GMR Institute of Technology
An Autonomous Institute Affiliated to JNTUK, Kakinada

GMRIT Training Tomorrow's Engineers Today

DEPARTMENT OF CHEMICAL ENGINEERING

13th Board of Studies

19.12.2020 (Saturday)

Minutes of the Meeting

General Discussions:

No	Points Discussed	Remarks
1.	Members are made aware of the various agendas 1. ATR on 12th BOS 2. Academic Regulations AR19 & AR20 3. Curriculum design and development AR2020 4. Curriculum design and development AR19 5. Changes in the syllabus of 1st to 4th semesters in the revised academic regulations 2019 6. Syllabus of 1 to 4 semesters under the academic regulation 2020 7. Revised curricula under academic regulation 2019 8. Modification in the academic regulations 2019	Dr.S.N Dash BOS chairman explain the reason behind revision of AR19 curriculum and regulation
2.	Dr.S.N.Dash said that as APSCHE guidelines it is mandatory to follow the credit distribution and course structure as per APCHE model curriculum, which is designed based on AICTE model curriculum. The total credits have been reduced AR19 (164) to AR20 (160) and also the inclusion of B.Tech (Honors) and B.Tech Minor with 20 Additional credits, total 9 electives among them 4are open electives.	Modifications in AR19 and new AR20 are made as per APSCHE
3.	Dr.BC Maikap sir said that whether the honors and minor courses are design with any specialization like manufacturing, computer programing financial and that case the degree should be awarded as B.Tech chemical engineering with minors in computer programing etc.	Suggestion to be implemented
4.	Dr.S.N Dash sir explained credit distribution in various categories(BS&H, H&S, Professional core, Professional elective ---) and various semesters (Semester wise break up). Which is compared with AICTE, APSCHE curriculum with revised AR19 and AR20.	Members satisfied with new distribution of credits
5.	Dr Dash sir also explained that minimum 8CGPA is required as per the regulations to opt for minor and honor course and the students has to register in the 3rd semester for the minor or honor. He also explained that honor is a program specific and minor is an interdisciplinary. Members are enquired difference between minor and honor course.	Dr.Dash explained that honor is a program specific and minor is a inter disciplinary.

6.	Revised AR19 and AR20 credit distribution for various classes was discussed theory class 3 credits lab 1.5 , integrated course 4, summer internship I & II each 1.5, project 8 and FSI 9 credits.	
7.	As per the new regulations both projects and FSI is mandatory for all the students along with 2 summer internship. Dr.BC Maikap sir asked whether it is possible to arrange industry based internships to all the students.	Dr.Dash sir is said it is possible and we are practicing since 2012 and having tie up with many industries
8.	Dr PS Sagar said that change in the credit distribution in AR19 Vs AR20 is only reduction of 4 credits in AR20 by removing comprehensive quiz, in revised AR19 curriculum we are unable to reduce 4 credits as already 2019 admitted batch students has started studying the regulation for 164 credits	
9.	Dr.BC Maikap sir said that whether NEP 2020 has been considered during framing the regulation, which has lot of flexibility to the students to select interdisciplinary courses, semester away program gap year concept etc.	Dr. dash sir said that flexibility in terms of gap year concept and more open electives is introduced
10.	Dr. PV Suresh sir asked why you are not giving chance on medical ground and if possible try to implement gap year concept on medical ground also	
11.	Dr.SN Dash discussed that employability skills consists of three parameters(Quantitative Aptitude, Soft skills and Program specific skills) and also the subject code will be assigned by the department as per the curriculum	
12.	AR19 revised structure of curriculum is discussed and the following changes from the 4th semester was mentioned as follows 1. In place of PI, CRE I was brought and PI merged with PDC in the 5th semester and accordingly subject name is changed to process instrumentation and control 2. EEPM course in 7th semester transferred to 5th semester 3. CRE II is made integrated course and CRE Lab is removed 4. 5th semester onwards 9 electives are included in the curriculum with 4 open electives and 5 professional electives which consist 3 career path electives of 4 categories 5. One open elective is exclusively student need to study in MOOCs 6. 5th sem material science is removed and replaced with CRE I 7. And transport phenomena bring forward from 8th semester to 5th semester 8. Process instrumentation and control has become a integrated course 9. Mass transfer 1 and 2 is merged in revised AR19 and the subject name is become Mass Transfer Operations 10. Mass transfer operations lab is bring forward from 7th semester to 6th semester	

13.	CC & EC activities are explained by Dr.S.N Dash and Dr.P.V.Suresh sir asked whether CC&EC activities credits will come for credit calculation or not.	Dr.dash sir explained that they are considered
14.	Dr.Dash sir explained 7th and 8th semester subjects explained, 7th or 8th semester courses are like package and it can be interchange, the student can also opt for project along with FSI. Dr.BC Maikap sir asked that FSI should be given in the 7th semester instead of 8th semester as the students will be busy in campus interviews in 8th semester.	
15.	Dr PV Suresh asked how many students from chemical engineering go for chemical engineering open elective course. Dr.Dash sir said that about 10% of the chemical engineering students can opt	
16.	Dr Dash sir explained assessment pattern for term paper, mini project, FSI and project in detail. He also said that as per the new regulation the outcome of these will be weighted in terms of paper presentation, publication product development and solutions for industry problems	
17.	Dr.PV Suresh asked the difference between honors and minors in terms of mode of delivery and assessment. Dr.Dash sir explained the honors courses to be studied by students whereas minors to be selected which is offered by other departments are student can also opt for MOOCs. The assessment pattern is discussed.as prescribed in regulations.	
18.	Mr.T.Ramakrishna Requested to show the syllabus of total quality management and EEPM. Internal member said that as those subjects fall on 5th snd 7th semesters the syllabus will be put up in the next BOS.	
19.	External members inquired whether the audit courses are same for all the departments.	Dr.Dash sir replied audit courses are same for all departments
20.	AR20 curriculum structure kept for discussion by Dr Dash sir the following changes were explained 1. The name of the industrial organic chemistry was changed to industrial chemistry, similarly the lab name from physical and analytical chemistry 2. Phase and Chemical Equilibria and chemical engineering thermodynamics are merged into a single subject by the name chemical engineering thermodynamics 3. Comprehensive quiz I & II from 4th and 6th semesters are removed 4. Chemical technology were brought forward from 5th to 4th sem	
21.	Dr.Suresh sir asked whether an employability skill is mandatory credit requirement for award of degree or not. Dr Dash sir replied that it is mandatory and will be evaluated in the even semester	

