

2015-2019

Dept. of Applied Sc.
16/7/2015.

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BOS meeting

On 16th July 2015, BOS meeting was conducted as Applied science department. Following subject syllabi were discussed

- 1) Chemistry - New syllabus will be implemented from July 2015. for F.Y. B.Tech. level elective syllabi were discussed
- 2) Institute level elective syllabi were suggested by experts.
- 1) AEM - 2nd year SYBTech
- 2) AILM - 2nd year — " —
- 3) Energy materials — T.Y. B.Tech.
- 4) Polymer Technology — B.Tech.
- 5) Lubrication Technology. — B.Tech.
- 6) ^{chemistry of} Batteries & fuel cells — B.Tech.
- 3) Communication skills - New syllabus will be implemented from July 2015 for FY BTech.

Following members were present for the meeting.

1) Dr. I. S. Mulla

Mulla

15.7.16

Athawale

2) Dr. Anjali Athawale.

3) Dr. Z. N. Patil

Patil

4) Dr. J. A. Kher

Kher

5) Dr. M. Y. Khaladkar

Khaladkar

6) Dr. K. S. Suranje

Suranje

7) Mrs. N. V. Iyer

Iyer

8) Mr. P. ^V ~~A~~ Lele.

Lele

9) Mrs. A. S. Khandekar

Khandekar

10) Mr. A. B. Patil.

Chemistry
2015-19

The DUPC Meeting was held on 9 April 2015 at the Applied Science Department
in the presence of the following :

Imtiaz Mulla

Honorable Dr. Imtiaz Mulla

Member BOS Applied Science

& Senate member

List of DUPC members

1. Dr. Jayant. A. Kher
(Head Applied Science Dept.)
2. Dr. Manisha. Y. Khaladkar
3. Mrs. Nandini V. Iyer
4. Dr. Kavita S. Suranje

Signature

J. A. Kher

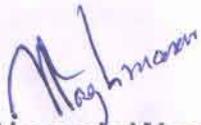
M. Y. Khaladkar

Nandini

The Syllabus for Intellectual Property Rights and Constitution of India
Validated / Audited by –

- 1) Dr. Naresh Waghmare
Associate Professor
- 2) Adv. Prafulla Patil

with few suggestions which shall be incorporated from the SEM
commencing from July 2018.



Dr. Naresh Waghmare
Associate Professor



Adv. Prafulla Patil

MLC-503 INTELLECTUAL PROPERTY RIGHTS

Teaching Scheme:-

Lectures: 1 hr/week

Examination Scheme

End-Sem Exam- 50 marks

Unit 1

(02)

Introduction to the concepts Property and Intellectual Property

Nature and Importance of Intellectual Property Rights

Objectives of understanding Intellectual Property Rights

IPR and IITs

Unit 2

(04)

Understanding the types of Intellectual Property Rights: -

Patents, Designs, Trademarks (Registered and unregistered trademarks)

Copyright , Traditional Knowledge , Geographical Indications , Trade Secrets ,

Idea Patenting, (Case Studies)

Unit 3

(03)

New Developments in IPR

Process of Patenting and Development: technological research, innovation, patenting, development....

International Scenario:

WIPO , TRIPs

Unit 4

(03)

Indian Patent Office and its Administration

Administration of Patent System –

Patenting under Indian Patent Act

Patenting under PCT

Unit 5

(03)

Patent Rights and its Scope, Licensing and transfer of technology,

Patent information and database.

Provisional and Non Provisional Patent Application and Specification

ML - 09001 CONSTITUTION OF INDIA

Teaching Scheme
Lectures : 1 hr/week

Evaluation Scheme
Continuous evaluation-
Assignments/Quiz/Test

Unit 1

(02 hrs)

Understanding the concept 'Rule of Law'

Meaning and history of Constitution.

Understanding the concept of Human Rights and Fundamental Rights.

Unit 2

(03 hrs)

Introduction to The Constitution of India, understanding its objects.

Preamble to the constitution of India.

Unit 3

(02hrs)

Fundamental rights under Part – III, exercise of the Rights, limitations and important cases.

Unit 4

(02hrs)

Fundamental duties & their significance.

Relevance of Directive principles of State Policy.

Unit 5

(02hrs)

Legislative, Executive & Judiciary (Union and State Level)

Prerogative Writs.

Unit 6

(02hrs)

Constitutional Provisions for Scheduled Castes, Scheduled Tribes, &
Backward classes.

Constitutional Provisions for Women & Children

Unit 7

(02hrs)

Emergency Provisions.

Electoral procedure in India

Amendment procedure and few important Constitutional Amendments

Applied Science Department

Academic audit

Personnel Psychology course (ILOE T.Y.B.Tech)

16/07/2018

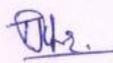
Academic audit for Personnel Psychology course (ILOE T.Y.B.Tech) was done on Monday, 16th July 2018. Prachi Thorat has worked as an expert for this activity. Her suggestions are incorporated in the syllabus for part I and II for academic year 2018-19.

Planning of different activities and assignments and sequence of units were also discussed and made changes accordingly to execute the course in the effective manner.

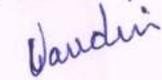
Expert


(Prachi Thorat)

Course faculty


(Tanuja Kher)

I/c HOD


(N.V. Iyer)

Personnel Psychology (I) - 2017-18

T. Y. B. Tech

ILOE

Teaching Scheme- 2 Lectures per week

Examination Scheme-
3 Assignments for 60 marks
End semester of 40 marks

Objectives:

1. To enable to understand basic concepts in organizational set up.
2. To create awareness about corporate world and efficacy of employee.
3. To understand importance of groups and its dynamics
4. To understand the importance of self management

Course Outcomes

- a. Students will have understanding of organizational concepts and behavior.
- b. Students will have understanding about their own personality for corporate world.
- c. Students will understand importance of groups and its dynamics.
- d. Students will understand the importance of self management and development.

Course Content-

Unit 1- Introduction- Basic concepts in Organizational set up and its importance	2hrs
Unit 2- Personality and corporate world- Know and accept you. Preparing for corporate world, approaches towards work	8hrs
Unit 3- Group behavior and leadership.- Group behavior and effectiveness, Effective Leadership and management principles	8hrs
Unit 4- Self management & development- Efficient working habits, self training and self development	4hrs

Text Books:

1. Khana S.S.- (2016) Organizational Behaviour(Text and Cases) Chand and company Pvt. Ltd. Delhi.
2. Rae Andr'e :- (2008) organizational behavior. Dorling Kindersley (India) Pvt. Ltd.
3. Wallace Hand Masters L.- (2008) Personality development..Cengage Learning India Pvt. Ltd.

Referece books:

1. Robbins S, JudgeA, Vohra N:- (2013)Organizational behavior.(15th ed) Pearson Education,Inc.
2. Singh Kavita:- (2010) Organizational behavior-Text and cases. Dorling Kindersley (India) pvt. Ltd.

Personnel Psychology (I) 2018-19

T. Y. B. Tech

ILOE

Teaching Scheme- 2 Lectures per week

Examination Scheme-
3 Assignments for 60 marks
End semester of 40 marks

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Course Content-

Unit 1- Introduction- Basic concepts in Organizational set up and its importance	2hrs
Unit 2- Personality and corporate world- Know and accept you. Preparing for corporate world, approaches towards work	8 hrs
Unit 3 - Motivation- Self motivation and motivating others in their job	4hrs
Unit 4- Self management & development- Efficient working habits, self training and self development	4hrs

Text Books:

1. Khana S.S.- (2016) Organizational Behaviour(Text and Cases) Chand and company Pvt. Ltd. Delhi.
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3. Wallace Hand Masters L.- (2008) Personality development..Cengage Learning India Pvt. Ltd.

