Minutes of the 29th Senate meeting of IIIT-D held on 21st April, 2015 at 03.00 PM in the Senate Room, B-wing, R&D Building, Okhla Industrial Estate, Phase-III, New Delhi-110020

Following members were present:

- Prof. Pankaj Jalote - Chairman
- Prof. K.K. Biswas - External Member
- Prof. Dheeraj Sanghi - External Member
- Dr. Kaushik Saha - External Member
- Prof. Shreekant Gupta - External Member
- Prof. Samaresh Chatterji - Ex-Officio Internal Member
- Mr. Hemant Kumar - Ex-Officio Internal Member
- Dr. A.V. Subramanyam - Internal Member
- Dr. Mohd. S. Hashmi - Internal Member
- Dr. Sriram K. - Internal Member
- Dr. Sujay Deb - Internal Member
- Mr. Ashwani Kumar Kansal - Secretary

Following member attended via telecon:

- Dr. Gautam Shroff - External Member

Special Invitees:

- Dr. Pushpendra Singh - Faculty-IIITD
- Dr. Mayank Vatsa - Faculty-IIITD
- Dr. Alexander Fell - Faculty-IIITD
- Mr. Manohar Khushalani - Visiting Faculty- IIITD
- Mr. K.P. Singh - Academic Incharge
- Ms. Sheetu Ahuja - AM -Academics

TWENTY- NINTH (29th) MEETING OF SENATE OF IIIT-DELHI
MINUTES OF THE MEETING
(held on 21st APRIL, 2015)

General

29.1 Opening remarks of the Chairman.

The Chairman welcomed all to the meeting. Thereafter, agenda items were taken up for discussions.

29.2 Confirmation of minutes of the 28th meeting of the Senate held on 30th December 2014.

Since there were no comments, the minutes of the 28h meeting of the Senate held on 30th December, 2014 were confirmed.

29.3 Approval of Academic Calendar for Summer Term 2015

The Senate approved the Academic Calendar for Summer Term 2015 placed at Appendix-I.

29.4 To consider the guidelines for moderation of grades

Chairman, Senate apprised the members of the proposed guidelines for moderation of grades. After detailed deliberations the Senate after making a few minor changes approved the guidelines as placed at Appendix-II`

29.5 To consider template for ascertaining report on conduct of Semester Examination

Chairman, Senate apprised the members of the need to closely monitor the attendance and reporting in the semester examination. After detailed deliberations the Senate approved the format for collecting information from the instructors as placed at Appendix-III. The Senate further desired that a summary of the information to be collected from the instructors may be placed before the Senate after each mid semester and end semester examination.

29.6 No. of Courses being taught in Winter 2015 and No. of Students Registered in each Course.

The Senate noted the position.

29.7 Total Number of Late Drops for Winter 2015

The Senate noted the position. However, it was decided that the practice of reporting under this heading be discontinued from the next meeting.

29.8 To report the summary of Grade Change for Monsoon Semester 2014

The Senate noted the position with the minor correction that faculty for course CSE 790 to be read as Dr. Ashish Sureka

29.9 To report the students who are on semester leave during Winter Semester 2015

The Senate noted the position.

29.10 To report the summary of student course feedback for Monsoon 2014

This item was dropped.

29.11 To apprise Senate about holding of 4th Convocation and related issues like Chief Guest etc

Chairman, Senate apprised the members of the forthcoming convocation. He also informed that selection of Chief Guest is still in process.

29.12 To report extension of term of the existing Senate members till end of Summer,2015

Senate ratified the approval given by Chairman, Senate for extension of the term of the existing Senate members till end of Summer,2015.

29.13 To report the list of students who completed graduation requirements on 21st Dec., 2014

The Senate approved the list of students who completed Graduation requirement on 21st December 2014.

UG ISSUES

29.14 To consider the revised B.Tech. (CSE) program

Chairman, Senate presented the salient features of the revised B.Tech. (CSE) program. After protracted discussions it was felt that the proposed changes need to be further relooked by the CSE faculty in the light of the discussions held at the meeting. Some of the concerns that were expressed are: the S&S course is better suited for 2nd year and that is how it is done in most places; it is not appropriate 2nd semester course, particularly since there is a heavy math course already in that semester; it is better if it is considered as a Engg Science course for ECE students in 2nd year. Also, requiring Bio in first year was considered unsuitable as students may consider this "forced" and also having this course in 1st year may not serve the purpose of getting people interested in Comp Bio aspects. It was felt that the proposed

changes need to be further relooked by the faculty and make suitable recommendations. Accordingly, the Senate deferred the proposed changes in the B.Tech. (CSE) program.