22.	Mr.T.Ramakrishna inquired whether process flow diagrams and process instrumentation diagrams are there in the syllabus of CT or not. Dr.Satya Sagar told that PFD and PID skills are added to the employability skills II	
23.	Mr T. Ramakrishna and Dr.PV Suresh suggested to reduce the content of unit II in industrial chemistry subject(Bio molecular part)	
24.	Members suggested reducing some content of unit I of CETD and seeing the possibility of including the same in ICHEM.	
25.	Members also appreciated the employability skills I & II concept and content of the syllabus	
26.	Members approved the proposed CRE-I syllabus as it is	
27.	Members also approved the proposed Chemical Technology syllabus as it is. Mr A .Prasad appreciated inclusion of Nylon 6 and Nylon 66	
28.	Mr A.Prasad appreciated introduction to chemical engineering syllabus and Mr. M.Siva Naresh advised to add thermodynamics and mass transfer concepts in unit	
29.	Members approved the remaining subjects syllabus of 3rd and 4th semesters in revised AR19 syllabus as it is, as it is already approved in the 12th BOS	
30.	Members approved the remaining subjects syllabus of 1st to 4th semesters in AR20 syllabus as it is, as it is already approved in the 12th BOS	
31.	Members suggested to include Comprehensive Quiz in Employability Skills –IV to compensate its removal in the modified Syllabus(AR-20) as it is very much required in the Campus and GATE point of view	

Name	Signature
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Dr. S.N.Dash	
Dr. M.Krishna Prasad	
Dr. P.S.Sagar	
Dr. H.Joga Rao	
Dr. G.Kalyani	
Dr. M.Gangadhar	
Dr.Deepshika Datta	
Dr.Shaik Shadulla	

5.	Dr S N Dash explained credit distribution of in various categories and various semesters (Semester wise break up) which is compared with AICTE, APSCHE Curriculum with AR-19 and AR-20	Members satisfied with new distribution of Credits along the semesters
6.	Dr Dash Sir also explained that minimum 8 CGPA is required as per the regulations to opt for Minor or Honours course and the students has to register in the 3rd Semester for the Minors or Honors	Members enquired the difference between Minor and Honors course Dr Dash Sir explained that Honor is a programme specific and Minor is multi disciplinary
7.	Revised AR-19 ~~Co~~ and AR-20 Credit distribution for various classes was discussed Theory - 3 Credits Lab - 1.5 Integrated course - 4	Summer Internship - I and II each 1.5 Credit Project - 8 Credits FSI - 9 Credits
8.	As per the new regulations both Project and FSI is mandatory for all the students along with two Summer Internships	Dr B C Maikap asked whether a it is possible to arrange full Semester Internships for all the students Dr Dash Sir said, it is possible
9.	Dr P S Sagar said the major change in credit distribution in AR-19 and AR-20 is only reduction of 4 Credits by ~~one~~ in AR 20 by removing Comprehensive Quiz	In Revised AR 19 Curriculum we are unable to reduce the 4 Credits as already 2019 admitted batch student ~~should~~ the same is has started study the regulation for 164 Credits
10.	Dr BC Mikap said that whether NEP 2020 has been considered during framing the regulation which has lot of flexibility	Dr Dash Sir said that flexibility in terms of ~~year~~ of Comp gap year concept

11.	Dr PV Suresh asked why you are not giving chance to the medically on medical grounds and if possible try to implement	Dr SN D
12.	Dr. SN Dash discussed that Employability skills consists of 3 parameters (GA, Soft skills and Department Specific Skills) and also the subject code will be assigned by the Department	
13.	AR-19 (Rev) Syllabus structure of 3rd ~~and~~ to 8th Sem Curriculum is discussed and the following changes from 4th Sem was mentioned as follows:	1. In place of PI, CRE-I is was brought and PI is merged with PDC in 5th Semester and accordingly Subject name is changed to Process Instrumentation and Control
14.	2. EEPM course in 7th Sem transferred to 5th Sem 3. CRE II is made Integrated Course and CRE Lab is removed 4. 5th Semester onwards 9 electives are included in the curriculum with 4 Open	Electives and 5 Professional Electives and Career Path Electives 6. One Open elective is exclusively MOOCs 7. 5th Semester Material Science is removed and in place of CRE-I and Material Science Transport Phenomena from 8th Sem is given.
15.	CC and EC activities were explained by Dr S N Dash and ~~Prof~~ Dr PV Suresh asked whether CC and EC activities will come for credit calculation	8. Process Instrumentation and Control has become Integrated course 9. Mass Transfer I and II is merged in Rev AR-19 and the subject name became Mass Transfer Operations

16.	7th and 8th Semester subjects were explained by Dr Dash and Dr BC Mikap Sir said that FSI should be given for 7th Sem instead of 8th Semester as the students will be busy in Campus Interview	8th Sem. Dr Dash explained that 7th and 8th courses are like package and it can be interchanged. The students can opt for Project along with FSI also
17.	Open the Dr Suresh asked whether how many students from Chemical Engg can go for Chemical Engg Open Elective course.	HOD Sir Dr Dash Sir said that about 10% of Chemical Engg students can only opt for Chemical Engg. Open Elective.
18.	Dr Suresh asked that whether Open Elective can be made Compulsory Elective or not for Chemical Engg. or not and Dr Dash Sir said that it is not possible	
19.	Assessment patterns for Team Paper, and Mini Project, and FSI and Project was explained in detail by Dr SN Dash and the outcome of all these will be weighted	In terms of Paper presentation, publications and product development and solutions for industry problems
20.	Dr ~~M~~ RV Suresh asked the difference between Honors and Minor and whether it is self study and ~~Hod~~ Dr SN Dash replied that it is self study	