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2. Singh Kavita:- (2010) Organizational behavior-Text and cases. Dorling Kindersley (India) pvt. Ltd.

Personnel Psychology (II) 2017-18
T. Y. B. Tech
ILOE AS- (17012)

Teaching Scheme- 2 Lectures per week

Examination Scheme-
3 Assignments for 60 marks
End semester of 40 marks

Objectives:

1. To understand importance of motivation
2. To understand importance of standards of conduct.
3. To understand ways of successful career
4. To make students aware about stressors and conflicts at workplace and their management.

Course outcomes-

- a. Students will understand importance of motivation.
- b. Students will be able to realize importance of standards of behavior at work place.
- c. Students will get guide lines to achieve workplace success.
- d. Students will enable to manage stress and conflict in their personal life and at workplace.

Course Content -

Unit 1- Motivation- Self motivation and motivating others in their job	4hrs
Unit 2 - Emotional Intelligence & values- Emotional intelligence and Standards of conducts	4hrs
Unit 3 - Work place success - Setting goals, performance appraisal and moving ahead	8hrs
Unit 4- Stress & conflict management at work place- Occupational stress and conflict, strategies for stress and conflict management	6hrs

Text Books:

1. Khana S.S.- (2016) Organizational Behaviour(Text and Cases) Chand and company Pvt.Ltd.Delhi.
2. Rae Andr'e :- (2008) organizational behavior. Dorling Kindersley(India) Pvt. Ltd.
1. Wallace H.and Masters L.- (2008) Personality development..Cengage Learning India Pvt. Ltd.

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1. Robbins S, JudgeA, Vohra N:- (2013)Organizational behavior.(15th ed) Pearson Education,Inc.
2. Singh Kavita:- (2010) Organizational behavior-Text and cases. Dorling Kindersley (India) pvt. Ltd.

Personnel Psychology (II) 2018-19
T. Y. B. Tech
ILOE AS- (17012)

Teaching Scheme- 2 Lectures per week

Examination Scheme-
3 Assignments for 60 marks
End semester of 40 marks

Objectives:

1. To understand importance of motivation
2. To understand importance of standards of conduct.
3. To understand ways of successful career
4. To make students aware about stressors and conflicts at workplace and their management.

Course outcomes-

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- c. Students will get guide lines to achieve workplace success.
- d. Students will enable to manage stress and conflict in their personal life and at workplace.

Course Content -

Unit 1- Group behavior and leadership.- Group behavior and effectiveness, Effective Leadership and management principles	8 hrs
Unit 2 - Emotional Intelligence and Work place success.	4hrs
Unit 3 - Work ethics and human values. Performance appraisal	5hrs
Unit 4- Stress & conflict management at work place- Occupational stress and conflict, strategies for stress and conflict management	6hrs

Text Books:

1. Khana S.S.- (2016) Organizational Behaviour(Text and Cases) Chand and company Pvt.Ltd.Delhi.
2. Rae Andr'e :- (2008) organizational behavior. Dorling Kindersley(India) Pvt. Ltd.
1. Wallace H.and Masters L.- (2008) Personality development..Cengage Learning India Pvt. Ltd.

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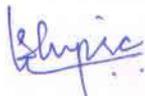
A Report of the Academic Audit conducted for ILOE Industrial Psychology (I & II) for AY 2018-19

The Academic Audit for the ILOE course Industrial Psychology [I & II, AS (ILE)- 17004], which is offered to TYBTech (all branches) was conducted on July 21, 2018 at 3:30 pm in the Department of Applied Sciences. Ms. Gandhali Kulkarni was invited as an expert for the same. She holds a Masters degree in Industrial Psychology from SPPU and an MS in Work & Organizational Psychology and HR Management from Complutense University of Madrid (Spain). Having worked as a consultant in the field for several companies like Volkswagen, Raj Process Equipments, Cisco Systems, Wipro, etc. she was a perfect match to provide inputs based on her corporate experience.

The current syllabus, teaching methodology, assessment techniques, along with the question papers were shared and she reviewed all the documents scrupulously. Following is the summary of her feedback and recommendations:

1. The syllabus is well designed and tries to cover several relevant topics from the vast domain of Industrial Psychology, and yet keeps it exclusive or Engineering students
2. The assessment techniques are well planned and executed keeping in mind application and relevance in the students' forthcoming corporate life
3. Few suggestion were made regarding topics to be included in some chapters, which are otherwise not found in the text books but take place in the industry, e.g. development plan for employees (performance appraisal), satellite teams (leadership), organizational culture and e-learning (workplace characteristics), etc.
4. Use of case studies was highly recommended for several topics and she offered assistance in providing Indian case studies so that real examples could be given in the class
5. Some topics which the students must know but they could not immediately relate to were discussed (career development and planning, organizational training, etc.) and the expert offered to take sessions on such topics as Guest faculty, which is a must for effective course completion.

Overall, the Academic Audit was a success and truly served the purpose. All recommendation would be incorporated in the forthcoming classes for academic year 2018-19.



Dr. Kshipra Moghe

Course Coordinator & Faculty In charge- Industrial Psychology (I & II)

Assistance Professor In Psychology

Department of Applied Science, CoEP

INDUSTRIAL PSYCHOLOGY-I
ILOE (T.Y.B.Tech.) AS(ILE)- 17004

Teaching Scheme

Lectures: 2hrs/week

Examination Scheme

Total Marks: 100

Project: 40

End Semester Exam: 60

Course Education Objectives (CEO)

1. To introduce the essentials of psychology at workplace and gain insights about work place behavior
2. To understand the psychological functionality of an organization and employability of engineers in the 21st century
3. To learn and apply the elements of Psychology at interpersonal relationships at work place and elsewhere

Course Outcomes (CO)

- a) Students will be able to outline the nature, scope, and challenges of Industrial Psychology
- b) Students will be able to illustrate the psychological factors that influence individual differences in behaviour at work
- c) Students will be able to explain the concepts of motivation and job satisfaction
- d) Students will be able to classify and utilize their knowledge In Psychology in the process of employment
- e) Students will be able to make use of the information required to sustain employability

Unit 1: Introduction to Industrial Psychology

[6 hrs]

1.1 Nature and Development of Industrial/Work Psychology

1.2 Historical background- Scientific Management, Time and Motion Study, Hawthorne Studies, World War I & II

1.3 Scope & Challenges: Current status

Unit 2: People at Work

[8 hrs]

2.1 Individual Differences: Personality, Intelligence, Emotional Intelligence, Creativity & Innovation, Perception & Attitudes

2.2 Motivation- N-Ach, Expectancy Theory & Equity Theory, Modern Approach to Motivation

2.3 Job Satisfaction- Job Diagnostic Model, Measuring Job Satisfaction

2.4 Psychometric Testing at Work- Cognitive Abilities, Personality, Emotional Intelligence

Unit 3: Managing People at Work-I

[8 hrs]

- 3.1 Employee Selection- Techniques, Fair Employment Practices,
- 3.2 Biographical Information, Interviews, References & Letters of Recommendation
- 3.3 Job Analysis- Types, Newer Developments

Unit 4: Managing People at Work-II

[4 hrs]

- 4.1 Performance Assessment: Evaluation & Appraisal- Objective & Subjective Techniques, Bias in Appraisals, Development Plans
- 4.2 Organizational Training- Types of Training, Psychological Issues
- 4.3 Career Development & Planning

Text Books:

1. Schultz, D. & Schultz, S. E. (2013). *Psychology and Work Today: An Introduction to Industrial and Organizational Psychology*. 7th Edition. Pearson Education: New Delhi.
2. Matthewman, L., Rose, A. & Hetherington, A. (2009). *Work Psychology*. Oxford University Press: India.
3. Wickens, C. D.; Lee, J. D., Liu, Y. & Gordon Becker, S. E. (2015). *An Introduction to Human Factors Engineering*. 2nd Edition. Pearson Education: New Delhi.

