

**SDM College of Engineering and Technology, Dharwad**  
**Department of Chemical Engineering**

**BOS Meet Proceedings (New Courses Introduced)**

**2021 15<sup>th</sup> BOS Meet Proceedings**

**Meeting of Board of Studies of Chemical Engineering was held on 2nd July 2021 from 10.00 A.M. to 12.00 A.M. in the Dept. of Chemical Engineering to discuss and finalize scheme & syllabus of B.E. Chemical Engineering Program for the academic year 2020-21.**

**Link: <http://meet.google.com/jbh-sxzs-ndc>**

**Agenda**

- i. Syllabus revision/updating up to 10% change in the current curriculum for III, IV, V and VI Semester according to 175 credits scheme.
- ii. Complete syllabus revision for VII and VIII semester according to 175 credits scheme.
- iii. Revised CO-PO mapping according to unit wise syllabus of the subjects.

Chairman of the B.O.S. – UG-Chemical, Dr. Lokeshwari N welcomed all the BOS members and briefed the committee about the changes to be made in UG scheme and curriculum to align with AICTE, VTU, Belagavi and SDMCET guidelines.

Chairman briefed about the previous BOS meet held on 21<sup>st</sup> June 2021 and was discussed to have minimal correction in courses, avoid major changes like inclusion or exclusion of courses. General open electives are included under open elective categories from the current academic year. The 18-batch scheme and syllabus of 175 credits to be implemented for 4<sup>th</sup> year was discussed.

**Agenda 1: Syllabus revision/updating up to 10% change in the current curriculum for III, IV, V and VI Semester according to 175 credits scheme. The following suggestions were made by the members**

- Title of the Program Core “Technical Chemistry” in III semester can be rephrased to “Materials Chemistry”. (Dr. Puttaswamy C.T)
- “Transport Phenomena” elective in VI semester can be offered as a core subject. (Dr. G.P.Desai)
- Uniformity to be maintained in contact hours of the subjects as the question paper pattern is unit wise and there is a choice in each unit.

**The scheme and syllabus of the 2<sup>nd</sup> and 3<sup>rd</sup> year was approved by the BOS members**

**Agenda 2: Complete syllabus revision for VII and VIII semester according to 175 credits scheme. The following suggestions were made by the members**

- **Advance Bioprocess Engineering** can be offered as an open elective instead of Program elective in VIII semester. (Dr. Umesh B. Deshannavar)
- Title of the elective “Scale up in Chemical Process” Offered in VIII semester can be rephrased to “pilot Plant and Scale up in Chemical process”. (Dr. Puttaswamy C.T)
- Title of the elective “Sugar Technology” offered in VIII semester van be rephrased so as to highlight the importance of Co-generation power plant and Fermentation. (Dr. Puttaswamy C.T)
- Unit I of “Sugar Technology” can be rephrased as “Overview of Sugar Industry” (SYA)
- Contents of Fed batch fermentation reactors can be included. (Dr. Puttaswamy C.T)
- Under Co-generation unit, Carbon capturing and compressed biogas from press mud can be included. (Dr. Puttaswamy C.T)
- Availability of the reference books for “Environment Impact Assessment” to be checked.(Dr. Puttaswamy C.T)
- Prerequisite of “Advance Bioprocess Engineering” to be changed if “Biochemical Engineering” to be offered as an open elective. (Dr. G.P.Desai)
- Topic on Green Solvents to be added in Unit II of “Green Technology” elective in VIII semester. (Dr. Puttaswamy C.T)
- Prerequisites need not be mentioned for elective subjects. (Dr. Puttaswamy C.T)

**The scheme and syllabus of 4<sup>th</sup> Year was approved by BOS members.**

**Agenda 3: Revised CO-PO mapping according to unit wise syllabus of the subjects**

- In few subjects like CRE-II, Projects, the CO-PO mapping revised was approved by the BOS members

**General comments were opined by external members on the above-mentioned agendas held on 2<sup>nd</sup> July 2021 in the BOS meet:**

- Dr. Puttaswamy C.T briefed about the online internships opportunities for Chemical Engineering students. Internships can be taken up in data Analytics and Simulation.
- Dr. Umesh B. Deshannavar suggested motivating students to take internship offered by IChE. He further said about the Internship offered by “Petronas” in the field of Machine Learning and Artificial Intelligence”.

