CBIT Autonomous affiliated to Osmania University

DEPARTMENT OF CHEMISTRY

BOARD OF STUDIES MEETING OF CHEMISTRY

A meeting of Board of studies was held on 17th March 2018 at 10.30 a.m. in the chamber of HOD chemistry to discuss the following agenda

1. To finalize the syllabus of B.E1/4 (ALL BRANCHES)of Engineering course Chemistry theory and lab with modifications in the AICTE Model Curriculum.
2. To approve the evaluation pattern ,credits and grades under Choice based credit system (CBCS) ,as given by the AICTE Model Curriculum 2018.
3. To approve list of paper setters and examiners.
4. Suggestions of Board of Studies(BOS).

COMPOSITION OF BOARD OF STUDIES

1. **Chairman** **Dr.K.Laxmi**

Professor of Chemistry CBIT

2. **Subject expert** **Dr.A.Panasa Reddy**
Professor of Chemistry, Osmania University,Hyderabad

3. **Subject expert** **Dr.P.YadagiriSwamy**
Professor of Chemistry, Osmania University,Hyderabad

4. **Subject expert** **Dr.A.K.DurgaBhavani**
Professor of Chemistry , Osmania University

5. **Subject expert** **Prof.RavindraNath**
Professsor of Chemistry School of Sciences
Moulana Azad National Urdu University,Hyderabad

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6. **Subject expertDr.P.Rama Devi**
   General Manager,DQA Hetero(R&D), Balanagar,Hyderabad

7. **Member** **Dr. S.Shylaja** **Senior Assistant Professor of Chemistry CBIT**

8. **Member** **Dr. K.Ramesh** **Senior Assistant Professor of Chemistry CBIT**

9. **Member** **Dr.M.Mamatha** **Assistant Professor of Chemistry CBIT**

Item no.1CONCEPTS INCHEMISTRYFOR ENGINEERING -

Chemistry theory syllabus is keenly studied by the subject experts and they made very valuable suggestions in framing the modules with their titles of the syllabus.Expertshave also decided the number of lecture hours for completion of each module

MODULE I Atomic and molecular structure (8 lectures)

MODULE II Use of free energy in chemical equilibria and IonicEquilibria(10 lectures)

MODULE IIIStereochemistry and Organic reactions (14 lectures)

MODULEIVWaterChemistry (6 lectures)

MODULEV Engineering Materials and Drugs (9 lectures)

In MODULE II it is decided to allot 6 lecture hours for Use of free energy in chemical equilibria topics and 4 lecture hours to Ionic- Equilibriatopics.

Similarly in module IV there are two subunits Stereochemistry and Organic reactions for which 7 lecture hours are allotted to stereochemistry and 7 lectures for Organic reactions

Item no.2

Prof.RavindraNath, Professsor of Chemistry, School of Sciences, Moulana Azad National Urdu University,Hyderabad has strongly insisted to use the term module in place of term unit.

- The topics included in **Module IAtomic and molecular structure**were retained as given by AICTE MODEL CURRICULUM 2018,except very few changes.

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- The topics included in **Module IIUse of free energy in chemical equilibria are also retained as per** AICTE MODEL CURRICULUM 2018 with very small minor changes.
- In **Module II** the topic of Ionic- Equilibria is introduced keeping in view of the importance of solubility product and its applications. For this 4 lecture hours were allotted.

- The sub topics of above two modules I & II were thoroughly studied in depth by the Physical Chemistry experts **Dr.Panasa Reddy and Dr.P.YadagiriSwamy**and were finalized.

Item no.3

- Organic chemistry experts **Dr.A.K.DurgaBhavani** and **Prof.RavindraNath** listed out the topics of **Stereochemistry and Organic Reactions of Module III**. This is done with the intention of providing sufficient knowledge of organic chemistry to the students at the under graduate level.
- It is also suggested by the above experts to be specific with the topics like enantiomers and diastereomers by giving the examples .
- Similarly they insisted in giving names of examples for the organic reactions like substitutions, additions, eliminations, oxidation , cyclization etc.

Item no.4

- As per the suggestion made by **Dr.PanasaReddy ,Professor of Osmania University , Water Chemistry** is included as a separate module as **module IV** . This modification is done by expert by taking the flexibility of making changes to the extent of 20 % in the AICTE Model Curriculum.
- The sub topics included in Water Chemistry were keenly considered by him and was framed with the intention of having knowledge to engineering students about hardness of water and its types , boiler troubles – scales and sludges ; water softening methods ;Industrial water, and their treatment methods and also potable water and its specifications ; Disinfectionmethods.

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Item no.5

- In module V **Engineering materials like nano materials, composite materials , conducting polymers** were included . This is strongly recommended by the subject expert Prof.RavindraNath as he says an engineering student must have the knowledge of Material science irrespective of his branch of study.

Item no.6

- As recommended by the experts **Dr.A.K.DurgaBhavani and Dr.P.Rama Devi**, the study of drugs like **Aspirin (analgesic), Paracetamol (antipyretic), attenolol (antihypertensic)** is included in the syllabus up to their structure and synthesis levels. This has been done with intention of having awareness about commonly used drugs.

Item no.7

- A list of **eight text books** were suggested. In this three books are for physical chemistry, three books are for organic chemistry and two books are suggested for engineering chemistry topics.
- **Course outcomes** were slightly modified in accordance to changes made in the syllabus . This for the purpose of NBA CO-PO mapping.Corrections were also made in Course outcomes to be in accordance with Blooms Taxonomy.

Item no.8

- Chemistry Practical syllabus is also recommended with the valuable changes by the subject experts.This is because chemistry is a experimental subject and profound knowledge in the Practicals is essential to understand the concepts in engineering Profession.

- Chemistry practical lab syllabus is also studied in depth and a list of 12 experiments were finalized from AICTE Model Curriculum. The experiments included are hardness of water, chloride estimation in water, firsrt order kinetics, Conductometric titrartions—HCL Vs NaOH ; CH_3COOH VsNaOH : mixture of acids Vs NaOH ; Potentiometric acid base and redox titrations ; Distribution experiments, Organic identification of functional groups; Determination of viscosity and surface tension . Asprin synthesis.

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- The above experiments were selected with the intention of improving skills of the students in handling instruments like conductometer& potentiometers
- Students were also made to focus on the organic functional group identification. Experiments of water chemistry, kinetics , distribution , viscosity , surface tension etc.
- It wasdecided by the experts to prepare the experimental procedures for the above experiments and they highlighted to teach the students the principle of each experiment before commencement of the lab session.
- A list of three text books were suggested for Chemistry Practical experiments by the experts.
- Course outcomes in accordance with Blooms Taxonomy were also incorporated for Chemistry Practical Lab syllabus.

Item no.9

- Marks distribution for internal and external lab sessionals and theory exams were reviewed and finalized.
- It is insisted by the experts to give weightage to viva in the Lab Internal and External examination .
- It is decided to allot 70/30 marks for External and Internal theory exams repectively

The syllabusfor **Chemistry theory and Lab** forB.E 1/4 (ALL BRANCHES)of Engineering courseis modifiedtaking into consideration of all the above suggestionsdiscussed in the meeting and is well framed incorporating the modifications given . The modified syllabus copy of**Chemistry theory and Lab for B.E 1/4 (ALL BRANCHES)** is reviewed keenly by the subject experts , Members and Chairman of the BOS and is approved.

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