References:

1. Landy, F. J. & Conte, J. M. (2010). *Work in the 21st Century: An Introduction to Industrial and Organizational Psychology*. 2nd Edition. Wiley India: New Delhi.
2. Schultz, D. & Schultz, S. E. (2002). *Psychology and Work Today*. Pearson Education: New Delhi.

INDUSTRIAL PSYCHOLOGY-II
ILOE (T.Y.B.Tech.) AS(ILE)- 17004

Teaching Scheme

Lectures: 2hrs/week

Examination Scheme

Total Marks: 100

Assignments/Activity: 40

End Semester Exam: 60

Course Education Objectives (CEO)

1. To introduce the essentials of psychology at workplace and gain insights about work place behavior
2. To understand the psychological functionality of an organization and employability of engineers in the 21st century
3. To learn and apply the elements of Psychology at interpersonal relationships at work place and elsewhere

Course Outcomes (CO)

- a) Students will be able to explain the elements of organizational culture for enhancing group/team behaviour and leadership
- b) Students will be able to summarize and experiment with their knowledge about diversity in workforce and acknowledge the multicultural factors influencing workplace behaviour
- c) Students will be able to spell out the physical and psychological aspects of workplace in terms of environmental conditions, safety, health and stress and apply coping strategies to strike work-life balance
- d) Students will be able to make use of their knowledge about consumer behaviour in designing products at work
- e) Students will be able to outline the role of human factors in designs that promote man-machine harmony and experiment with the concepts of Engineering Psychology with respect to their disciplines

Unit 1: Groups at Work

[8 hrs]

1.1 Relationships- At workplace, Issues, Developing Effective Relationships

1.2 Groups & Teams- Stages of Group Development, Group Behaviour, Social Identity Theory, Introduction to Organizational Culture

1.3 Leadership- New Approaches- Leader-Member Exchange, Transactional, Transformational & Charismatic Leaderships

1.4 Diversity at Workplace- Cultural Differences (Multiculturalism, Psychometric Testing, Motivation, Work-related Attitude, Leadership, Team work, etc.)

Unit 2: Characteristics of Workplace

[6 hrs]

- 2.1 Working Conditions- Physical & Psychological
- 2.2 Stress at Workplace- Individual Responses to Stress; 3 Cs of Stress- Causes, Consequences & Coping with Work Stress
- 2.3 Safety & Health Practices at Workplace- Accidents, Violence, Harassment, Alcoholism & Drug

Unit 3: Consumer Psychology

[8 hrs]

- 3.1 Scope & Research Methods- Surveys, Public Opinion Polls, Focus Groups, Observations of Shopping Behaviour, Neuromarketing
- 3.2 Advertising- Nature, Scope & Types
- 3.3 Consumer Behaviour & Motivation- Buying Habits, Product Pricing, Targeted Advertising
- 3.4 Visual Merchandising- Psychological Perspective- Techniques, Impulse Buying, Online Visual Merchandising

Unit 4: Engineering Psychology

[4 hrs]

- Brief History and Scope
- 4.1 Background, Person-Machine Systems- Basic Human Factors: Sensory systems- Visual (light, colour, night vision, depth perception), Auditory (sound, alarms, noise), Tactile & Vestibular senses
 - 4.2 Displays: Visual & Auditory; Control
 - 4.3 Workspace Designs- General Principles, Design of Standing & Seating Work Areas; Human Anthropometry- Human Variability

Text Books:

1. Schultz, D. & Schultz, S. E. (2013). *Psychology and Work Today: An Introduction to Industrial and Organizational Psychology*. 7th Edition. Pearson Education: New Delhi.
2. Matthewman, L., Rose, A. & Hetherington, A. (2009). *Work Psychology*. Oxford University Press: India.
3. Wickens, C. D.; Lee, J. D., Liu, Y. & Gordon Becker, S. E. (2015). *An Introduction to Human Factors Engineering*. 2nd Edition. Pearson Education: New Delhi.

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1. Landy, F. J. & Conte, J. M. (2010). *Work in the 21st Century: An Introduction to Industrial and Organizational Psychology*. 2nd Edition. Wiley India: New Delhi.
2. Schultz, D. & Schultz, S. E. (2002). *Psychology and Work Today*. Pearson Education: New Delhi.

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23rd July, 2018

The Director
College of Engineering Pune
Shivajinagar, Pune 5

Dear Sir,

Report on the academic audit conducted for the review of syllabi

We, at the Department of Applied Sciences, conducted an academic audit for the following courses:

- 1) Professional Communication (F.Y.B.Tech.)
- 2) English Proficiency- I & II (T.Y.B.Tech.)

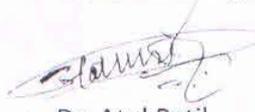
The experts for the academic audit were Professor Dr. Z. N. Patil, Retd. Professor of English, English and Foreign Languages University, Hyderabad and Professor Dr. Shridhar Gokhale, Retd. Professor of English, Department of English, Savitribai Phule Pune University. The meeting was quite fruitful as both the experts shared their ideas on making the syllabi of both these courses more effective that will meet the requirements of our students.

We are forwarding receipts of honorarium for your approval.

We thank you for providing an opportunity to get our syllabi reviewed from these experts.

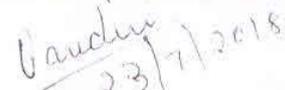
Thank you.

Yours sincerely,



Dr. Atul Patil
Assistant Professor
Dept. of Applied Sciences
College of Engineering Pune

Forwarded through:



Ms. Nandini Iyer
I/C Head
Dept. of Applied Sciences
College of Engineering Pune

Encl.: Receipts for honorarium

Academic Audit

Date :- 28/07/2018.

Place :- Academic Complex Conference Room.

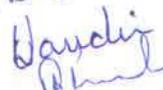
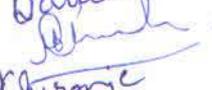
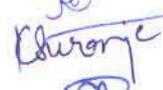
Academic ~~com~~ Audit conducted for

following subjects :

- 1) F.Y.-B. Tech - Applied Chemistry
- 2) S.Y.-B. Tech - Advance Engineering Materials.
- 3) B.Tech ILOE - polymer Technology, Lubrication Technology.

The course content, conduct & evaluation is found to be satisfactory. suggestions like introduction of tutorials, new experiments, guest lectures, more assignments will make the course better & more interesting.

Meeting ~~was~~ attended by :

1. Prof. Pradeepkumar - IITB 
2. Dr. Venket Iyer - Dow chemicals 
3. Dr. Rahul Patil - Halliberton 
4. Mrs. Nandini Iyer - 
5. Dr. M.Y. Khaladkar - 
6. Dr. K.S. Suranje 
7. Dr. Deepika Agawal 
8. Dr. Ganesh Agawane - 

Academic Audit at Applied Science Department for subjects related to Chemistry

Date: 28/07/2018 Time: 11 a.m. onwards

Place: Conference-room ,academic Complex, 4th Floor.