29.15 To consider the revised B.Tech. (ECE) program

Due to the concerns raised on CSE program, it was felt that there is no need to discuss this, and the changes to this program may be discussed together with CSE later.

29.16 To report modifications in Dual Degree regulation

The Senate noted the position. Any issue arising out of implementation will be resolved in a meeting of Registrar and the Director.

29.17 To consider the proposal for stopping of External BTP

Chairman, Senate apprised the members of the background of the proposal for stopping External BTP. After detailed discussions the Senate agreed to discontinue the External BTP. The Senate further desired that the students as well as Placement Unit may be suitably informed.

29.18 To review the existing rules for Branch transfer of BTech. students from ECE to CSE and vice- versa

Chairman, Senate apprised the members of the existing rules for Branch transfer from ECE to CSE and vice- versa. After detailed deliberations the Senate decided to permit branch transfer to the extent of 10% of the existing strength in any discipline excluding the repeaters. However for BTech 2014 batch transfer may be done by including the repeaters.

29.19 To report the number of B.Tech. students migrated to Dual Degree program during academic year 2014-15

The Senate noted the position.

29.20 To report increase of two more supernumerary seats (i.e. 12 seats) for B.Tech. admission through DASA

The Senate noted the position and approved 12 supernumerary seats (CSE-7 and ECE 5) for admission through DASA during the academic Year 2015-16.

29.21 To report attendance in the UG Core Courses

Chairman, Senate apprised the members of the earlier decision of the Senate on attendance vide its 26th meeting held on 25th June,2014 and the data presented in the summary sheet. The

Senate noted that average attendance of students taken so far on random basis falls below the threshold. After detailed deliberations the Senate decided as under:

(a) For the current year the students whose average attendance in the core courses as shown in the summary sheet is below 75% be issued a warning for shortage of attendance and advised to improve his/her attendance in future, if some notice/email was sent to them. He/she may be further informed that in case his/her attendance in the core courses during next academic year falls below 75%, more serious action can be taken.

(b) From next academic year (2015-16), it was agreed that if the attendance in core courses falls below 75%, then the student will not be allowed to appear in the final exam – this is a rule prevailing in many institutions and it should be followed at IIIT-Delhi also to get students to attend classes more regularly. In addition, the following steps be taken:

(i) The attendance will be taken regularly, and will start soon after the semester starts.

(ii) After one month of teaching, the report of shortage of attendance in core courses be communicated to the students as well as his/her parents

(iii) For other non-core courses, the Instructor can give 10% weightage to attendance for which he/she will announce on the first day of the respective class.

(iv) Any impersonation in marking attendance will have serious consequences and may lead to a Semester drop.

29.22 Recommendation / Report by UGC

(i) To consider recommendation of the UGC to allow Economics as HSS course

The Senate considered and agreed to the recommendation of the UGC to allow Economics courses to count as HSS courses in general and also for the minor in Economics if taken by the student..

M.TECH. ISSUES

29.23 To consider starting of M.Tech. program in Computational Biology (CB) from Academic Year 2015-16

Chairman, Senate apprised the members of the earlier decision of the Senate where the M.Tech. program in Computational Biology (CB) was initially approved. However, due to inadequate response from the candidates the starting of the program from academic year 2014-15 was deferred. He informed that thereafter, the program has been reviewed and it is proposed to open to other disciplines also (other than CS/IT). Dr. Sriram K. presented the

salient features of the proposal and answered the queries made by the members. The Senate approved the proposal after making changes in the eligibility criteria as per **Appendix-IV.** The Senate also suggested that the program be reviewed by some experts in the area, and authorized the Chairman, Senate to make appropriate changes based on that. Suitable changes in existing Regulation are to be done, which will be approved by the Chairman.