21.	Dr PV Suresh asked that how the honors courses will be evaluated and Dr SN Dash Sir said that	
22.	Dr Mr T Ramakrishna requested to show the syllabus of Total Quality Management and EEPM	Dr SN Members said as those subjects fall on 5th and 7th Semester, the syllabus will be put up in the next BOS
23.	Dr Sagar asked members that whether all the honor subjects can be self study by the student or any modification is required	So Dr Suresh said that Pinch Technology and Process Development and Engg. can be difficult for the study to do self study
24.	Mem External Members en Enquired whether the Audit courses is same for all the departments	Dr Dash replied that Audit Course are same for all the departments
25.	In AR-20, ~~draft~~ Curriculum structure was kept for discussion by Dr SN Dash. The following changes were explained 1. ~~Under~~ The name of the subject Industrial Organic	Chemistry was changed to Industrial Chemistry Similarly the lab also name from Physical and Analytical Chemistry was changed to Industrial Chemistry Lab

26.	Dr. Suresh asked whether Employability Skills is mandatory 2. Phase and Chemical Equilibria and Chemical Engg. Thermodynamics were	merged to a single subject by the name Chemical Engg. Thermodynamics 3. Comprehensive Quiz I and II from 4th and 6th Semesters are removed
27.	A. Materials Science Chemical Technology was brought forward from 5th to 4th Sem as per AR-19.	
28.	Dr Suresh asked whether Employability Skills is mandatory and credit requirement for award of degree or not	Dr S N Dash replied that it is mandatory and will be evaluated in the even semester
29.	Mr T Ramakrishna enquired whether PFD and PID are there in the syllabus of CT or not	Dr Satya Sagar told PFD and PID is skills are added to the Employability Skills area.
30.	Mr T Ramakrishna and Dr Suresh suggested to reduce the content of ~~Unit III~~ Unit II in Industrial Chemistry Subject	

31.	Members suggested to reduce some content of Unit I of CETD and see the possibility of including the same in ICHEM	
32.	Members are satisfied with the Chemical Reaction Engg-I syllabus and approved as it is	
33.	Members also appreciated the Employability Skills concept and Content of the Syllabus.	
34.	Members approved the proposed CRE-I Syllabus as it is (AR-19 Revised) Mr A Prasad appreciated Introduction to Chemical Engg Syllabus and Mr Siva Naresh advised to add Thermodynamics and Mass Transfer Concepts	Members approved the remaining subjects syllabus of 3rd and 4th Semesters in revised AR-19 Syllabus as it is, as it is already approved in the 12th BOS
35.	Members also approved the proposed Chemical Technology syllabus as it is. Mr A Prasad appreciated the inclusion of Nylon 6 and Nylon 66	Members approved the remaining subjects syllabus of 1st to 4th Semesters in AR 20 syllabus as it is, as it is already approved in the 12th BOS

	Members suggested to include Comprehensive Quiz in Employability Skills – IV to compensate its removal in the modified Syllabus	(AR-20) as it is very much required in the Campus and GATE point of view

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DEPARTMENT OF CHEMICAL ENGINEERING

12th Board of Studies

15.02.2020 (Saturday)

Minutes of the Meeting

General Discussions:

No.	Points Discussed	Action Taken Report
1.	Members are made aware of the agenda, feedback analysis, suggestions received from all stake holders-11th BoS implementations are cross checked and the feed backs received from various stake holders are checked.	
2.	Members mainly focused on the weakness of the curriculum- For seminars term paper and mini project are already introduced. It was also informed that the outcomes of the Term paper shall be a publication in a conference or in any journal	
3.	English & communication skills to reduce to single course instead of two courses each- But members suggested to continue with the present curriculum keeping in view of entry /intake of rural people being playing a major role in admissions	
4.	Credits distribution for courses offered, term papers, mini projects, EC & CC activities, audit courses, MOOCs etc. are discussed - Members appreciated the credit allocation for term paper, EC & CC activities etc. Career path credits distribution is also appreciated	
5.	Detailed discussions on career path courses had been carried out after showcasing the guidelines and regulations- Members asked that if any student who have not opted career path in previous semester and wish to take it now will there be any chance. BoS Chairman clarified that this facility is not available	
6.	Comprehensive quiz is discussed in detail. The importance of preparedness of the students towards GATE is emphasized -Members appreciated the inclusion of comprehensive quiz but suggested to reduce the	Will be taken care while designing quiz questions

	number of questions which can test analytical skills like in GATE which contains 65 questions	
7.	Career path: different paths like scale up, marine corrosion, process safety, smart polymers- Marine corrosion is too specific it can be corrosion. Another suggestions like energy & environment, waste management. But the members are made aware of available faculty competence	
8.	The reasons for introduction of polymers alone was emphasized- Instead of smart polymer, the title can be smart materials such that alloys, polymer and all can be added and addressed	
9.	Discussions on other various available courses are also done- Members suggested to the change these tittles if the students are not opting these courses down the line. Also members suggested to have MOU with peers for projects etc.	
10.	MOU with peers belonging to public and private enterprises are discussed along with certificates offered during training by peers- Technique, private consultancies CEPI, IREM, Govt. organizations	Will be taken care while taking the carrier path
11.	Members asked that if a student opted for a career path (unique) he may face problem in interviews- Members are made aware that career path details will not be mentioned anywhere in the degree benefiting him eligible for all the interviews	
12.	Alignment of the career path in line with labs and resource are discussed- Different labs or components can be included supporting the career paths	
13.	Members raised a doubt that only inclusion of theoretical subjects in career path in beneficial- Lab and projects along with allotment of FSI or summer internship is also planned in line with career path	
14.	Members suggested to include industrial autonomous as career path if faculty competency is available.- To start with already the available automation equipment and available competency discussed	
15.	For opting few career path prerequisites are necessary- S0 students from other department can opt only inter disciplinary career paths if pre-requisites are not mandated from the hosted department	