Members:

- 1) Prof. Pradeepkumar P I , Professor, Department of Chemistry, IITBombay, Powai - Member Higher learning Institute, Subject Expert
- 2) Dr. Venkat Iyer , Dow Chemicals India Pvt. Ltd. Mumbai, Industry Member
- 3) Dr. Rahul Patil, Halliburton India Ltd., Pune, Industry Member,
- 4) Mrs. Nandini Iyer, I/C Head, Applied Science Dept.
- 5) Dr. M Y Khaladkar, Associate Prof. of Chemistry
- 6) Dr. Kavita Suranje, Assistant Prof., Chemistry
- 7) Dr. Deepika Agarwal, Assistant Prof., Chemistry
- 8) Dr. Ganesh Agawane, Assistant Prof., Chemistry

Academic Audit was conducted for following subjects:

- F Y B Tech: Chemistry
- S Y B Tech ILOE-Advance Engineering Materials
- B Tech ILOE: Polymer Technology, Lubrication Technology

General Comments:

All the course objectives are well defined and are in alignment with POs of various programs offered by different departments and are in tune with Institute Goals, Vision and Mission.

Following issues were discussed at length:

- As new academic iteration will begin for F Y B Tech next year, whether we want to completely change the syllabus or partly change it ?
- The present syllabus is not very challenging for faculty and not very interesting for students. How can we change the scenario?

Suggestions:

- a) To improve student participation and self learning few topics should be left to students for group discussion, presentation, assignment - Water technology and Corrosion
- b) Practical based on Water analysis to be reduced and clubbed as 1/2 experiments or changed to water analysis using portable instrument or water purification using modern techniques
- c) For Topics like Nonmaterial and Polymer some demonstrations or hands on experiments to be included , use of Khan academy , virtual lab for polymer characterization, Coursera to be encouraged

d) Some academic weightage to be assigned for class participation from internal T1 and T2 component to ensure two way interaction and it will also stimulate student interest in self learning
e) Challenging assignment like 'Innovations that have revolutionized the world' to be given as part of T1.

f) Every month a guest lecture to be conducted by industry experts based on topics related to syllabus unit which is being conducted in different classes. Few indicative topics and suggested speakers are given below:

- Innovations in Chemistry and their impact on Engineering and Technology: Dr Rahul Patil - During Student Induction program
- Safety and GLP in Industry- Dr Sunil Pande - Dr Rahul Patil will co-ordinate - August end
- Membrane base water technology Eco labs- Dr Soumil Mehta- (Dr. Venkat Iyer will co-ordinate - September)
- Corrosion- Mechanical /Automobile Industry expert- to be searched (September)
- Polymers, smart jells , sensors - Dr Anjali Athawale(October)
- Nano materials and nanotechnology- (November)

g) Tutorial to be introduced for assignments, problem solving in a smaller , wearing lab coat, safety goggles and shoes to be made compulsory

h) Whether pure or applied Chemistry to be taught to F Y B tech should be decided and next syllabus should be finalized by December 2018.

i) Every year 1/2 new experiments to be introduced and old ones to be deleted.

j) Inexpensive analytical instruments like IR spectrophotometer, Viscosity /rheology, polymer extruder, Spectrophotometer, Ph meter to be purchased (at least one per year from equipment / R&D grant. Industries to be contacted for old working instruments of as part of their CSR activities.

Polymer Technology course:

- a) Emphasis on polymer characterization techniques should be given(Chapter3 of syllabus)
- b) As these are mature students, they should read and review one research paper and present it as part of T1/T2 assignment
- c) Commercially important polymers, leading manufacturers and polymerization processes used in industry should be discussed
- d) Impact of polymers on environment should be taken as group discussion e.g whether complete ban on plastics is advisable what is the carbon and water footprint of other alternatives (like paper) really acceptable.
- e) Check regulations for polymer and silicon base polymer for health and environment safety/hazard .

These minutes are generated for internal circulation and submission to Academic quality monitoring committee.

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Commented [PP2]: Introduced preferably from the Journal of Chemical education

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Commented [PP4]: pH

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N.V. IYER

Academic Audit at Applied Science Department for subjects related to Chemistry

Date: 28/07/2018 Time: 11 a.m. onwards

Place: Conference-room ,academic Complex, 4th Floor.

Members:

- 1) Prof. Pradeepkumar P I , Professor Department of Chemistry, IITBombay, Powai - Member Higher learning Institute, Subject Expert
- 2) Dr. Venkat Iyer , Dow Chemicals India Pvt. Ltd. Mumbai, Industry Member
- 3) Dr. Rahul Patil, Halliburton India Ltd., Pune, Industry Member,
- 4) Mrs. Nandini Iyer, I/C Head, Applied Science Dept.
- 5) Dr. M Y Khaladkar, Associate Prof. of Chemistry
- 6) Dr. Kavita Suranje, Assistant Prof., Chemistry
- 7) Dr. Deepika Agarwal, Assistant Prof., Chemistry
- 8) Dr. Ganesh Agawane, Assistant Prof., Chemistry

Academic Audit was conducted for following subjects:

- F Y B Tech: Chemistry
- S Y B Tech ILOE-Advance Engineering Materials
- B Tech ILOE: Polymer Technology, Lubrication Technology

General Comments:

All the course objectives are well defined and are in alignment with POs of various programs offered by different departments and are in tune with Institute Goals, Vision and Mission.

Following issues were discussed at length:

- As new academic iteration will begin for F Y B Tech next year, whether we want to completely change the syllabus or partly change it ?
- The present syllabus is not very challenging for faculty and not very interesting for students. How can we change the scenario?

Suggestions:

- a) To improve student participation and self learning few topics should be left to students for group discussion, presentation, assignment - Water technology and Corrosion
- b) Practical based on Water analysis to be reduced and clubbed as 1/2 experiments or changed to water analysis using portable instrument or water purification using modern techniques
- c) For Topics like Nonmaterial and Polymer some demonstrations or hands on experiments to be included , use of Khan academy , virtual lab for polymer characterization, Coursera to be encouraged

d) Some academic weightage to be assigned for class participation from internal T1 and T2 component to ensure two way interaction and it will also stimulate student interest in self learning

e) Challenging assignment like 'Innovations that have revolutionized the world' to be given as part of T1.

f) Every month a guest lecture to be conducted by industry experts based on topics related to syllabus unit which is being conducted in different classes. Few indicative topics and suggested speakers are given below:

- Innovations in Chemistry and their impact on Engineering and Technology: Dr Rahul Patil - During Student Induction program
- Safety and GLP in Industry- Dr Sunil Pande - Dr Rahul Patil will co-ordinate - August end
- Membrane base water technology Eco labs- Dr Soumil Mehta- (Dr. Venkat Iyer will co-ordinate - September)
- Corrosion- Mechanical /Automobile Industry expert- to be searched (September)
- Polymers, smart jells , sensors - Dr Anjali Athawale(October)
- Nano materials and nanotechnology- (November)

g) Tutorial to be introduced for assignments, problem solving in a smaller , wearing lab coat, safety goggles and shoes to be made compulsory

h) Whether pure or applied Chemistry to be taught to F Y B tech should be decided and next syllabus should be finalized by December 2018.

i) Every year 1/2 new experiments to be introduced and old ones to be deleted.

j) Inexpensive analytical instruments like IR spectrophotometer, Viscosity /rheology, polymer extruder, Spectrophotometer, Ph meter to be purchased (at least one per year from equipment / R&D grant. Industries to be contacted for old working instruments of as part of their CSR activities.