29.24 To consider recommendation of the PGC regarding Thesis / Scholarly paper guidance by Adjunct Faculty

Chairman, Senate apprised the members of the recommendation of the PGC made at its 5th meeting held on 30.1.2015 on the issue of guidance of M.Tech. thesis or Capstone Project by an Adjunct Faculty. After discussions the Senate agreed to the recommendation of the PGC and decided that a fresh M.Tech. student can be allowed to be guided by an Adjunct faculty only with a co-supervisor.

29.25 To report a list of thesis defense of 2012 batch M.Tech students.

The Senate noted the position and desired that the list may be placed on the IIITD website as well as in the Annual report.

29.26 Recommendation Report by PGC

(i) **To consider recommendation of the PGC to allow PG student (M.Tech./Ph.D.) to replace up to two courses in which he/she has obtained passing, but not good grade.**

Chairman, Senate apprised the members of the existing Regulation 14(2) b. for M.Tech. and Regulation 15(2) c. for Ph.D. and the recent recommendation of the PGC made at its 7th meeting held on 1st April,2015 related to replacement of courses. After deliberations the Senate agreed to the recommendation of the PGC and decided that M.Tech. and Ph.D. students be allowed replacement up to two courses as and when the request is made by the concerned student.

PH.D. ISSUES

29.27 To consider modification of Regulation 15(7) dealing with Comprehensive examination of Ph.D. students

Chairman, Senate apprised the members of the existing PG Regulation 15 (7) dealing with Ph.D. Comprehensive examination. He also pointed out certain confusion among the students about the timeline for completing comprehensive examination. After detailed deliberations the Senate approved the following timeline recommended by the PGC:

A student is expected to complete his/her comprehensive examination as per the following timeline:

S.No.	Category of Ph.D.students	Time limit for completion of Comprehensive
1.	PhD students admitted directly from a BTech	5 semesters
2.	PhD students after completing MTech	3 semesters
3.	PhD students migrating from MTech	3 semesters from the date of joining PhD

A student, who fails the examination, will be allowed an additional half a semester (i.e. 3 months) to complete the comprehensive examination requirements

29.28 To report the status of Rolling PhD Admissions

The Senate noted the position.

29.29 (i) To report the summary of PhD students' review held in January,2015

The Senate noted the position and desired that the concerned students may be informed suitably.

(ii) To report the data of Ph.D. students admitted through different channels and their progress

The Senate noted the position.

29.30 Status of Writ Petition (C) No. 3858/2014 filed by Mr. Madhur Hasija

The Senate noted the position.

29.31 Approval from AICTE

Registrar apprised the members of the present status.

29.32 Application for NAAC Accreditation

Registrar apprised the members of the present status.

29.33 Application for NBA Accreditation

Registrar apprised the members of the present status.

29.34 To review the existing credits for the BTP towards degree requirement

Chairman, Senate apprised the members of the existing provision for BTP credits in clause 4.6 of the Regulation for B.Tech.(CSE). He also informed that based on the experience gained in the past it is now felt necessary to reduce the present weightage for BTP credits towards fulfilment of degree requirement. After detailed deliberations the Senate agreed to the proposal to modify the existing clause 4.6 as under:

> A BTech Project (BTP) is optional. A student opting for BTP, may take a total of 8 to 16 credits of BTP. However, at most 12 credits of BTP will count towards fulfilment of degree requirements. In a semester, the student can normally register for at most 8 credits of BTP.
>
> The Senate also decided that relevant clause of B.Tech (ECE) regulation be modified accordingly.
>
> The above change will apply from next year and the students may be informed of the same. Suitable changes in the regulations be made.

29.35 To consider relaxation in eligibility criteria for Kashmiri Migrants

Chairman, Senate apprised the members of the communication received from the Deputy Secretary to the Govt. of India, MHRD vide letter dated 12th March, 2015 conveying the decision of the Competent Authority for extending certain concessions to the Kashmiri Migrants in the matter of their admission to the institute till further orders. He also informed that at present the Institute reserves one seat for Kashmiri Migrants on supernumerary basis and there is no relaxation in minimum eligibility requirement. It was noted that the Institute currently provides 10 percent relaxation in minimum eligibility requirement to SC/ST and 5% to OBC, PwD and Defense category students. After detailed deliberations the Senate decided that 10 percent relaxation in minimum eligibility requirement be provided to Kashmiri Migrants for admission to B.Tech. program at the Institute.

