)

The Senate accepted the reports of the committees and placed on record deep appreciation of the thorough and comprehensive deliberations recorded in the reports.

A Change Management Subcommittee comprised of the conveners of the three committees presented the proposed changes to the various programmes arising out of the recommendations in the committee reports. The Senate deliberated extensively on the proposed changes. The approved changes and the next steps are noted for the programmes in the following sections.

60.4.1 Changes to M.Tech. (IT)

Amongst the changes that were proposed by the Change Management Subcommittee, the following changes are approved:

| Change | Existing | Proposed |
|--------------------------------|--|--|
| Name of the Programme | M.Tech. (Information Technology) | M.Tech. (Computer Science and Engineering) |
| Specializations | <ul style="list-style-type: none"> • Computer Science & Engineering, (CSE) • Data Science (DS) • Networking & Communication and Signal-processing (NCS) | <ul style="list-style-type: none"> • Theory and Systems (TS) • Data Science (DS) • Networking and Communication (NC) • Signal Processing and Pattern recognition (SP) |
| Preparatory Term | 3 weeks Preparatory Term (zero credits) | 2 weeks Programme Orientation on various topics outside of regular curriculum |
| Total Number of Credits | 64 | 64 |
| Total Intake | 150 | 130 |
| UG Branch for Admissions | BE/B.Tech. in any Branch | BE/B.Tech. in any one of the following branches: <ul style="list-style-type: none"> • Computer Science and Engineering • Computer Engineering • Information Technology • Information Systems • Electronics and Communications Engineering |
| Admission Entrance Examination | GATE | GATE |
| Admissions GATE Subject | <ul style="list-style-type: none"> • CS - Computer Science and IT • EC - Electronics and Communication Engineering • EE - Electrical Engineering | <ul style="list-style-type: none"> • CS - Computer Science and IT |

The Senate suggested that other changes not included in the approval above be discussed with the faculty members and a comprehensive programme structure including course contents be presented to the Senate.

Action required: Detailed M.Tech. (CSE) curriculum document along with list of courses and course descriptions as per the Course Proposal Document template to be prepared.

60.4.2 Changes to M.Tech. (ESD)

Amongst the changes that were proposed by the Change Management Subcommittee, the following changes are approved:

| Change | Existing | Proposed |
|--|--|--|
| Name of the Programme | M.Tech. (Electronic Systems Design) | M.Tech. (Electronics and Communication Engineering) |
| Specializations | 1) System on Chip (SOC) 2) Embedded Systems | To be decided |
| Preparatory Term | 3 weeks Preparatory Term (zero credits) | 2 weeks Programme Orientation on various topics outside of regular curriculum |
| Total Number of Credits | 64 | 64 |
| Total Intake | 30 | 50 |
| Admissions UG Branch | BE/B.Tech. in any Branch | BE/B.Tech. in any one of the following branches: <ul style="list-style-type: none"> • Computer Science and Engineering • Computer Engineering • Electronics and Communications Engineering • Electrical Engineering • Instrumentation Engineering |
| Admissions Entrance Examination | GATE | GATE |
| Admissions GATE Subject | <ul style="list-style-type: none"> • EC - Electronics and Communication Engineering • IN - Instrumentation Engineering | <ul style="list-style-type: none"> • EC - Electronics and Communication Engineering • IN - Instrumentation Engineering • EE - Electrical Engineering |

The Senate suggested that other changes not included in the approval above be discussed with the faculty members and a comprehensive programme structure including course contents be presented to the Senate.

Action required: Detailed M.Tech. (ECE) curriculum document along with list of courses and course descriptions as per the Course Proposal Document template to be prepared.