Polymer Technology course:

a) Emphasis on polymer characterization techniques should be given(Chapter3 of syllabus)

b) As these are mature students, they should read and review one research paper and present it as part of T1/T2 assignment

c) Commercially important polymers, leading manufacturers and polymerization processes used in industry should be discussed

d) Impact of polymers on environment should be taken as group discussion e.g whether complete ban on plastics is advisable what is the carbon and water footprint of other alternatives (like paper) really acceptable.

e) Check regulations for polymer and silicon base polymer for health and environment safety/hazard .

These minutes are generated for internal circulation and submission to Academic quality monitoring committee.

COURSE AUDIT

TYBTech

Course Title: German Language-I and German Language-II

Course Code: German Language-I- AS (ILE)-17007

Credits-02

Course Audit Dates: 16th August 2018

Course Auditors: Ms. Prachi Kulkarni

The Audit for the course of German Language-I and German language-II for Third Year BTech (all branches) was conducted at the department of Applied Sciences. The old syllabus was reviewed and analyzed by the expert. As per the suggestions given by the experts, the syllabus has been revised.

Suggestions:

1. Changes were suggested in the contents of a unit. Titles and Number of units remained same.
2. Ideas were brainstormed and changes were suggested in assignments and the examination scheme as 40 for internal and 60 for written exam.
3. Expert recommended us to keep the syllabus more spoken- oriented rather than including more written or grammar, given the duration of the course.
4. Ideas were brainstormed for inculcating two different textbooks for the coursework and including scanned pages in the classroom on-screen to make it more interesting and colorful for students. Although the compiled material is available for students' perusal, getting same pages scanned on-screen and more external exercises for class on-screen was suggested.

These suggestions were incorporated in the new Syllabus which is attached for the reference.

Ms. Poorva Kulkarni

Adjunct Faculty

Applied Science

Ms. Nandini Iyer

Head I/C

Applied Science

COURSE AUDIT

TYBTech

Course Title: German Language-I and German Language-II

Course Code: German Language-I- AS (ILE)-17007

Credits-02

Course Audit Dates: 16th August 2018

Course Auditors: Ms. Prachi Kulkarni

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Suggestions:

1. Changes were suggested in the contents of a unit. Titles and Number of units remained same.
2. Ideas were brainstormed and changes were suggested in assignments and the examination scheme as 40 for internal and 60 for written exam.
3. Expert recommended us to keep the syllabus more spoken- oriented rather than including more written or grammar, given the duration of the course.
4. Ideas were brainstormed for inculcating two different textbooks for the coursework and including scanned pages in the classroom on-screen to make it more interesting and colorful for students. Although the compiled material is available for students' perusal, getting same pages scanned on-screen and more external exercises for class on-screen was suggested.

These suggestions were incorporated in the new Syllabus which is attached for the reference.

Ms. Poorva Kulkarni

Adjunct Faculty

Applied Science

Ms. Nandini Iyer

Head I/C

Applied Science

T.Y.B.Tech
ILOE
German Language -I

Teaching Scheme: 2 Hours/ week

Evaluation Scheme: Total Marks

Oral Exam: 20 Marks

Written Exam: 80 Marks

Course Education Objectives (CEO)

1. Introduction of Germany
2. Greetings, phrases, vocabulary
3. Understanding of numbers till 100
4. Grammar- Introductory Sentence Formation, Articles, Pronouns, Tense, Prepositions
5. Question Formation

Course Outcomes (CO)

- a) Students would know the basic information of Germany
- b) Students would be familiar with the pronunciation of German letters and greetings
- c) Students would be able to count till 100
- d) Students would be able to introduce themselves
- e) Students would be able to form basic questions
- f) Students would be able to read the city map

Unit I

[08 hrs]

Start auf Deutsch: (Begin in German)

Deutschland, Deutsch sehen und hören, Buchstaben, Zahlen bis 50, Begrüssungen, Monate, Wochentage

Unit II

[06 hrs]

Café: (Café)

Gespräche im Café, Texte: Getränkekarte, Telefonbuch, Wortfelder: Gespräche im Café, Zahlen bis 100, Strukturwörter

Unit III

[05 hrs]

Städte, Länder, Sprachen: (Cities, Countries, Languages)

Sehenswürdigkeiten in Europa, Sprachen in Europa, Nachbarsprachen

Unit IV

[05 hrs]

Grammatik

W-Frage, Verben, Wortakzent, Singular und Plural, Artikel, Vereinigung: kein, Personalpronomen, Präteritum von sein

Text Book:

1. Funk.H., Kuhn.C., & Demme.S. Studio d A1. Deutsch als Fremdsprache. 2011. Goyal Publishers & Distributors Pvt. Ltd. Delhi, India.

Reference Book:

1. Dengler.S., Rusch. P., Schmitz.S., & Sieber.T. Netzwerk, Deutsch als Fremdsprache. 2015. Goyal Publishers & Distributors Pvt. Ltd. Delhi, India.

**T.Y.B.Tech
ILOE
German Language -II**

Teaching Scheme: 2 Hours/ week

**Evaluation Scheme: Total Marks
Oral Exam: 20 Marks
Written Exam: 80 Marks**

Course Education Objectives (CEO)

1. Situational Conversations
2. Telephonic Conversation
3. Writing and reading basic texts or emails
4. Grammar- Accusative, Dative, Prepositions, Comparative Degree, Adjective Endings, Imperative
5. Introduction to tourism and culture of Germany

Course Outcomes (CO)

- a) Students would understand conversations of time and appointments
- b) Students would be familiar with the place orientation and directions
- c) Students would be able to converse about professions and schedules at work
- d) Students would be familiar with the tourism and culture of German

[07 hrs]

Unit I

Menschen und Häuser: (People and Houses)

Wohnwelten, Texte: Möbelkatalog, E-Mail, Wohnungsgrundriss, Wortfelder: Räume und Möbel,
Wohnformen

[06 hrs]

Unit II

Termine: (Appointments)

Termine, Pünktlichkeit interkulturell, Texte: Meldebestätigung,
Wortfelder: Uhrzeiten, Wochentage, Tageszeiten

Unit III

[05 hrs]

Orientierung: (Orientation)

Orientierung am Arbeitsplatz, Der Weg zur Arbeit, Die Stadt Leipzig, Texte: Stadtplan, Wortfelder: Stadt, Verkehrsmittel, Büro und Computer, Beruf und Alltag

Unit IV

[06 hrs]

Grammatik:

Possessivartikel im Nominativ, Artikel im Akkusativ, Adjektive im Satz, Präpositionen, trennbare Verben, Vereinbarung mit 'nicht', Präteritum von haben, Modalverben

Text Book:

1. Funk.H., Kuhn.C., & Demme.S. Studio d A1. Deutsch als Fremdsprache. 2011. Goyal Publishers & Distributors Pvt. Ltd. Delhi, India.