Appendix-I

Semester Schedule for Summer Term 2015

S.No.	Event	From Date	Day	To Date	Day
1	Pre-registration	30/04/2015	Thursday	05/05/2015	Tuesday
2	Registration	11/05/2015	Monday	13/05/2015	Wednesday
3	Commencement of classes	14/05/2015	Thursday		
4	Last date for course Drop (for Instructor driven courses)	20/05/2015	Wednesday		
5	Mid-Semester Examination	01/06/2015	Monday	03/06/2015	Wednesday
6	Last date for Late Drop (for Instructor driven courses)	10/06/2015	Wednesday		
7	End –Sem. Examination	13/07/2015	Monday	15/07/2015	Wednesday
8	Moderation meeting	20/07/2015	Monday		
9	Grades to reach UG/PG Section	23/07/2015	Thursday		
10	Verification of Grades	24/07/2015	Friday		
11	Announcement of Grades (tentative)	27/07/2015	Monday		

Monsoon Semester 2015

S.No.	Event	Date	Day
1	First Class of the Semester	03/08/2015	Monday

Appendix-II

Moderation of Grades

1. All grades will be moderated by a moderation committee appointed by the Senate. Grades are finalized only after approval by the moderation committee to be appointed by the Director.

2. Moderation will normally be done in a faculty meeting, where each instructor (or his/her nominee) will present the grades and explanations for the grading scheme. If for some reason this is not done, moderation will be done later by the moderation committee.

3. Normally the final moderated grades will be as agreed by the Instructors (for courses), evaluation committee (e.g. for BTP), all the supervisors, including external (e.g. for IP/IS/UR).

4. For courses taught, or projects guided, by guest / adjunct / external faculty, the final moderated grade will be what is decided in the moderation meeting based on inputs from the guest/adjunct/external faculty.

5. In case of any exceptional situation, the moderation committee will decide the final moderated grade after deliberations. The final grade awarded by the moderation committee in such an exceptional situation will be reported to the Senate, along with reasons for the same.

6. Some examples of exceptional situations are: a complaint that the grade being given by an instructor/supervisor is for non-academic considerations; supervisors for an IP/IS/UR are unable to provide a consensus grade; the grade distribution in a course is, in the opinion of the moderation committee, extremely skewed and justifications by the instructor are not sufficient; the grades for a course (inclusive of BTP/IS/IP/UR) were not moderated in the faculty meeting convened for the purpose etc.

7. The final grades (on hard copy) given by guest / adjunct / external faculty who has no access to grade entry in the ERP, will be entered by the concerned official of the Academic Section. All such grade entries will be checked by the Incharge of the Academic Section to avoid any error or omission.

Appendix-III

INDRAPRASTHA INSTITUTE OF INFORMATION TECHNOLOGY DELHI

REPORT ON CONDUCT OF EXAMINATION

Please fill this form and submit to Academic Section after the examination

Semester: _____
Course No:_____ Title:_____
Instructor:_____
Date of Examination _____ Time & Duration _____Room No._____
No. of Invigilators (other than Instructors)
(i) Faculty_____(ii)Students:_____
No. of students in the course _____
No. of students present _____

List of students who were absent:

Roll No.	Name of the student

(a) Was there any kind of disturbances during the Examination? Yes/No
(If yes, please give a report at the back of the sheet)

(b) Was there any case of cheating? Yes/No
(If yes, please give details)

(c) Any other comments/observations/suggestions:

Signature of Instructor In-charge(s)

Appendix-IV

Concept note on

MTech in Computational Biology

Motivation

The genomic revolution in biology enables one to answer many questions in medical sciences like personalized medicine, the etiology of diseases like cancer, HIV, SARS etc, etc. However, answers to these questions are impossible without the support of powerful computational and statistical tools that helps to understand and uncover the underlying systems level regulatory mechanisms (such as network design principles) responsible for diseases. With the advent of new biotechnological techniques, massive amounts of genomics data are generated at a rapid pace from the experiments and analysis of these data requires tremendous amount of domain knowledge, solid computational background and good programming skills. This has led to the development of a highly interdisciplinary field of Computational Biology and Bioinformatics which consists of a good amount of understanding of molecular biology, genomics, algorithms, programming, statistical computation, machine learning, stochastic processes, and other mathematical techniques that underlie biological design principles.