60.4.3 Changes to M.Sc. (Digital Society)

Amongst the changes that were proposed by the Change Management Subcommittee, the following

The following changes are proposed to the M.Sc. (Digital Society) programme.

| Change | Existing | Proposed |
|--------------------------|---|---|
| Name of the Programme | M.Sc. (Digital Society) | No change |
| Specializations | None | <ul style="list-style-type: none"> • Human-centered digital design • Data intensive digital design • Research and policy studies |
| Preparatory Term | 2 weeks Preparatory Term (2 credits) | 2 weeks Programme Orientation on various topics outside of regular curriculum |
| Total Number of Credits | 76 | 66 |
| Total Intake | 30 | No change |
| UG Branch for Admissions | An under-graduate degree (of at least 3 years duration) in any discipline with a first division/class from a recognized University. | No change |

Credit Structure

Programme Orientation (2 weeks)

1. Technical Foundations (to cover programming and database fundamentals) - *new*
2. Social Science Foundations (to cover some fundamental ideas in social science, reading comprehension and writing practice) - *new*

Semester 1 (16 weeks, 18 credits, 5 core courses)

1. Digital Components of a Connected Society (4)

2. Tools for a Connected Society (2) - *new*
3. Interface Design (*substantially redesigned with a Digital Design focus*) (4)
4. Research Methods (Quantitative and Qualitative) (4) - *new*
5. Technology and Society (4)

Semester 2 (16 weeks, 16 credits, 3 core courses, 1 elective)

1. Technology in Development- *new title*
2. ICT Policy and Regulation
3. Social Complexity and Systems Thinking- *new title*

Semester 3 (16 weeks, 16 credits, 4 electives)

Semester 4 (22 weeks, 16 credits Thesis/Internship)

Tentative Pool of electives for semesters 2 and 3, categorized by specialization
 (note: an elective may appear in more than one specialization; more electives may be added depending on future need and interest of students and faculty members. Students have the option of choosing from the listed M.Tech. electives too provided the student has the necessary pre-requisite knowledge and background.)

| Human Centered Design/ Digital Design | Data Intensive Design / Digital Design | Research and Evaluation of Digital Production and Use Contexts/ Research and Policy Studies |
|---|---|---|
| <ul style="list-style-type: none"> • Advanced Qualitative Research Methods • Advanced Interface Design/HCI (<i>new</i>) • E-Governance Application Design • IT Product and Project Management • Smart Cities • Social Media Communication | <ul style="list-style-type: none"> • Advanced Quantitative Methods/ Data Manipulation (<i>new</i>) • Data Modeling* • Data Visualization* • Geographical Information Systems* • IT Product and Project Management* • Machine Learning* • Information Networks* • Multi-agent Systems* | <ul style="list-style-type: none"> • Advanced Qualitative Research Methods • Advanced Quantitative Methods/ Data Manipulation (<i>new</i>) • Dynamics of the IT Industry • E-Governance Application Design • Political Economy of Location • Smart Cities • Social Media Communication • Techno-Economics of Networks |

* M.Tech. Elective can be taken provided the student satisfies the necessary pre-requisites and suggested by the respective course instructor

Action required: Detailed M.Sc. (Digital Society) curriculum document along with list of courses and course descriptions as per the Course Proposal Document template to be prepared.

60.4.4 Other Recommendations

In addition to the curriculum changes approved above, the Senate noted the following suggestions:

- Evaluation of M.Tech. projects being done outside the institute through internships needs to be streamlined. The mid-term and end-term evaluation reports to be recorded and filed as part of the graduation requirements
- Provide more opportunities to do projects during the entire duration of the programme. Faculty members encouraged to engage with the students in project and research activities during the summer term.

Action required: The programme coordinators to operationalize the above recommendations during Academic year 2018-19 and report to the Senate along with feedback of the effectiveness of the action taken.

60.5 Instruction Days: The senate noted the same.

| Category | Number of Days |
|-----------------------------|----------------|
| Instruction Days | 190 |
| Exam Days | 24 |
| Sundays | 37 |
| Holidays | 12 |
| Term Break | 102 |
| Annual Calendar Days | 365 |

60.6 The Senate approved the inclusion of co supervisor and conversion from full time to part time in respect of the following research students

| Sl. No. | Roll Number | Student Name | Supervisor | Approval for |
|---------|-------------|----------------------|----------------------------------|---|
| 1 | MS2015007 | Nandakishore K N | Prof V Sridhar | Inclusion of Prof T K Srikanth as co-supervisor |
| 2 | PH2014010 | Sunil Kumar Vengalil | Neelam Sinha/G Srinivasaraghavan | Conversion from Full time to Part time |
| 3 | PH2015016 | Avijit Mandal | Prof Meenakshi D'Souza | Conversion from Full time to Part time |

Action Required: Update student files and all records