Reference Book:

1. Dengler.S., Rusch. P., Schmitz.S., & Sieber.T. Netzwerk, Deutsch als Fremdsprache. 2015. Goyal Publishers & Distributors Pvt. Ltd. Delhi, India

T.Y.B.Tech
ILOE
German Language -I- modified

Teaching Scheme: 2 Hours/ week

Evaluation Scheme: Total Marks

Assignments: 40 Marks

Written Exam: 60 Marks

Course Education Objectives (CEO)

1. Introduction of Germany
2. Greetings, phrases, vocabulary
3. Understanding of numbers till 1000
4. Grammar- Introductory Sentence Formation, Articles, Pronouns, Tense
5. Question Formation

Course Outcomes (CO)

- a) Students would know the basic information of Germany
- b) Students would be familiar with the pronunciation of German letters and greetings
- c) Students would be able to count till 1000
- d) Students would be able to introduce themselves
- e) Students would be able to form basic questions

Unit I

Start auf Deutsch: (Begin in German)

Deutschland, Buchstaben, Zahlen bis 100, Begrüßungen, Monate, Wochentage, Vorstellung, Länder und Sprachen

Unit II

Café: (Café)

Gespräche im Café, Texte: Getränkekarte, Wortfelder: Gespräche im Café, Zahlen bis 1000, Dialoge

Unit III

Städte, Länder, Sprachen: (Cities, Countries, Languages)

Sehenswürdigkeiten in Europa, Sprachen in Europa, Nachbarsprachen

Unit IV

Grammatik

Wortschatz, Verbkonjugationen, W-Frage, Verben, Wortakzent, Personalpronomen, Artikel, Singular und Plural, Vereinigung: kein

Text Book:

1. Funk.H., Kuhn.C., & Demme.S. Studio d A1. Deutsch als Fremdsprache. 2011. Goyal Publishers & Distributors Pvt. Ltd. Delhi, India.

Reference Book:

1. Dengler.S., Rusch. P., Schmitz.S., & Sieber.T. Netzwerk, Deutsch als Fremdsprache. 2015. Goyal Publishers & Distributors Pvt. Ltd. Delhi, India
2. Wolfgang Hieber. Lernziel Deutsch; Deutsch als Fremdsprache.1983. Max Hueber Verlag, Madras. India.

T.Y.B.Tech
ILOE
German Language –II- modified

Teaching Scheme: 2 Hours/ week

Evaluation Scheme: Total Marks
Oral Exam: 40 Marks
Written Exam: 60 Marks

Course Education Objectives (CEO)

1. Situational Conversations
2. Telephonic Conversations
3. Writing and reading basic texts
4. Grammar- Accusative, Prepositions, Adjectives, Imperative
5. Introduction to tourism and culture of Germany

Course Outcomes (CO)

- a) Students would understand conversations of time and appointments
- b) Students would be familiar with the place orientation and directions
- c) Students would be able to converse about professions and schedules at work
- d) Students would be familiar with the tourism and culture of German

Unit I

Menschen und Häuser: (People and Houses)

Texte: Möbelkatalog, Wohnungsgrundriss, Wortfelder: Räume und Möbel, Wohnformen

Unit II

Termine: (Appointments)

Termine, Pünktlichkeit interkulturell, Texte: Meldebestätigung,
Wortfelder: Uhrzeiten, Wochentage, Tageszeiten

Unit III

Orientierung: (Orientation)

Orientierung am Arbeitsplatz, Der Weg zur Arbeit, Die Stadt Leipzig, Wortfelder: Stadt, Verkehrsmittel, Büro und Computer, Beruf und Alltag

Unit IV

Grammatik:

Wortschatz, Verbkonjugationen, Possessivartikel im Nominativ, Artikel im Akkusativ, Adjektive im Satz, Präpositionen, trennbare Verben, Vereinbarung mit 'nicht', Präteritum von sein, haben

Text Book:

1. Funk.H., Kuhn.C., & Demme.S. Studio d A1. Deutsch als Fremdsprache. 2011. Goyal Publishers & Distributors Pvt. Ltd. Delhi, India.

Reference Book:

1. Dengler.S., Rusch. P., Schmitz.S., & Sieber.T. Netzwerk, Deutsch als Fremdsprache. 2015. Goyal Publishers & Distributors Pvt. Ltd. Delhi, India
2. Wolfgang Hieber. Lernziel Deutsch; Deutsch als Fremdsprache.1983. Max Hueber Verlag, Madras. India.

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COURSE AUDIT

BDS
ED

TYBTech

Course Title: Entrepreneurship Development

Course Code: HS-17001

Credit-01

Course Audit Dates: 14th September 2018

Course Auditors: Mr. Shardul Dharmadhikari

The one Credit for the course of Entrepreneurship Development for Second Year BTech was conducted at the department of Applied Sciences. The syllabus was discussed and analyzed by the experts. As per the suggestions given by the expert, the syllabus has been revised.

Suggestions:

1. Titles and sub-titles of the units, and the number of units remained unchanged except one title of the unit VI.
2. Some changes were suggested in the sub-topics of the units.
3. Evaluation pattern was appreciated by the Auditor.
4. The auditor prescribed a reference book for Marketing basics which has been included in the references.

These suggestions were incorporated in the modified Syllabus which is attached for the reference.


Mr. Amit Janorikar


Ms. Nandini Iyer

Adjunct Faculty

Head I/C

Applied Science

Applied Science

Entrepreneurship Development (T.Y.B.Tech.)

Teaching Scheme

Lectures: 2hrs/week

Examination Scheme

Total Marks: 100

Continuous Evaluation

Field Work/Assignment: 40

End Semester Exam: 60

Course Education Objectives (CEO)

1. To introduce and understand Entrepreneurship and its types
2. To understand how to evaluate risk in entrepreneurial ventures
3. To understand different type of finances available and financing methods
4. To understand marketing, digital marketing and their analytics
5. To understand detailed information about the principles, practices and tools involved in all aspects of the sales processes
6. To understand basics of operations management
7. To understand the nuances of Start-up
8. To understand how to use proven tools for transforming an idea into a product / service that creates value for others

Course Outcomes (CO)

- a) Students would understand different types of Entrepreneurial ventures and would be able to discover, develop, and assess opportunities
- b) Students would learn about opportunity and risk analysis
- c) Students would understand the strategies for valuing your own company, and how venture capitalist and angel investors use valuations in negotiating milestones, influence and control
- d) Students would understand to pick correct marketing mix and how to position the company in the market by using analytical tools
- e) Students would learn how to sell themselves and the product/service and to handle objections
- f) Students would get to know how organizations operates and their process matrices
- g) Students will learn how start new ventures
- h) Students will learn how to write winning business plans

Unit I: Market Research

(2 hrs)

Introduction to Entrepreneurship, Profile of the Entrepreneur, Market Gap / Opportunity Analysis, Market Research Methods, Defining the Focal Market: Market Segmentation, Industry analyzing – Research / Competitive Analysis

Unit II: Types of Companies and Organizations

(1 hr)

Company/ Organization Types, Legal Aspects, Taxation, Government Liaison, Building the Team, Mergers and Acquisitions

Unit III: Business Finance

(2 hrs)

Shares and Stakes, Valuation, Finance Creation (Investors / Financers), Revenue Plans and Projections, Financial Ratios, Business Lifecycle, Break Even

Unit IV: Marketing

(2 hrs)

Marketing Basics, Marketing Strategy and Brand Positioning, Plans and Execution Techniques, Marketing Analytics, Online Marketing

Unit V: Sales

(2 hrs)

Understanding Sales, Pitching Techniques, Sales strategies, Inside Sales v/s Outside Sales, RFP

Unit VI: Operations Management

(1 hr)

Operational Basics, Process Analysis, Productivity, Quality

Unit VII: Start-ups

(2 hrs)

Start-up Basics, Terms, Start-up Financing, Start-up Incubation, Start-up Incubation, Getting Listed

1. The Startup Playbook: Secrets of the Fastest-Growing Startups From Their Founding Entrepreneurs by David Kidder
2. Creativity, Inc.: Overcoming the Unseen Forces That Stand in the Way of True Inspiration by Ed Catmull
3. True North by Bill George and Peter Sims
4. Bhargava, S. (2003). Transformational leadership: Value based management for Indian Organizations (Ed.). New Delhi: Response-Sage.
5. Cardullo, M. W. P. E. (1999). Technological entrepreneurship: Enterprise formation, financing, and growyh. England: Research Studies press Ltd.
6. Hisrich, R. D. & Peters, M. P. (2001). Entrepreneurship: Starting, developing, and managing a new enterprise (5th Ed.). New York: McGraw-Hill.

