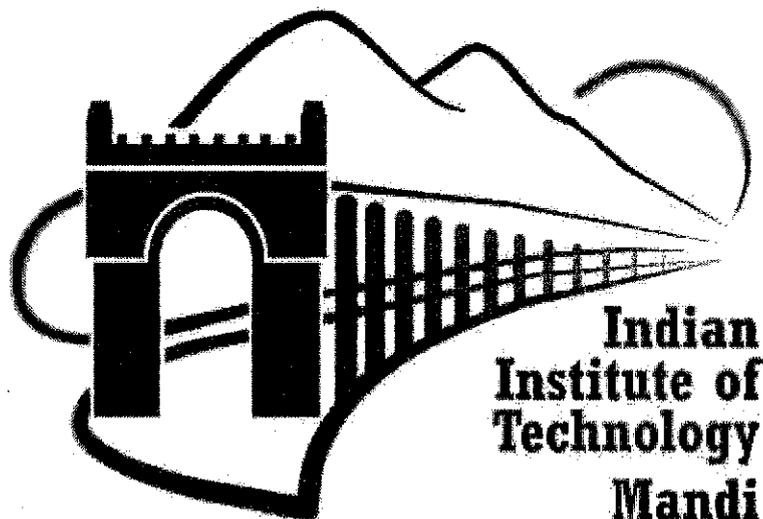


INDIAN INSTITUTE OF TECHNOLOGY MANDI
KAMAND, DISTT. MANDI – 175005 (HIMACHAL PRADESH)



MINUTES OF 25TH BOARD OF ACADEMICS MEETING

VENUE : A-4 CONFERENCE ROOM, KAMAND)
DATE : 31st, JULY 2018 (TUESDAY)
TIME : 04:00 P.M.

Following members attended the meeting

Sl.No.		Name	
1.	Dean Academics	Dr. Pradeep Parameswaran	Chairman
2.	Associate Dean (Research)	Dr. Venkata Krishnan	Member
3.	Associate Dean (Courses)	Dr. Anil Kumar Sao	Member
4.	Chairman Library Advisory Committee	Dr. Astrid Kiehn	Member
5.	Chairman Course Proposal Committee + Course Coordinator M.Sc. (Chemistry)	Dr. Chayan K Nandi	Member
6.	Course Coordinator (IC Courses)	Dr. Aniruddha Chakraborty	Member
7.	Course Coordinator (B.Tech.-CSE)	Dr. Dileep A D	Member
8.	Course Coordinator (B.Tech.-ME)	Dr. Arpan Gupta	Member
9.	Course Coordinator (B.Tech.-EE)	Dr. Shubhajit Roy Chowdhury	Member
10.	Course Coordinator (M.Tech.- (Energy Engg. (Materials))	Dr. Atul Dhar	Member
11.	Course Coordinator (M.Tech.-(Mechanical Engg. (Energy Systems))		Member
12.	Course Coordinator (M.Tech.-(Power Electronics and Drives)	Dr. Narsa Reddy Tummuru	Member
13.	Course Coordinator (M.Sc.-Applied Maths)	Dr. Nitu Kumari	Member
14.	Nominee-1: School of Engineering	Dr. Rajesh Ghosh	Member
15.	Nominee-2: School of Engineering	Dr. Venkata Uday Kala	Member
16.	Nominee-1: School of Computing & Electrical Engineering	Dr. Kunal Ghosh	Member
17.	Nominee-1: School of Basic Sciences	Dr. Syed Abbas	Member
18.	Assistant Registrar (Academics): Secretary	Mr. Suresh Rohilla	Member

Following members could not attend the meeting

Sl.No.		Name	
1	Course Coordinator (SHSS Courses) + Nominee (SHSS)	Dr. Shyamasree Dasgupta	Member
2.	Course Coordinator (B.Tech.-CE)	Dr. Deepak Swami	Member
3.	Course Coordinator (M.Tech.-(VLSI))	Dr. Satinder Sharma	Member
4.	Course Coordinator (M.Tech.-(Communication and Signal Processing))	Dr. Renu M Rameshan	Member
5.	Course Coordinator (M.Tech.-Biotechnology)	Dr. Shyam K Masakapalli	Member
6.	Course Coordinator (M.Sc.-Physics)	Dr. Chander Shekhar Yadav	Member
7.	Course Coordinator (I-Ph.D.(Physics))	Dr. Hari Varma	Member
8.	Nominee-2: School of Computing & Electrical Engineering	Dr. Aditya Nigam	Member
9.	Nominee-2: School of Basic Sciences	Dr. Prosenjit Mondal	Member
10.	Nominee-1: School of Humanities & Social Sciences	Dr. Suman Sigroha	Member
11.	Academic Affairs Secretary	Mr. Abhishek	Member
12.	Research Affairs Secretary	Mr. Ashish Tiwari	Member
13	Industry Member - 1	Dr. Nadeem Akhtar	Member

Special Invitee

Sl.No.	Name	
1.	Dr. Padnabhan Rajan	Asst. Prof., SCEE

PART-A

(Issues discussed by the BoA when the Student Members were present)

25.1 Confirmation of the minutes of 24th meeting of Board of Academics:

The minutes of 24th BoA meeting held on 19th April, 2018 was confirmed.