Chairman, Dr. Lokeshwari N thanked all the members for their valuable inputs and suitable corrections in scheme and curriculum. The approved scheme and syllabus are attached here with.

## 2020 14<sup>th</sup> BOS Meet Proceedings

Meeting of Board of Studies of Chemical Engineering was held on 14<sup>th</sup> July 2020 from 9.30 A.M. to 12.30 noon in the Dept. of Chemical Engineering to discuss and finalize scheme & syllabus of B.E. Chemical Engineering Program for the academic year 2020-21.

Members of BOS joined the meeting virtually through Cisco **WebEx meet**.

Chairman of the B.O.S. – UG-Chemical, Dr. Lokeshwari N welcomed all the BOS members. The following points were discussed and approval was taken in the meeting.

- Below mentioned Agenda of 14<sup>th</sup> BOS meet was briefed.
  - i. Syllabus revision for V and VI Semester according to 175 credits scheme.
  - ii. 10% change in current curriculum for higher semesters III, IV (175 Credits scheme), VII to VIII semester (200 Credits scheme).
  - iii. Reframing of COs and Multilevel mapping.
- Chairman of BOS briefed the committee about the changes to be made in UG scheme and curriculum to align with AICTE, VTU Belagavi and our college guidelines.
- The 18-batch scheme and syllabus of 175 credit to be implemented for 2<sup>nd</sup> and 3<sup>rd</sup> year and 200 credit scheme and syllabus for 4<sup>th</sup> year were discussed and approved by BOS members.
- Year wise distribution of 175 credits for 18 batch scheme: 1<sup>st</sup> Year= 40 credits; 2<sup>nd</sup> Year =49 credits; 3<sup>rd</sup> Year=49 credits and 4<sup>th</sup> year =37 credits.
- Unit wise syllabus is to be adopted for both the schemes as per college guidelines. Each course will have 5 units and each unit will have 9-12 Hrs. for 4 credit courses and 7-9 Hrs. for 3 credit courses.
- The two courses 18UCHC304 (Chemical Engineering drawing) and 18UCHC601 (Chemical Equipment Design-II) were not changed to unit wise and retained as before.
- The COs of all the courses were reframed and mapped to PO and PSOs according to the modified unit wise syllabus.
- The scheme of the 3<sup>rd</sup> year was discussed and approved by BOS members. 18UHUC500 (MEPIP) course was shifted to 5<sup>th</sup> semester at college level. 18UCHC501(Mass Transfer-1) was brought to 5<sup>th</sup> semester. The 18UHL506 (Minor Project-1) of 1 credit and 18UHUL507 (Soft skills/aptitude) of 1 credit is introduced in 5<sup>th</sup> semester at college level.
- 18UHL604 (Minor Project-2) of 2 credit and 18UHUL605 (Soft skills/aptitude) of 1 credit is introduced in 6<sup>th</sup> semester at college level.
- The college has introduced 3 Program electives and 2 open electives each of 3 credits in 18 schemes of 3<sup>rd</sup> year.
- The new electives introduced in 18 schemes for 3<sup>rd</sup> year by the program were 18UCHE510 (Air Pollution and Control Engineering), 18UCHE609 (Drug and

Pharmaceutical Technology), 18UCHE610 (Food Engineering), 18UCHE612 (Advance waste water treatment) and 18UCHE613 (Biology for Engineers).