References:

1. Kanungo, R. N. (1998). Entrepreneurship and innovation: Models for development (Ed., Vol.2). New Delhi: Sage.
2. McClelland, D. C. (1961). Achieving society. Princeton
3. Van Nostrand. Verma, J. C., & Singh, G. (2002). Small business and industry: A handbook for entrepreneurs. New Delhi: Response-Sage.
4. Richard A Brealy & Steward C Myres. Principles of Corporate Finance, McGraw Hills, 7th Edn,2004
5. Prasanna Chandra, Financial Management: Theory and Practice, Tata McGraw Hills, 6th Edn, 2004
6. I M Pandey, Financial Management, Vikas Publishing, 9th Edn, 2004
7. Aswath Damodaran, Corporate Finance-Theory and Practice , John Wiley & Sons, 1997
8. I.M. Pandey & Ramesh Bhat, "Cases in Financial Management", Tata McGraw-Hill, New Delhi.

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9. Horowitch (ED), Technology in the modern Corporation: A Strategic perspective, Pergamon Press, 1986.
 10. M. Dodgson (ED), Technology and the firm: Strategies, management & Public Policy, Longman, Harlow, 1989.

**Entrepreneurship Development- modified syllabus
(T.Y.B.Tech.)**

Teaching Scheme

Lectures: 2hrs/week

Examination Scheme

Total Marks: 100

Continuous Evaluation

Field Work/Assignment: 40

End Semester Exam: 60

Course Education Objectives (CEO)

9. To introduce and understand Entrepreneurship and its types
10. To understand how to evaluate risk in entrepreneurial ventures
11. To understand different type of finances available and financing methods
12. To understand marketing, digital marketing and their analytics
13. To understand detailed information about the principles, practices and tools involved in all aspects of the sales processes
14. To understand basics of operations management
15. To understand the nuances of Start-up
16. To understand how to use proven tools for transforming an idea into a product / service that creates value for others

Course Outcomes (CO)

- i) Students would understand different types of Entrepreneurial ventures and would be able to discover, develop, and assess opportunities
- j) Students would learn about opportunity and risk analysis
- k) Students would understand the strategies for valuing your own company, and how venture capitalist and angel investors use valuations in negotiating milestones, influence and control
- l) Students would understand to pick correct marketing mix and how to position the company in the market by using analytical tools
- m) Students would learn how to sale themselves and the product/service and to handle objections
- n) Students would get to know how organizations operates and their process matrices
- o) Students will learn how start new ventures
- p) Students will learn how to write winning business plans

Unit I: Market Research

(2 hrs)

Introduction to Entrepreneurship, Profile of the Entrepreneur, Market Gap / Opportunity Analysis, Market Research Methods, Defining the Focal Market: Market Segmentation, Industry analyzing – Research / Competitive Analysis

Unit II: Types of Companies and Organizations

(1 hr)

Company/ Organization Types, Legal Aspects, Taxation, Government Liaison, Building the Team, Mergers and Acquisitions, import and export nuances

Unit III: Business Finance

(2 hrs)

Shares and Stakes, Valuation, Finance Creation (Investors / Financers), Revenue Plans and Projections, Financial Ratios, Business Lifecycle, Break Even, Balance Sheets, game theory

Unit IV: Marketing

(2 hrs)

Marketing Basics, Marketing Strategy and Brand Positioning, Plans and Execution Techniques, Marketing Analytics, Online Marketing, Product Life Cycle

Unit V: Sales

(2 hrs)

Understanding Sales, Pitching Techniques, Sales strategies, Inside Sales v/s Outside Sales, RFP

Unit VI: Operations Management and HR

(1

hr)

Operational Basics, Process Analysis, Productivity, Quality

Unit VII: Start-ups

(2 hrs)

Start-up Basics, Terms, Start-up Financing, Start-up Incubation, Getting Listed

Text Books:

7. The Startup Playbook: Secrets of the Fastest-Growing Startups From Their Founding Entrepreneurs by David Kidder
8. Creativity, Inc.: Overcoming the Unseen Forces That Stand in the Way of True Inspiration by Ed Catmull
9. True North by Bill George and Peter Sims
10. Bhargava, S. (2003). Transformational leadership: Value based management for Indian Organizations (Ed.). New Delhi: Response-Sage.
11. Cardullo, M. W. P. E. (1999). Technological entrepreneurship: Enterprise formation, financing, and growth. England: Research Studies press Ltd.
12. Hisrich, R. D. & Peters, M. P. (2001). Entrepreneurship: Starting, developing, and managing a new enterprise (5th Ed.). New York: McGraw-Hill.

References:

11. Kanungo, R. N. (1998). Entrepreneurship and innovation: Models for development (Ed., Vol.2). New Delhi: Sage.
12. McClelland, D. C. (1961). Achieving society. Princeton
13. Van Nostrand. Verma, J. C., & Singh, G. (2002). Small business and industry: A handbook for entrepreneurs. New Delhi: Response-Sage.
14. Richard A Brealy & Steward C Myres. Principles of Corporate Finance, McGraw Hills, 7th Edn, 2004
15. Prasanna Chandra, Financial Management: Theory and Practice, Tata McGraw Hills, 6th Edn, 2004
16. I M Pandey, Financial Management, Vikas Publishing, 9th Edn, 2004
17. Aswath Damodaran, Corporate Finance-Theory and Practice , John Wiley & Sons, 1997
18. I.M. Pandey & Ramesh Bhat, "Cases in Financial Management", Tata McGraw-Hill, New Delhi.

19. Horowitch (ED), Technology in the modern Corporation: A Strategic perspective, Pergamon Press, 1986.
20. M. Dodgson (ED), Technology and the firm: Strategies, management & Public Policy, Longman, Harlow, 1989.
21. Kotler P. T., Armstrong G., & Agnihotri.P. 2018. Principles of Marketing.

Re: Inputs form Dr.Ratnaparkhi

Ketaki Kamble <kamblek.appsci@coep.ac.in>

Mon 4/13/2020 21:30

To: girish@iiserpune.ac.in <girish@iiserpune.ac.in>

Cc: HoD, Applied Science <hod.appsci@coep.ac.in>

Bcc: smh.appsci <smh.appsci@coep.ac.in>; M K Ranjekar <mkr.appsci@coep.ac.in>

 1 attachments (64 KB)

Biology for Engineers _Modified.docx;

Hello sir,

I hope this mail finds you in excellent health and spirit in these globally challenging times.

We are sending you a copy of the syllabus of the course: Biology for engineers, which has been modified over the lines of your suggestions.