For developing skilled manpower for this field, an interdisciplinary program is needed which combine suitable aspects of biology, statistics, algorithms and mathematical models to analyze large-scale genomic and biological data in one program in a focused and strategic manner.

Currently few Institutions have strength and capability to offer interdisciplinary education in this area. IIIT-Delhi, with its strong focus on research, and with a good faculty in various CS and EE as well as Computational Biology, is well suited to offer such an interdisciplinary program of computing and biology. The proposed MTech program aims to train students in the key aspects of computing, bio informatics, and analysis of biological systems through the use of modeling and analytics.

Where the Graduates of this Program will be placed

This program fills a vacuum by creating manpower that can solve biology problems using computational techniques and data. Such manpower is needed in companies in life sciences, as they are generating large amounts of data and need manpower that understands the data and can apply computational techniques to analyze it and answer questions.

Types of Bio companies, Nucleome Informatics Pvt Ltd. http://www.nucleomeinfo.com (provide bioinformatics solutions to academic and industrial customers), Cellworks: http://cellworksgroup.com (systems biology approach to diseases and therapy), etc.

As student is building strength in computer science, as well as mathematical modeling through the biology courses, they can also find opportunities in IT companies that provide services and solutions to companies working Life Science, Medicine, etc. These can include: TCS Life Sciences,

StrandGenomics, ibtech: http://www.ibtechnology.com/ (http://www.optrahealth.com

An important career option for graduates of this program will be in Research – pursuing a PhD and then going for a research career. This is one of the most exciting possibilities, as R&D in Computational Biology and Life Sciences in general has great potential. Graduates of this program should be sought after by many computational and systems biology research groups across the world, including India. (To facilitate this option, the Institute will write to top departments in India and across the world and inform them about the strength of our program.)

Structure of the Program

The program will focus on strengthening key computer science capabilities needed for solving biology problems, and in developing skills in bio-informatics, techniques for modeling biological systems, analysis approaches for biological data, etc.

As this is an interdisciplinary program, it will have two basic courses in Computing and Biology to build the basic foundations in the two disciplines. These courses will be compulsory but will not count towards the credit requirement. These are:

- One intensive refresher course which will focus on strengthening background in Programming and Data Structures. (Most likely during the summer before the start of the first semester.)
- In their first semester, a course on "Foundations of Modern Biology" will be offered.

In the MTech program, the student will do 8 courses (in addition to the courses mentioned above) and a Thesis. The program will have 3 courses in computer science, which will strengthen capability in key areas of algorithms, programming, and parallel computing. These CS course are:

1. **Graduate Algorithms** (maybe with some Special Reading on Bioinformatics Algorithms)
   (OR) *It will be replaced by Algorithms in Molecular biology (see below).*
   (This course will deal with algorithm and complexity, greedy algorithms, exhaustive search algorithms, dynamic programming, divide and conquer algorithms, search trees, combinatorial pattern matching and randomized algorithms applied to molecular biology).

2. **Advanced Programming / practice of programming**

3. **High Performance computing /Machine Learning/Databases/Big-Data analytics (electives)**

The student will have to do 5 courses in Computational Biology – 2 or 3 will be compulsory, others will be electives. The required CB courses are [tentative]:

1. **Algorithms for Molecular Biology**
   (This course will deal with algorithm and complexity, greedy algorithms, exhaustive search algorithms, dynamic programming, divide and conquer algorithms, search trees,

combinatorial pattern matching and randomized algorithms applied to molecular biology). **Note that the contents of this course will be changed and it'll be most probably designed by Prof. Srinivas Aluru**.

2. **Practical Bioinformatics**
   (This course will provide practical hands on experience to analyze large scale data sets that comes from genomics. This course deals specifically with introduction to genomics, comparative genomics, evolution and genomic changes, Mapping sequencing and annotation of databases, NextGen sequencing, and network biology.)