16.	Functional difficulties in line with intake, interest, expertize on career path is put forth before members for suggestion- Members suggested to offer career path with the help of industry/ third party consultants to conduct classes, undertake projects to bring value and decrease the functional difficulties	Will be taken care while taking the carrier path
17.	In CACE lab inclusion of MS office- Members requested to include MS office components in CACE Lab enabling the students to learn computational skills	MS office is added in CACE lab
18.	As the no. of subjects are more and tightly packed members are requested to give some suggestions on handling / merging few subjects- Members suggested to merge thermodynamic subjects to a single subject. But have accepted to retain MTO, CRE as it is	
19.	Few subjects can be added, by combining few other courses. Energy engineering can be brought to core subject instead of elective by suitably changing the tittle- P&AC and organic chemistry also can be merged. ICT can be in 6^{th} semester or 7^{th} semester chemical process calculation can be pushed to 5^{th} or 6^{th} semesters	
20.	Fuels related course like fuel technology should be made into compulsory or integrated course instead of elective(fuels & combustion)- Members suggested to have exclusive course on fuels enabling students to be fit for every industry. The role of chemical engineers in nuclear fuel is emphasized.	
21.	Few members suggested to bring chemistry to only 1^{st} or 2^{nd} semesters only- But members suggested that students are forgetting the concepts of chemistry as they are completing the course very early in first year	
22.	The syllabus of physical & analytical chemistry and organic chemistry being followed is discussed- Members suggested to have industrial organic chemistry instead of physical & analytical chemistry and organic chemistry	P & AC and OC is merged to industrial organic chemistry
23.	Fuels theory and/or lab can be introduced in 4^{th} semester if the chemistry is combined to one subject- Members suggested to keep combined chemistry in 3^{rd} semester and name it as industrial organic chemistry	
24.	Possibility of changing integration of theory and lab- Members suggested to interchange/ swap PDC to 6^{th} sem.	

	Because studying PDC in 6^{th} sem helps students to understand instrumentation and control aspects	
25.	Possibility of subject swapping- PI with material science chemistry combined and empty slot will be filled by PI(from 5^{th} to 4^{th} sem) in place of PI(5^{th} sem) material science	Swapping is done
26.	Members requested for the availability of data management courses- Data sciences, data analytics, data management can be offered as open electives by any department	It is kept under discussion of Joint board meeting
27.	Member from pharma industry expressed satisfaction with the introduction of green technology as they wish to move from organic components to water in one control area- Green technology courses as elective is appreciated by industrial people	
28.	New electives in line with industrial or societal requirements is discussed- CO_2 capture and sequestration can be added in elective –VI	CO_2 capture and sequestration added
29.	While combining chemistry the topics which are being opted out are also equally important- The opted out topics are covered in most relevant courses like CT, polymer technology, petroleum courses	
30.	Available syllabus of the same proposed pattern is cross checked and found ok(NIT Warangal is an example)- Members have accepted for reorganizing the syllabus as required.(regarding chemistry)	
31.	Chemistry process calculations syllabus is brought to discussion before the members- The syllabus is accepted as it is without any modifications	
32.	Introduction to chemical engineering is brought to discussion- Tittle can be changed as introduction to chemical engineering and professional ethics	Tittle changed as introduction to chemical engineering and professional ethics
33.	Momentum transfer is brought to discussion. Porosity concept is to be shown in syllabus- In unit –IV under practical component measurement of flow through veturi, orifice and rotameters	
34.	Computational chemical engineering laboratory- List of experiments using which package can be mentioned as in	

	groups (this lab can be swapped to the next semester) (i.e., to 4th semester) Upgradation of laboratory practical component- Members suggested to incorporate industry problems into regular classwork	
35.	Engineering Mathematics-III- Chemical engineering problems are to be taken as tutorial and solved under these topics	
36.	Mechanical unit operations- Unit – II laws are to mentioned electrostatic and electromagnetic separations can be added. Magnetic separations can be added	
37.	Process Heat Transfer- No changes mentioned and accepted as it is. pin find efficiency calculation can be added	
38.	Mechanical unit operations laboratory- No changes mentioned	
39.	Process heat transfer laboratory- No changes mentioned	
40.	Chemical engineering comprehensive quiz – 1- Fluid mechanics title can be changed to momentum transfer	changed to momentum transfer
41.	Process instrumentation (because it is planned from 5th to 4th semester, hence discussed here- Momentum transfer & PI are to be cross – checked for repetitions, Analytical instruments can be added into 4th unit of fluid measuring instruments, Viscosity measurements, bodometer etc., can be added in fourth sem. Surface area measurements like (BET measurement) PH meter, refractory index, thin layer chromatography, conveyors Basic principles of all required results that can be obtained from the instruments can be incorporated	As per the suggestions, Dr Gangadhar framed new syllabus
42.	FSI introduced at the fag end of the course work. While working lot of doubts arises who is responsible for cleaning the doubts- Possibility of arranging FSI anywhere in the middle of their course work instead at the end of their work	
43.	Translatory regulations. credit adjustments and courses to be studied are discussed in detail submitted at the end	
44.	M.Tech transportation of water and waste water syllabus modification- All the BoS members have accepted the new proposed syllabus without modification	

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DEPARTMENT OF CHEMICAL ENGINEERING

12th Board of Studies

15.02.2020 (Saturday)

Minutes of the Meeting

General Discussions:

No.	Points Discussed	Remarks
1.	Members are made aware of the Agenda, Feed-back analysis, Suggestions received from all state holders.	11th BoS implementations are cross checked and the feed backs received from various state holdess are checked.
2.	Members mainly focussed on the weakness of the curriculum	For seminars Term papers and mini project are already introduced. It was also intimed that the outcomes of the Term papers shall be a publication in a conference or in any indexed journal.
3.	English & Communication skills to reduce to single course instead of two courses each	But members suggested to continue with the present curriculum keeping in view of costly intake of rural people being playing a major role in admissions
4.	Credit distribution for courses offered, Term papers, mini projects, EC CC activities, audit, MOOCs etc are discussed.	members appreciated the credit allocation for Term paper, ECCC activities etc. Careers path credits distribution is also appreciated
5.	Detailed discussions on Career path courses had been carried out: after showcasing the guidelines and regulations	Members asked that if any student who have not opted Careers path in previous semester and wish to take it now will there be any chance. BoS chairman clarified that this facility is not available

6.	Comprehensive quiz is discussed in detail. The importance of preparedness of the students towards GATE is emphasized.	members appreciated the inclusion of comprehensive quiz but suggested to ~~suggested~~ reduce the number of questions which can test analytical skills like in GATE we have 65 questions
7.	Career path: different path like Scale up, Marine corrosion Process Safety, Smart polymers	Marine corrosion is too specific it can be corrosion. Another suggestions like Energy & Environment, waste management But the members are made aware of available faculty Competence
8.	The reasons for introduction of polymers alone was emphasized.	Instead of Smart polymer, the title can be smart materials such that alloys, polymers and all can be added and addresses.
9.	Discussions on other various available courses are also done.	members suggested to change these titles if the students are not opting these courses down the line. Also members suggested to have MOU with peers for projects etc.
10.	MOU with peers belonging to public and private enterprises are discussed Also Certifications offered during training by peers	Technik, private consultancies CEERI, IREM, Govt organizations
11.	members asked that if a student opted for a Career path (unique) he may face problem in interviews	Members are made aware that Career path details will not be mentioned anywhere in the degree benefitting him eligible for all the interviews
12.	Alignment of the Career path inline with labs and resource are discussed.	Different labs or Component can be included supporting the Career paths.

13.	members voiced a doubt that only inclusion of theoretical subjects in Career path is beneficial.	lab and projects along with allotment of FCI or Summer internship is also planned in line with Career path.
14	Members suggested to include Industrial collaboration as Career path if Faculty Competency is available	To start with already the available education, equipment and available Competency discussed.
15.	For opting for a Career path pre-requisites are necessary.	So students from other dept can opt only Inter disciplinary Career paths if pre-requisite are not mandated from the hosted department
16.	Functional difficulties in line with intake, interest, expertise on Career path is put forth before members for suggestions	members suggested to offer Career path with the help of industry / third party consultancy to conduct classes, undertake projects to bring value and decrease the ~~functional difficulties~~
17	In CACE lab inclusion of MS office	Members requested to include MS office Competency in CACE lab enabling the students to learn Computational Skills
18.	As the no. of subjects are more and tightly packed members are requested to give some suggestions on handling / merging few subjects.	Members suggested to merge Thermodynamic subjects to a Single subject. But have accepted to retain MTO. CRE as it is.
19.	Few subjects can be added, by combining few other courses Energy Engineering can be taught in Core subject instead of elective by suitably changing the title	P&NC and organic chemistry also can be merged ICT can be in 6th Semester or 7th Semester Chemical Process Calculations can be pushed to 5th or 6th Semesters

20	Fuels related course like civil-technology and should be made into Compulsory or integrated Course instead of elective (Fuels & Combustion)	Members suggested to have exclusive Course on Fuels, enabling students to be fit for events. Introductory note of chemical Engineering in various fuels is emphasized.
21	Two members suggested to having chemistry in only 1st or 2nd Semesters only	Both members suggested that students are fulfilling the Concepts of Chemistry at three and Completing the course very easily in first years.
22	The syllabus of physical & analytical chemistry and organic chemistry being followed is discussed.	members suggested to have industrial organic chemistry instead of Physical & analytical Chemistry and organic chemistry
23	Fuels theory and/or lab can be introduced in 4th Semester if the chemistry is combined to one subject	members suggested to keep Combined ~~integrated~~ chemistry in 2nd Semester and name it as industrial organic chemistry
24	possibility of changing integration of theory and lab.	members suggested to interchange/swap PDC to 6th Sem. Because studying PDC of 6th Sem helps students to understand Instrumentation and Control aspects.
25	possibility of subject swapping	PI with material science chemistry Combined and empty slot will be filled by PI (from 5th to 4th Sem) In place of PI (5th Sem) material science
26	members requested for the availability of Data management Courses.	Data Sciences, Data Analytics Data management can be offered as open electives by any department.

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Approved

27.	Members from pharma Industry expressed satisfaction with the introduction of Green Technology as they wish to move from organic compounds to water in area control area	Green Technology course as elective is appreciated by industrial people and utilization
28	New electives in line with industrial or societal requirements is discussed.	CO_2 Capture and Sequestration can be added in elective-VI
29.	While combining chemistry the topics which are being opted out are also equally important	The opted out topics are covered in most relevant courses like CT, Polymer Technology, petroleum courses.
30.	Available syllabus of the same proposed pattern is cross checked and found ok (NIT Warangal is an example)	Members have accepted for re organizing the syllabus as required. ~~The~~ (Regarding Chemistry)
31.	Chemical process calculations syllabus is brought to discussion. before the members	The syllabus is accepted as it is without any modifications
32.	Introduction to chemical Engineering is brought to discussion	Title can be changed as Introduction to chemical Engineering and Professional Ethics
33.	Momentum Transfer is brought to discussion porosity is to be shown in syllabus	Unit-III under practical Component Measurement of flow through venturi, orifice and Rotameter

34.	Computational chemical Engineering laboratory	List of experiments using which package can be mentioned as in groups (This lab can be swapped to the next semester) (ie to 4th semester)
35	Upgradation of laboratory practical component	Members suggested to incorporate industry problems into regular class work.
36	Engineering Mathematics-III	Chemical Engineering problems are to be taken as Tutorial and Solved order these topics
37.	Mechanical unit operations	Unit-II laws are to mentioned Electrostatic and electromagnetic Separations can be added. magnetic Separations can be added.
38	process Heat Transfer	No changes mentioned and accepted as it is. pin-fin efficiency Calculations Can be added.
39.	Mechanical unit operations laboratory	No changes mentioned.
40.	process Heat Transfer laboratory	No changes mentioned.