25.2 To consider approval of courses presented by the Course Proposal Committee (CPC):

The Chairperson, CPC presented the following four new courses for consideration and approval of BoA. After due deliberations, the BoA recommended these courses for approval of the Senate after minor modifications. The final course descriptions after incorporating the suggested changes are placed at Annexure-“A”:

Sl.No.	Course No.	Course Name	Credits	Proposed by	School
1	HS 510	Essentials of Entrepreneurship	3-0-0-3	Dr. Shyamasree Dassgupta	SHSS
2	HS 551	Financial Management	3-0-0-3	Dr. Puran Singh	SHSS
3	EE624P	Thesis Project Part I	0-0-16-08	Dr. Kunal Ghosh	SCEE
4	EE625P	Thesis Project Part II	0-0-34-17	Dr. Kunal Ghosh	SCEE

As HS 510 and HS 551 are being offered in the current semester, BoA permitted SHSS to offer these courses pending regular approval from the Senate in next meeting.

It was brought to the notice of the BoA that some clarity is required regarding allotment of course codes for 'Practicum' and 'Practical' type courses. Also proper nomenclature of these types of courses is required to reflect the nature of the course.

After deliberations, BoA constituted the following sub- committee to consider the above mentioned matters and make appropriate recommendations to BoA

- (i) Dr. Anil Kumar Sao, Associate Dean (Courses) : Chairperson
- (ii) Dr. Narsa Reddy Tummuru,
Course Coordinator (M.Tech. (Power Electronics and Drives)) : Member
- (iii) Dr. Dileep A D, Course Coordinator (B.Tech.-CSE) : Member



(iv) Chairman Course Proposal Committee : Member

(v) Course Coordinator M.Sc. (Chemistry) : Member

The sub- committee is requested to submit its recommendations before the next meeting of BoA.

25.3 To deliberate on addition of courses in Minor basket of Intelligent Systems:

Course coordinator, B.Tech, CSE proposed the inclusion of the following Senate approved courses in the Minor basket of Intelligent Systems. After due deliberations the BoA recommended inclusion of these courses in the course basket for Intelligent System and forwarded for Senate approval.

Sl.No.	Course No.	Course Name	Credits
1	CS660	Data Mining for Decision-making	3-0-0-3
2	EE511	Computer Vision	3-1-0-4
3	CS671	Deep Learning and Applications	3-0-2-4
4	CS670	Kernel Methods for Pattern Analysis	3-1-0-4
5	EE608	Digital Image Processing	3-0-2-4

25.4 To deliberate on the replacement of some IC Courses with a series of courses on Data Science for B.Tech students:

Dr. Padmanabhan Rajan presented a series of three courses on Data Science for undergraduate students. These courses, in sequence will introduce programming, the application of statistical models to draw conclusions from data, and introductory machine learning. The language of implementation will be Python. Several discussions with faculty members from SBS, SE and SCEE had preceded the design of these courses.

These three courses are intended to replace the earlier courses IC150 and IC150P (Computation for Engineers and its lab), IC250 (Programing and Data Structures) and IC210(Probability and Random processes).

The course content of the first Data Science course was presented before BoA. Members discussed the benefits and shortcomings of the course. The first course in the series is planned to start in September 2018. The course description is placed at Annexure-B.

BoA recommended the suggested changes in the IC courses in terms of the introduction of Data Science course in place of certain IC courses. The content of the first course presented in Annexure B is also and recommended for Senate approval.

25.5 To Any other item with the permission of the Chair:



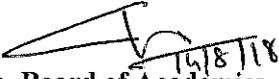
-NIL-

PART-B

(Issues discussed by the BoA without the Student Members being present)

-NIL-

The meeting ended with a vote of thanks to the Chair.