3. **Systems and Synthetic Biology Possibly a foundational course to provide background for Sys Bio and other courses. A 2 credit course on cell biology may be given.**
   (This course will provide design principles governing biological networks. This includes introducing network motifs like feedforward and feedback loops that occurs recurrently in biological networks, gene regulatory networks, signal transduction network, chemotaxis, robustness and evolvability and introduction to mathematical modeling of these phenomena.)

4. **Mathematical modeling of biological systems** (called Intro to Mathematical Biology)
   The aim of this course is to introduce mathematics as applied in quantitative study of biological systems. Both exact and numerical solution of differential equations (ordinary and partial) will be discussed. Dynamical systems theory based analysis will also be part of this course. We will use these mathematical tools to address problems in basic biology as well as in technological applications.

The elective courses are given below – this list will change and expand over time.

1. **Stochastic Simulations in Systems Biology and Biophysics**
   This course will introduce students to stochastic simulation techniques as used in solving biological problems. Topics include theoretical basis of stochastic simulations and master equations, Monte Carlo simulations (as a tool to obtain solution of master equations), kinetic Monte Carlo approaches, cell-to-cell variability and single cell biology, hybrid simulation techniques as applied to solve problems in biology and immunology.

2. **Applied Pharmaceutical Structural Biology**
   (This course will teach how to solve practical problems in pharmacology, life sciences and bioinformatics using free software and databases relating to the structure of functional proteins and drug targets. The course will cover: Alignment sequences, database searching, techniques for prediction of secondary protein structure with computational tools and review of the Pfam and PROSITE databases. Techniques and methods for prediction of protein 3D structure: Background of molecular modeling and energy minimization. Tools for homology modeling of protein 3D structure and methods for validation of 3D structures. Practical exercises with the MODELLER software and structure validation with PROCHECK. The physical basis for molecular dynamic simulation. Exercises on molecular dynamic

simulations of proteins with Gromacs. Molecular docking and drug screening. Tools and applications relating to computer-aided drug design. Practical exercises with Autodock)

3. **Computational Neuroscience** (Bioimaging like fMRI is introduced)
   (This course is introduced to understand neuronal networks from dynamical systems point of view. Properties of single neurons and network of neurons will be understood through the traditional Hodgkin-Huxley models and its variants. This course also provides an understanding of various concepts like long-term potentiation, long-term depression, and their relationship to formation of memory etc.)

4. **Biostatistics**

5. **Biophysics**
   (This course is of more fundamental and theoretical in nature that covers diffusion, biological application of diffusion, dissipation and drive. Random walks, polymer conformation, friction and diffusion, Fluid mechanics, Friction in fluid, Reynolds number, basic thermodynamics, entropy, temperature and free energy. Entropic forces, Chemical forces and self-assembly, Cooperative transitions in macromolecules, cooperativity, helix-coil transition, allostery. Enzymes and molecular machines, Smoluchowski equation, Michaelis-Menten kinetics.)

Thesis: Student will be required to do a thesis in Computational Biology – there is no scholarly paper option.

Note: A subset of these courses will be used for Minor in CB for BTech students.

Intake of students for MTech (CB) program

Intake in interdisciplinary program is always a challenge. Often an interdisciplinary program can benefit from taking students from different backgrounds. As the program focuses on CB, but will build sufficient CS background for graduates to use CS tools and techniques for CB problems, it will require some background in these areas. It will be best if the incoming students have: (i) decent programming knowledge and (ii) good math background

With this, the eligibility criteria for input to this program is proposed as:

(1) B.Tech/BE in CS/IT/Math-and-Computing

Or

(2) B.Tech/BE in any other discipline and must have done in their programme:

- at least one computer programming course, and
- at least two mathematics courses

All applicant must have a valid GATE score (2014/2015). They must have a CGPA of at least 6.5 out of 10 or 65% in B.Tech/BE and 60% in all previous degree including 10+2.

IIIT-Delhi provides relaxation to SC, ST, OBC, PwD and CW category candidates. Specially, candidates under these categories must have CGPA of at lease 6.0 out of 10 or 60% in B.Tech/BE and 55% in all previous degree including 10+2.

Fee Waiver and Scholarships

The institute will reduce the overall MTech fee by half for students in the first batches. The Institute hopes to find scholarships for students through DBT.