41.	Chemical Engineering Comprehensive Quiz-1	Fluid Mechanics title can be changed to momentum Transfer
42	Process Instrumentation (because it is planned from 5th & 6th semester, hence discussed here.	Momentum Transfer & PI are to be Cross-checked for repetations
		polymer Analytical Instruments can be added into 4th unit of fluid measuring instruments
		Viscosity measurements, Rodometer etc can be added in fourth Surface area measurements like (BET measurements)
		pH meter, Refractory Index, Thin layer chromatography Converters,
		Basic principles of all required results that can be obtained from the instruments can be incorporated
43	FSI introduced at the last end of the course work. while working lot of doubts arises who is responsible for clearing the doubts	Possibility of arranging FSI anywhere in the middle of their course work instead at the end of their course work.

44	Translatory regulations. Credit studied are discussed in detail	adjustments and courses to be Internship reports will be submitted at the end.
45	M.Tech Transportation of water and waste water Syllabus modification is	All the BOS members have accepted the given proposed Syllabus without modification

Name	Signature
Dr. B. C. Maikap Professor-in-I' Kharagpur Email: bcmeikap@che.iitkgp.ernet.in Voice: 8637893578	15/02/2020
Dr. S. V. Naidu Professor, Andhra University, Vizag Email: naidu.sv.@gmail.com, Voice: +91 9441293204	ABSENT
Dr. P. V. Suresh Assoc. Professor, NIT Warangal Email: pvsuresh@nitw.ac.in , Voice: +918332969402	15/02/20
Mr. Ramakrishna. T(Spl. Invitee) Manager-Launch project management Dr Reddy's Laboratories Ltd Pydibheemavaram	15/02/2020
Mr. A. Prasad Process Manager ONGC, Kakinada Email: anthakapalli.prasad@gmail.com Voice: 9704308312	
Dr. S.N.Dash	15/02/2020
Dr. M.Krishna Prasad	
Dr. P.S.Sagar	
Dr. H.Joga Rao	HJogaRao
Dr. G.Kalyani	15/02/2020
Dr. M.Gangadhar	M. Gangadhar
Dr.Deepshika Datta	
Mr.Shaik Shadulla	

Dr. K. Vatsavaya Rao

Prof. K. Gowrisaidu

K. Vatsavaya

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DEPARTMENT OF CHEMICAL ENGINEERING

11th Board of Studies

29.06.2019 (Saturday)

Minutes of the Meeting

General Discussions:

No	Points Discussed	Remarks
1.	HOD Discussed about the feed backs received from Alumni, Industry and Academia	Members accepted the suggestion are good and needed to be implemented
2.	Members are made aware of the structure and allotment of credits	
3.	Members suggested to show credit breakup for BSH 39=35+4* stating 4* are not considering for acquiring degree but mandatory	ECCC employability skills industry driven course are to be clearly mentioned at the bottom of the structure
4.	Members discussed that allotting credits to ECCC may result in some burden to students	
5.	The structures of FSI & Non FSI modes are discussed. The members showed satisfactory	Common structure of credits are ok
6.	Members discussed the reason for putting the credits for ECCC and others	As per AICTE 160 credits
7.	Structure of mid exams are discussed and weight stage of assignment is discussed	Members are made aware that the same is followed throughout all departments
8.	Grading is discussed with members i.e. hybrid grading system at college	Members suggested that absolute grading will be better instead of hybrid grading
9.	Members are made aware of open book exam planning to be introduced for every course	Members suggested open book questions are not to be made mandatory for all courses
10.	Open elective courses and their HOT levels in question papers are discussed	
11.	Open book exams are discussed thoroughly	Teacher have to train the students before hand to make students ready.
12.	One question is sufficient for open book exams	Lot of scope will be there to students to learn
13.	Same credits for projects and internships (Breakup of credits discussed)	Attendance is mandatory
14.	Industry driven courses and credits earned can be compensated with one course	Members extended his interest to conduct industry driven course
15.	Grading shall be on percentage based instead of marks for industry driven course	

16.	PEOs, POs are discussed, PEO, PEO3 are good	In PEO2 can be related to both industry and society in PEO2,remove basics and keep apply
17.	PO13 which was most likely with PO3 are there and PO13 is to be written into 2POs	PO13 is rewritten and PO14 is framed as shown below*
18.	In 3rd semester ICHEM is there which can be there in 1st/2nd sem, CTCE Lab is also conducted too early	HoD discussed on the contact which has ethics and knowledge on all the subjects, linkage between subjects
19.	Chemical technology syllabus shall be included with all industries where students are being absorbed in Lot and which are in demand	CT can be read after mass transfer-II. Topics like CO capture , CO2 sequestration & utilization can be included
20.	In each elective more subjects can be added like CAD/CAM/Industries using software like Honeywell, SCADA,DCS, ABB etc	Some of the electives suggested by members are Fuel cell engg. P&ID,PFDs, Artificial lift in solvent recovery, reservoir Engineering, Upstream engg,
21.	EEPM can be a self-study course in 7th / 8th semester for FSI. So it is to be replaced by another subjects	EEPM can be managed with NPTEL/ video lectures
22.	Industrial safety can be kept under one credit course instead of elective / keep both	
23.	AR13 regulation detained student has now rejoined during AR16 regulation BOS members are requested to give suggestion	BOS recommended the student has to follow the same AR13 regulation however the student who have joined 3rd or 5th sem to take up current regulation
24.	Corrosion Engg. is to be shifted to elective-5 and fuel cell technology to be added in elective-2	