Chairman, Board of Academics


Secretary, Board of Academics

IIT Mandi
Proposal for a New Course

Course Number: HS-510
Course Name : Essentials of Entrepreneurship
Credits : 3-0-0-3
Prerequisites : Nil
Intended for : PhD/Masters/B.Tech. 3rd and 4th year
Distribution : Open Elective
Semester : Odd/Even

1. Preamble:

Building a sustainable and/or scalable business requires understanding of wide range of concepts, frameworks and business strategies. While technological changes and forces in business environment keep rendering many theoretical frameworks redundant, understanding of certain basics principles is a must. First generation entrepreneurs need to learn rules of the game so to not reinvent the wheel. The course will address elementary issues relating to idea screening, business model, marketing, handling money and team building. The course is designed to inculcate understanding of theory and practice of Entrepreneurship among students of varied disciplines so they can consider Entrepreneurship as a career option and / or develop an understanding of the nature of entrepreneurship, driving forces of new venture success, and challenges that face entrepreneurs with new ventures.

2. Course Modules with Quantitative Hours:

Module 1: Entrepreneurship Concepts [4 hours]

Understanding nuances of being an entrepreneur; Difference between a startup venture and small business; Identifying entrepreneurial styles

Module 2: Idea/Problem and Customer [12 hours]

Identifying problems worth solving, identifying business opportunities, methods for problem interviews; Design thinking process; Generation of potential solutions; Identifying customer segment and early adopters, difference between a consumer and a customer, craft your value proposition, outcome driven innovation, testing out solutions for the problems; Unique value proposition

Module 3: Business Model Validation [12 hours]

Basic lean approach and canvas, types of business models, documenting business plan with a lean canvas, documenting hypotheses; Introduction to risks; Develop solution demos; The problem-solution test, solution interviews, sizing the opportunity, building a minimum viable product; The product-market fit test; Revenue streams; How companies with different business models earn money; Understanding income, costs, gross and net margins; Identifying primary and secondary revenue streams; Costing and pricing; How to finance your business idea; Financing your venture at different stages, what investors expect from you; Various sources of funding and pros & cons of each

Module 4: Building a Resourceful Team [4 hours]

Shared leadership model, role of a good team in a venture's success, what to look for in a team, define clear roles and responsibilities; How to pitch to candidates to attract to join your team, explore collaboration tools and techniques - brainstorming, mind mapping; Kanban board

Module 5: Marketing, Sales and Support [10 hours]

Understanding the difference between product and brand and link between them; Product/service positioning; Channels and strategies, budgeting and planning; Sales planning, target setting; Unique sales propositions (USP); Follow-up and closing sale; Planning and tracking, importance of project management to launch and track progress; Understanding time management, workflow, delegation of tasks; Business regulations of starting and operating a business; Documentation, how to find help to get started; Various government scheme

3.Textbooks:

Blank, S. G., & Dorf, B. (2012). The startup owner's manual: The step-by-step guide for building a great company. Pescadero, Calif: K & S Ranch.

4.Reference:

Maurya, A (2016). Scaling Lean: Mastering the Key Metrics for Startup Growth. Portfolio/Penguin.

Sethi, A. (2016). From Science to Startup, Springer.

5.Similarity Content Declaration with Existing Courses

S.N.	Course Code	Similarity Content	Approx. % of Content
	NA		

6.Justification for new course proposal if cumulative similarity content is > 30%:
NA

Approvals:

Other Faculty interested in teaching this course: NA

Proposed by: Puran Singh, Satvasheel Powar **School:** SHSS, SE

Signature: _____ **Date:** _____

Recommended/Not Recommended, with Comments:

Chairman, CPC **Date:** _____

Approved/Not Approved

Chairman, Senate **Date:** _____

IIT Mandi
Proposal for a New Course

Course Number	: HS551
Course Name	: Financial Management
Credits	: 3-0-0-3
Prerequisites	: HS205 Financial Accounting or selected topics thereof suggested by instructor
Intended for	: PhD/Masters/BTech 3 rd and 4 th years
Distribution	: Discipline Elective for MA in Development Studies and free elective for others
Semester	: Odd/Even

1. Preamble:

Financial Management cuts through all theoretical barriers that separate disciplines in the sense that all organizations, be it for-profit or not-for-profit, require finance to function and must master the art of financial management to survive. While social enterprises need to focus on staying sustainable, corporate enterprises need to ensure that they make profits sufficient enough to fund their future growth. Further, not only the existing organizations, but also the ones to come up in future i.e. startups depend entirely upon financial viability of ideas they intend to bring about. It is in this context that one needs to learn fundamental principles of financial management which are mainly aimed at answering following three questions: Where to invest the funds? Where to get the funds from? What to do with profits earned?

In business, you are always faced with choices and you need to choose one of them over all others. Each choice has financial implications some of which are obvious while others are not so obvious. Evaluation of choices calls for an objective analysis. In this course, we learn to put a value to every choice that a corporate firm has in regular course of business. We attempt to acquire financial intuition embedded in financial decisions and learn the nitty-gritty of related strategic aspects.