- The scheme for the 4<sup>th</sup> year was discussed and approved by BOS members. As per college guidelines 2 program elective and 1 open elective in the 4<sup>th</sup> year. 18UCHL703 (Major Project-1) of 2 credits and 18UCHL704 (Internship) of 2 credits are introduced in 7<sup>th</sup> semester.
- 18UCHE706 (Biochemical Engineering) was brought as elective in 7<sup>th</sup> semester. 18UCHE708 (Process Instrumentation), 18UCHE709 (Instrumental Method of analysis), 18UCHE710 (Nuclear Engineering) are introduced as open electives in 7<sup>th</sup> semester. 18UCHE806 (Solid waste management), 18UCHE807 (Green Technology) and 18UCHE808 (Environmental Impact Assessment) are introduced as open electives in 8<sup>th</sup> semester.

The above modified scheme was approved by BOS members

- The chairman briefed about the second-year syllabus under the 18 batch schemes of 175 credit, with 10% change.
- In 18UCHC301 (Technical chemistry), one chapter on Nano Technology was introduced. In 18UCHL305 (Particulate Technology Lab), 18UCHL306 (Technical analysis Lab) and 18UCHL406 (Fluid Mechanics Lab) list of experiments was written instead of the name of the equipment. In 18UCHC403 (Pollution Control Engineering), Case studies of different industries was introduced.
- The chairman briefed about the 3<sup>rd</sup> year syllabus which was complete change for 18 Scheme for the approval.
- Dr. Puttswamy suggested to include the noise pollution in 18UCHE510 (Air pollution and control engineering) and advance biological treatment can be included in 18UCHE612 (Advance waste water treatment)
- The chairman briefed about the 4<sup>th</sup> year syllabus of 200 credit schemes with 10% change for the approval. Discussed and approved by BOS members.
- In 15UCHE709 (Novel separation technique) new sub topic of Ligand chromatography, membrane modules and gaseous diffusion was introduced. In 15UCHE803 (Solid waste management) new sub topic of Industrial solid waste management with case studies was introduced. In all the Laboratory courses list of experiments were written instead of the name of the equipment.

**General comments were opined by external members on the above-mentioned agendas held on 14<sup>th</sup> July 2020 in the BOS meet:**

- Dr Puttswamy C. T suggested that Biology for engineers can be made as open elective
- Mr. VinayKonaje and Mr. Ashvinikumar K Kulkarni suggested that Industry live based projects can be given to students during their summer vacations
- All external members suggested that Internship can be spread from 2 weeks to 4 weeks and students can opt for it after 4<sup>th</sup> semester and 6<sup>th</sup> semester and present the report in 7<sup>th</sup> semester for the evaluation

- All external members suggested that in 8th semester only one course can be retained, so that students can concentrate more on the project work and seminars.

### **2019 13<sup>th</sup> BOS Meet Proceedings**

**HoD and Chairman BoS welcomed all the BoS Members and introduced to the Dean Academic Program on 24<sup>th</sup> May 2019 on 13<sup>th</sup> BOS Meet.** Dean, Academics first welcomed all and said that all the scheme and structure given by AICTE/VTU is followed in common at central level and thanked the External BoS members for sparing their valuable time.

The approvals of previous BOS (2018-19) were briefed. Pre-BOS meet was conducted in the department on 18<sup>th</sup> May 2019 in order to discuss the above mentioned agenda.

- Dean Academics first explained all the scheme and structure given by AICTE/VTU to be followed commonly at the central level.
- College has decided to have common scheme and structure standard format for all the departments.
- There is liberty to change the LTP schedule for the department and BOS.
- Internship is newly introduced for 4 weeks during vacation.
- Projects have been introduced at the 4<sup>th</sup> semester level itself to bring the practice of understanding and mini and major projects at 5<sup>th</sup>, 6<sup>th</sup> and final year level.
- Soft skill and aptitude are commonly introduced in 5<sup>th</sup> and 6<sup>th</sup> semester
- Technical seminar and independent study is introduced at 8<sup>th</sup> semester
- 200 credits has been reduced to 175 credits.
- BOS members commented that for independent study they can make use of MOOCs, NPTEL course and students can be encouraged to register for such courses.
- They also opined that there are many emerging platforms that can be introduced by alumnus
- The BOS members suggested that the evaluation of internship can be at 8<sup>th</sup> semester, but Dean Academics said that in our autonomy system, the student get sufficient time in summer vacation after 4<sup>th</sup> and 6<sup>th</sup> semester and hence can be evaluated easily.
- Open book test can also be given, along with assignments to the students.
- BOS member (Alumnus) opined that he shall help to train the students in the area of Internet of Things, Project management, Data science and Machine learning.