***PO14:** Utilizing the knowledge and skill to solve new problems as needed by the society and industry

PO13: ~~Apply the basics of chemical Engg. concepts to meet the new knowledge needed by the society through automation~~

(or)

PO13: Apply the unit operations and processes in chemical and allied process industries

(or)

PO13: ~~Apply the knowledge of chemical engineering in a wide range industrial and professional development~~

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DEPARTMENT OF CHEMICAL ENGINEERING

11th Board of Studies

29.06.2018 (Saturday)

Minutes of the Meeting

General Discussions:

No	Points Discussed	Remarks
1.	HOD discussed about the feed backs received from Alumni, Industry and Academia	Members accepted the suggestions are good and needed to be implemented
2.	Members are made aware of the structure and allotment of credits	
3.	members suggested to show credit breakup for BSH 39 - 35+4* showing A* are not mandatory for aquiring degree	* ECCC, Employability skills Industry driven course are to be clearly mentioned at the bottom of the structure
4.	members discussed that alloting credits to ECCC may result in some burden to students	
5.	The structure of FSI & non-FSI modes are discussed. The members showed satisfaction	Common structure of credits are ok.
6.	Members discussed the reason for putting the credits for ECCC and others	As per AICTE 160 credits
7.	Structure of mid exams & pare discussed and weightage of assignment is discussed	Members are made aware that the same is followed through out all departments
8.	Grading is discussed with members i.e Hybrid grading System at college	Relative or absolute grading will be better, instead of hybrid grading
9.	members are made aware of open book exams planning to be introduced for every course	members suggested open book questions are not to be made mandatory for all courses
10.	open, elective courses and their HOT levels & question papers are discussed	
11.	Open book exams are discussed thoroughly	Teachers have to train the students before hand to make students ready
12.	one question is sufficient for open book exams	lot of scope will be there to students to learn
13.	Same credits for projects and internships (Breakup of credits discussed)	Attendence is mandatory
14.	Industry driven courses and credits earned can be compensated with one course	members extended his interest to conduct industry driven course.

(PO14) utilizing the know and skill to solve new problems as needed by the society and industry

(PO13) Apply the basics of chemical Engg. Concepts to ~~solve~~ meet the new knowledge needed by the society through automation

(or)

(PO13) Apply the unit operations and processes in chemical and allied process Industries

(or)

(PO13) Apply the knowledge of chemical Engineering in a wide range industrial and professional development

* Honeywell, Scadia, DCS, ABB, software skills in curriculum
* Artificial lift in solvent recovery, Reservior Engineering, upstream Engg subjects can be added to Elective

15.	Grading shall be on percentage basis instead of marks for Industry Oriented course	
16.	PEOs, POs are discussed, PEO1 & PEO3 are fixed	In PEO2 can be related to both Industry and Society
17.	PO15 which was most closely with PO3 are there. And PO15 is to be rewritten into 2 POs	In PEO2, remove basics and keep it simple and good. PO15 is, written more specific
18.	In 3rd semester ICEM is there which can be there in 1st/2nd sem, CTCE lab is also conducted too early.	PO14 can be on Hod discussed, on the content which has ethics and knowledge on all the subjects, linkage between subjects
19.	Chemical Technology syllabus shall be included with all industries where students are being absorbed in Jot and which are in demand	CT can be read after Mass Transfer-II so in line with Co2 Capture, Co2 Sequestration & utilization Fuel Cell Engg. PR I.D, PFDs
20.	In each elective more subjects can be added like CAD/CAM/Industry using softwares	
21.	EEPM Can be a self study course in 7th/8th Semester for FSI. So it is to be replaced by another subject	EEPM can be managed with NPTEL / Video lectures
22.	Industrial Safety can be kept under 1 credit course instead of elective / keep both	
23.	ARIS Regulation, detained student has now rejoined during AR16 regulation	BOS recommended the student has to follow the same ARIS regulation, however the student who have joined 3rd or 5th Sem to take up Current regulation
24.	BOS Members are requested to give suggestion	
25.	Corrosion Engg is to be shifted to elective-5 and fuel cell technology to be added in elective-2.	

Name	Signature
Dr. B.C. Meikap, Professor IIT Kharagpur	29/06/2019
Dr. P.V. Suresh, Assoc. Professor, NIT Warangal	
Mr. A. Prasad, Executive Engineer, ONGC Kakinada	29/6/19
Mr. T. Ramakrishna, Manager Dr. Reddy's laboratories ltd., Srikakulam	29/06/2019.

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DEPARTMENT OF CHEMICAL ENGINEERING

10th Board of Studies

15.09.2018 (Saturday)

Minutes of the Meeting

General Discussions:

No	Points Discussed	Remarks
1.	A detailed briefing of minutes of the meeting held during 9th BOS is done.	
2.	ICHEM syllabus which included ethics is highly appreciated	The syllabus pattern is appreciated and is highly required.
3.	Mat lab and aspen plus required by stakeholders have made compulsory in the curriculum	The efforts were appreciated by the members
4.	PO attainments are discussed by Dr.R.Srikanth	
5.	Internal and external evaluation patterns involving CO's & PO's are discussed	
6.	Evaluation process is also kept in BOS for ratification from 10th BOS onwards.	
7.	Members suggested to verify whether CO is achieved/not after completion of each unit.	It is mostly depending on individual faculty whether be performs reverse engineering.
8.	Feedbacks for assessment are collected online and offline.	The collected feedback forms in hardcopy are shown and appreciated.
9.	Members have asked for the assessment in the evaluation pattern.	
10.	Members have inquired whether PO's are mapped to institutional vision or not.	
11.	PEO's attainment is not completed since the survey reports from stakeholders not received.	PEO attainments shall be projected in 11th BOS.