2. Course Modules with Quantitative Hours:

Module 1: Introduction to Finance Function [6 Hours]

Corporate form of business, Reading financial statements, Financial decision making, Profit maximization versus wealth maximization debate, Time value of money, Interest rates, Term structure and yield curve

Module II: Investment Decisions [8 hours]

Valuations of projects and firms, Rules for investment decision making, Free Cash Flow calculation, Valuation of shares and bonds

Module III - Risk and Return [6 hours]

Introduction to capital market and risk pricing, Capital asset pricing model, Estimation of cost of capital: Cost of equity and debt

Module IV: Financing Decisions [6 hours]

Capital structure in perfect and imperfect markets, implication of debt and taxes on capital structure, Financial Distress, Managerial Incentives

Module V: Dividend Decisions [6 Hours]

Payout process and policies, Dividend versus share repurchase, Payout versus retention, Signaling with payout, Taxes and dividend

Module VI: Short Term Financial Decisions [4 Hours]

Short term financial planning: Tools for working capital management, cash management and inventory management

Module VII: Strategic Financial Decisions [6 Hours]

Initial public offers, Strategic alternatives in Mergers and acquisitions, Debt Securitization, Corporate restructuring, Corporate governance

3. Textbooks:

“Financial Management”, Berk, DeMarzo and Thampy, Indian Subcontinent Edition, Pearson Education (India), 2010

4. Reference:

“Financial Management: Theory and Practice”, Prasanna Chandra, 8th edition, McGraw Hill Education (India), 2012

“Case Problems in Finance”, Kester, Ruback and Tufano, 12th edition, McGraw Hill, 2008

“Case Studies in Finance: Managing for Corporate Value Creation”, Robert F. Bruner, McGraw Hill International Edition, 2006

5. Similarity Content Declaration with Existing Courses

S.N.	Course Code	Similarity Content	Approx. % of Content
	NA		

6. Justification for new course proposal if cumulative similarity content is > 30%:

NA

Approvals:

Other Faculty interested in teaching this course:

Proposed by: Puran Singh **School:** SHSS

Signature: _____ **Date:** _____

Recommended/Not Recommended, with Comments:

----- **Date:** _____

Chairman, CPC

Approved/Not Approved

----- **Date:** _____

Chairman, Senate



IC152 Computing and Data Science

Credits : 3-0-2-4

Prerequisite: Institute core/consent of faculty member

Students intended for: B.Tech

Elective or Core: Institute Core

Semester: Odd

Course objective: The first course in computing is a core course to all engineering disciplines as the use of computers in every engineering discipline requires mastering efficient computing for problem solving. Computers are used for mathematical analysis, data analysis, numerical problem solving, communications, and for many specialized applications.

Many engineering applications being are becoming largely data driven. Inexpensive sensors can be found in engines, mobile phones, home appliances and more elaborate ones in various measuring equipment like seismographs or medical equipment. Large corporations collect large amounts of user data from various online frameworks (like social media, emails etc.). Many businesses offer customized services to their customers based on data analysis. In this regard, an exposure to the science of data analysis would permit students to appreciate this paradigm.

This course is the first on a three-course series on computation, data science, statistics and introductory machine learning.

Course Content:

- Introduction: History, basic structure of a computer, network of computers [3 lec] ● Program = Algorithms + Data, programs as a sequence of instructions Levels of programming: high-level language, medium-level language, machine language, interpreted and compiled languages [2 lec]
- Memory: variables, types, scalar, composite types, arrays/lists, expressions [3 lec]
- Functions: scope of variables, code reuse, call frame and call stack, arguments, return values [3 lec]
- Control flow: decisions, iterations [3 lec]
- Data structures and objects: lists, dictionaries, NumPy arrays, strings [8 lec]
- File I/O, command line arguments [3 lec]
- Data visualisation: plotting functions, making use of colour, geographical data [4 lec]
- Program development: Testing, test cases, debugging, program efficiency [3 lec]
- Case studies: Modeling using statistics, curve fitting, interpolation, histograms, classification, correlation: [6 lec]
- Quizzes, review etc: [3 lec]

Text books

1. Python Programming for the Absolute Beginner, Michael Dawson, Third Edition Course Technology PTR (Chapter 1-7)
2. The Python Workbook: A Brief Introduction with Exercises and Solutions, 2014 Edition
3. Python Data Science Handbook, Jake Vanderplas (Chapters 1-4)
4. How to solve it by computer, R. G. Dromey, Pearson, 1982
5. V. A. Spraul, Think Like a Programmer: An Introduction to Creative Problem Solving, No Starch Press, 2012 (Soft-copy available from the Library website)

References

1. How to Think Like a Computer Scientist: Learning with Python, Allen Downey, Jeffrey Elkner, Chris Meyers, Green Tea Press (Chapter 1-9, Chapter 11)
2. Python for probability, statistics and machine learning, Jose Unpingco, Springer.