#### **Experts' comments on Vision and Mission**

- BOS members approved the vision and mission changes as per the NBA suggestions given.

#### **Experts' comments on Scheme**

##### **Second year**

- BOS members said the scheme for 3<sup>rd</sup> and 4<sup>th</sup> can be approved.
- In the 4<sup>th</sup> semester they asked about the guidelines for evaluation for Introductory project and it was opined that proper rubrics can be framed.

### Third Year

- BOS members suggested various open electives.
- Concept of *Drawing* can be modified to *Sketching* for the subject Chemical Equipment Design and it was approved.
- BOS members opined soft skill training to be done centrally or at department level, hence the college guidelines were given, where the CIE will be evaluated by the staff of chemical engineering and the course will be taught by the expert from the college.
- BOS members appreciated and accepted the changes that will make students to go bold and work in a team.

### Fourth Year

- BoS members opined to make Novel Separation Techniques subject to be Program elective and rather than an Open elective.
- Numerical or Statistical methods can be given as an open elective.
- Solid Waste Management, Alternative energy sources , Industrial safety , Materials science can be opted as open electives.
- Unit operations in Process Industries can be offered as open elective.
- Biology for Engineers can be an open elective.
- Plant utilities and safety can be renamed as Plant utilities and Industrial safety

### 2018 12<sup>th</sup> BOS Meet Proceedings

**HoD and Chairman BoS welcomed all the BoS Members and introduced to the Dean Academic Program on 18<sup>th</sup> May 2018 on 12<sup>th</sup> BOS Meet.**

- The approvals of previous BOS (2016-17) were briefed.
- Pre-BOS meet was conducted in the department on 16<sup>th</sup> May 2018 in order to discuss the above mentioned agenda.
- Dean Academics addressed on Course Teacher Assessment (CTA) and said that the activities should make sure that the students are continuously engaged in studies.
- Following points were discussed .....

### III Sem

#### 1. Technical Chemistry(15UCHC300)

- In the 2<sup>nd</sup> chapter “Inorganic Polymers”, the sub topic “Boron-based polymers-polycarboranes and polymeric boron nitride” can be replaced by “Silicon –based polymers”.
- Contact hours across the course can be made uniform if questions are to be set chapter wise.
- 5<sup>th</sup> chapter “Organic Reactions and their Mechanisms”, can be replaced by “Spectroscopy” chapter.

#### 2. Fluid Mechanics (15UCHC302)

- CO<sub>2</sub> and CO<sub>3</sub> are reframed.

#### 3. Basic Analysis Lab (15UCHC306)

- Few experiments are combined and some additional experiments are included.
- The experiment “Estimation of total loss of ignition for cement sample” is

deleted.

#### IV Sem

##### **1. Pollution Control Engineering (15UCHC404)**

- In the 1<sup>st</sup> chapter Air, water and soil pollution management through waste minimization is deleted.
- Noise pollution chapter can be clubbed with air pollution chapter.
- Contact hours across all the chapters can be evenly distributed.

#### V Sem

##### **1. Chemical Equipment Design (15UCHC502)**

- CO 4 is modified.
- Chapter 2 and 3 i.e. Design of Pressure Vessels and Design of Reaction Vessels can be clubbed.
- Sub topic “Supports” in different chapters can be generalized.
- Reference books list is reorganized.

##### **2. Chemical Plant Utilities and Safety (15UCHC503)**

- Chapters can be clubbed to reduce number of chapters.

##### **3. Environmental Engineering lab. (15UCHC505)**

- Experiment on Bomb Calorimeter can be deleted as it is included in basic Analysis Lab of III Sem.