While we are still working on way to introduce a formal textbook and formulating open biological problems for engineering students, we have managed to address the extensive nature of syllabus. We have split the first chapter into two, modified the last unit and have made the branch-specific content contingent to evaluation.

The changes are highlighted in green fond for ease of tracing.

As we go along, I am sure we can brainstorm ways of measuring the success of this course syllabus as suggested by you.

We once again thank you profusely for giving time to evaluate the syllabus and for these valuable inputs.

We would also like to thank our HOD, Iyer mam who contacted you for this academic exercise.

Dr. Ketaki Kamble

Asst. Prof.

Applied Science Department

College of Engineering Pune

From: HoD, Applied Science <hod.appsci@coep.ac.in>**Sent:** Friday, March 13, 2020 8:53 AM**To:** M K Ranjekar <mkr.appsci@coep.ac.in>; smh.appsci <smh.appsci@coep.ac.in>; Ketaki Kamble <kamblek.appsci@coep.ac.in>**Subject:** Inputs form Dr.Ratnaparkhi

Dear All,

Please find attached the inputs given by Dr.Ratnaparkhi and kindly implement the suggestions put forth. I request you to make the necessary modifications and send me the final version of the syllabus.

Thanks and regards,*Nandini V. Iyer***Head****FYBTech Coordinator**

Assistant Professor- Chemistry
Dept of Applied Science
020-25507031
+919881991115

From: Girish Ratnaparkhi <girish@iiserpune.ac.in>
Sent: Friday, March 13, 2020 3:46 AM
To: HoD, Applied Science <hod.appsci@coep.ac.in>
Subject: Re: Invitation as a Subject Expert

Dear Nandini,
Please find attached my comments.
Girish

On Sat, Feb 29, 2020 at 1:05 PM HoD, Applied Science <hod.appsci@coep.ac.in> wrote:

Dear Sir,

Greetings from COEP.

I would like to extend my invitation to you as a Subject Expert for reviewing the course contents and giving your valuable inputs for the Applied Biology course offered to the SYBtech students of our college. The course is a 3 credit course and is offered to both the Electrical related branches as well as the Non-electrical related branches of Engineering.

We are going for the revision of the syllabus and it will be effective for the academic year 2020-21. The syllabus will be effective for 4 years till 2023- 2024.

I got your reference from Dr.V.G.Anand .I request you to kindly let me know your acceptance as an expert and also your availability from 9th March to 13th March 2020.

I request you to write me a mail for the same. You will be given the remuneration along with TA as per the rules laid by the institute.

Anticipating your positive reply.

Thanks and regards,

Nandini V. Iyer

Head
FYB Tech Coordinator
Assistant Professor- Chemistry
Dept of Applied Science
020-25507031
+919881991115

Minutes of Meeting for Syllabus Revision

Ketaki Kamble <kamblek.appsci@coep.ac.in>

Fri 9/17/2021 4:05 PM

To: smh.appsci <smh.appsci@coep.ac.in>

Dear Sir,

I am listing out the following important highlights/improvisations of the syllabus entitled "Biology For Engineers" as per our discussion (12/03/2020, afternoon) with you along with Head of Department Iyer Mam, and Biology Instructors: Prof. Ranjekar, Prof. Shinidikar and Dr. Ketaki Kamble.

1. You strongly recommended use of a single textbook for the course. The course module could be altered a little to fit to an already existing textbook.
2. This textbook could be used as a primary source; further secondary sources of course material could be built upon based on the interest and branch of the students.
3. We discussed whether the syllabus is based on IIT-Mumbai curriculum and motives of doing/ not doing so.
4. It was highlighted that the course standard depends largely on the way instructors of the course handle topics.
5. We discussed and deliberated ways to measure the utility/fruitfulness of the course for students. We could make provisions for external examiners for viva, data from bio-projects and preference of biology in higher studies were some key points that could be used to measure the effectiveness of the course after 3-4 years of implementation. We should keep looking for better/more direct ways for such evaluation.
6. It was agreed upon that the syllabus is dense and heavy. A meticulous critical thinking is needed to streamline the content further.
7. We also considered possibility of adding systems biology in the syllabus.
8. You suggested adding of unit-wise "Open Problems" of biology for students to deliberate and brainstorm, which was appreciated and seconded unanimously.
9. We discussed examples of how the course contents are handled branch-wise, student's attitude and abilities and evolution of the syllabus in last 10 years.
10. We also discussed when we could invite you for interaction with students and to experience a flavor of interdisciplinary teaching by instructors.

We are humbled by your approach towards this academic exercise of syllabus improvisation and for your broad approach for learning in-general.

I thank you profusely for your valuable inputs.

Warm Regards,
Dr. Ketaki Kamble
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13th March 2020

Prof. Nandini Iyer,
Head, FYBTech Coordinator
Assistant Professor- Chemistry
Dept of Applied Science
COEP

Dear Nandini,

It was a pleasure to meet the Biology faculty at COEP and discuss the proposed changes in the syllabus. The draft of the '*Biology for Engineers*' course was discussed extensively and based on our deliberations and my understanding of the needs to the program, here is what I understand:

1. Since the students are engineers and are not destined for the Biology stream, the teachers involved will have to convey a quantum of biological information in 32-36 hours for this 3-credit course. The teachers have to balance between breadth and depth and the choice of content/modules will have to be on par with the best engineering schools in the country.
2. COEP however will have different strengths than other top engineering schools and the faculty will need to tune the content to the existing COEP engineering programs, as well as the scientific background of the teachers involved.

I do believe that the proposed content is reasonable and has been decided after much discussion between the faculty and after comparing the same to modules in engineering schools such as IIT, Bombay. You should go ahead with the new syllabus. I however have a few suggestions that could help improve the program that I have listed below. I will also edit the Draft document and send it to you separately.

1. Please try to find an updated textbook, published in the last 5 years, as a primary source. Even a couple of books will be fine. The textbook should cover at least 80% of the content that you are teaching in the course. Since the different modules of the course are from different areas of biology, the absence of a primary source may create difficulties for the student to follow up on what is taught.

2. The current content in each module is extensive. It will be challenging for the teacher to put across concepts in the limited time (6 hours per module) available. To help the students, I would recommend extra hours (1-2) per module where students can attend a session akin to a 'tutorial session' where they can revisit the content and solve their doubts. This interaction can be done once a week and need not be mandatory.
3. For each module, state a few 'Open Problems' in the biological sciences. These can be tuned to the engineering departments that exist in COEP. The idea is to convey how students with expertise in engineering can use their skillset to talking challenges in biology/human health and disease. The example I gave was the 'Protein folding problem', which has, for the last 20-40 years, remained an unsolved issue in spite of multiple attempts to find a solution using inter-disciplinary tools.
4. Once the syllabus changes, you will have to judge if the change is for the better. Evolve a system that allows you to track improvements in the program in the next 5-10 years. The system can use student feedback, their employment or further education in biological fields or an external review by experts from a school such as IIT Bombay. If the changes are hurting the program, they need to be reversed or modified within 2-3 years.

In the last few years I have seen an increasing interest for engineers towards tackling biological problems. I would predict that a larger fraction of your students will move towards biology/biotechnology in the future. With that in mind, I applaud your move towards improving your course content to meet the future needs of your students. My thanks to yourself, Prof. Ranjekar, Prof. Shinidikar and Dr. Ketaki Kamble for all the discussions.

G S Ratanparthi

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