##### **4. Energy Technology and Management (15UCHC507)**

- A chapter on Fuel Cells can be added.
- Contents of “Fuels” chapter can be reduced.
- Statistics on energy generation and utilization can be added as a sub-topic in Energy management chapter.
- Contact hours for “Energy from Oceans” can be reduced.

#### VI Sem

##### **1. Process Equipment Design and Drawing (15UCHC602)**

- Design of Double pipe heat exchanger can be replaced with design of Fermenter.
- COs 2, 3 and 4 are modified.

##### **2. Mass Transfer Lab (15UCHC603)**

- Experiments on Packed column/ Plate column distillation, Rotary / Vacuum dryers, Holdup studies in packed columns and Tray dryer can be deleted.

##### **3. Chemical Reaction Engineering Lab (15UCHC604)**

- New experiments on i) CSTR in series and ii) RTD studies on spouted bed reactor can be added.

##### **4. Catalyst Technology (15UCHC607)**

- Chapters can be clubbed in order to reduce the number of chapters.
- COs are modified.

##### **5. Polymer Science and Technology (15UCHC609)**

- COs can be reframed.

### VII Sem

- Subject codes to be changed from 11UCHC... to 15UCHC...
- Elective on “Advanced waste water treatment to be added.
- Professional and core open electives can be given.

### VIII Sem

- Subject codes of 11UCHC800 and 11UCHC801 can be interchanged.
- Catalyst Technology elective can be replaced by Bioreactor Design.

#### **1. Chemical Technology(15UCHC701)**

- Rubber Industry chapter can be deleted.
- Contact hours to be made uniform.

#### **2. PEOs of the Chemical Engineering Department**

- PEO I and II are reframed and IV can be replaced by old PEO.

#### **➤ The following points were suggested in the BOS meeting by the external members**

- COs of each course can be reduced to 3 to 4 but not more than 6.
- Care to be taken to see that all COs should be attended by all students while framing IA question papers.
- Contact hours across all the chapters can be evenly distributed.
- Minimum and maximum contact hours can be fixed for the chapters.

#### **➤ All the necessary correction were made and the contents of the following subjects were modified to maintain uniform contact hours.**

- IV semester; Mass Transfer- I (15UCHC403)
- V semester; Chemical Plant Utilities and Safety (15UCHC503)
- VII semester; Chemical Technology; (15UCHC701)
- Vsemester; Energy Technology and Management (15UCHE507)
- III semester; Particulate Technology (15UCHC303)
- IV semester; Pollution Control Engineering (15UCHC404)
- V semester; Mass Transfer – II(15UCHC501)
- V semester; Chemical Equipment Design(15UCHC502)
- VI semester: Chemical Process Integration (15UCHC601)

## **2017 11<sup>th</sup> BOS Meet Proceedings**

### **11<sup>th</sup> BOS Minutes of the meeting held on 27<sup>th</sup> March 2017**

The members of the BOS were welcomed by Dr. Keshava Joshi Chairman, BOS.

Agenda of BOS meet:

- Approval for 2015-19 Scheme
- Details of last BOS meet suggestions incorporated.
- Detailed syllabus of V & VI Semester for the new scheme.



- 10 % modification in the syllabus of III, IV, VII and VIII semesters.

The following points were suggested in the meet:

1. The proposed 15-19 scheme was approved with minor modifications.
2. The number of course objectives to be maintained uniform and should be mapped with the sequence of course outcomes.
3. In mapping procedure of PO's with CO's, the third level of mapping should be "Substantial" instead of "Mastering".
4. Every course should have only 4-5 course outcomes.
5. The PO 12 for Life long learning to be incorporated for most of the courses through different academic activities.
6. Latest version of the Text books should be included in the syllabus including E - versions.
7. Chapters of some courses should be arranged in a systematic sequence.
8. Drawing in the curriculum can be included only in CIE and not for end semester exams.
9. The titles of course content of few courses have to be modified.



**H.O.D.**

**Department of Chemical Engineering  
SDM College of Engg & Technology,  
Dharwad-580 002**