12.	Members are made aware of the modifications made in CO's	Refinements are appreciated by the members.
13.	Too much description in CO's are to be avoid only keywords detailing the CO's	Faculty explained that based on the syllabus the CO's are framed very specific. This enables external examiner to frame questions exactly.
14.	In COs 3, 4,5 flowcharts word can be included under fertilizer technology.	
15.	The CO-PO mapping for all the subject are discussed in detail.	
16.	Members suggested that PO 13 can be changed with a common word instead of mentoring every subject name.	Chemical and allied industries of societal importance are also discussed under PO's
17.	Members suggested to retain the PO13 as it is after sufficient discussion by the faculty	
18.	CO-PO mapping for all the subjects are discussed in detail	
19.	CO-PO mapping for open electives for ISHM is extensively discussed	PO can be added to ISHM elective under mapping
20.	M.Tech environmental Engg. at IIT-Rorkee can be cited as an example	Members suggested to request JNTU to give
21.	Members suggested to verify M.Tech Env. Engg. Syllabus with respect to other premier includes and modify syllabus.	Multi-disciplinary entry of students shall be always necessary.
22.	A seminar presentation can be included in the curriculum (M.Tech)	
23.	Progress / evaluation of the project at the end of 3rd semester can be included and at least 4 credits can be given under internal evaluation. And 16 credits can be given in the 4th semester for external evaluation.	
24.	The course outcomes of the process instrumentation subject were also changed based on the suggested from members	CO's for PI subject have been changed as per the suggestions.

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DEPARTMENT OF CHEMICAL ENGINEERING

10th Board of Studies

15.09.2018 (Saturday)

Minutes of the Meeting

General Discussions:

No	Points Discussed	Remarks
1.	A detailed briefing of minutes of the meeting held during 9th BOS is done.	
2.	ICHEM syllabus which included ethics is highly appreciated	The syllabus pattern is appreciated and is highly required.
3.	MatLAB and Aspenplus requested by stakeholders have made compulsory in the curriculum	The efforts were appreciated by the members.
4.	PO attainments are discussed by Dr. R. Srikanth.	
5	Internal and External evaluation Patterns involving CO's & PO's are discussed.	
6.	Evaluation process is also kept in BOS for ratification from 10th BOS onwards.	
7.	Members suggested to verify whether CO is achieved/not after completion of each unit	It is mostly depending on individual faculty whether he performs Reverse Engineering
8.	Feed backs for assessment are collected online and offline.	The collected feed back forms in hardcopy are shown and appreciated
9.	Members have asked for the assignment in the evaluation pattern	
10.	Members have inquired whether PO's are mapped to institutional vision or not.	
11.	PEO's attainment is not completed since the survey reports from stakeholders not received	PEO attainments shall be projected in 11th BOS.
12.	Members are made aware of the modifications made in CO's	Refinements are appreciated by the Members.

13.	Too much description in COs are to be avoided only keywords detailing the COs.	Faculty explained that based on the syllabus the COs are framed very specific. this enables external examiner to frame questions exactly.
14.	In COs 3,4,5 Flowcharts word can be included under Fertilizer Technology.	
15.	The CO-PO Mapping for all the subjects are discussed in detail	
16.	Members Suggested that PO13 can be changed with a common word instead of mentioning every subject name.	chemical and allied industries of societal importance are also discussed under PO3.
17.	Members suggested to ~~add the name as~~ retain the PO13 as it is after sufficient discussion by the faculty	
18.	CO-PO Mapping for all the subjects are discussed in detail	
19.	CO-PO Mapping for open Electives for ISHM is extensively discussed.	PO-7 can be added to ISHM elective under Mapping
20.	M.Tech Environmental Engg. at IIT-Roorkee can be cited as an example for JNTUK, to request for the eligibility of all branch students in M.Tech Env. Engg.	Members Suggested to request JNTU to give permission for all B.Tech students into M.Tech Environmental Engg.
21.	Members Suggested to verify M.Tech Env. Engg. Syllabus with respect to other premier institute and modify Syllabus with Chemical Engg. flavour and send representation to the university to support the eligibility of other branch students	Multi disciplinary entry of students shall be always necessary.
22.	A seminar presentation can be included in the Curriculum (M-Tech)	
23.	Progress/Evaluation of the project at the end of 3rd semester can be included and atleast 4 credits can be given under internal evaluation.	
	And 16 credits can be given in the 4th semester for external evaluation	
24.	The ~~codes for~~ course outcomes of the process Instrumentation subject were also changed based on the suggestions from members	~~only~~ CO's for PI subject have been changed as per the suggestions

Name	Signature
Dr. B.C. Meikap	15/09/2018
Dr. S.V. Naidu	15/09/2018.
Dr. Shiva Nagesh. M	15.9.2018
Dr. S.N. Dash (HOD-Chemical Engg.	
Dr. M. Krishna Prasad	
Dr. R. Srikanth	R. Srikanth.
Dr. M. Gangadhar	M. Gangadhar
Mr. P. Satya Sagar	
Dr. H. Joga Rao	H Jogarao

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DEPARTMENT OF CHEMICAL ENGINEERING

9th Board of Studies

24.02.2018 (Saturday)

Minutes of the Meeting
7th & 8th Semester Courses

General Discussions:

No	Points Discussed	Remarks
1	A brief presentation is given to the members regarding the AR16 course structure and is compared with AR12 & AR13 structure.	
2	Ratification of Introduction to Chemical Engineering subject is done in current BOS.	As the Introduction to Chemical Engineering subject is not ratified in previous BOS, It is planned to ratify the subject now.
3	Discussed about the first year sections where all the students are combined irrespective of branches.	Members were happy regarding the blend of first year students in all sections
4	Members have given suggestions to recheck the titles of Homogeneous Reaction Engineering and Heterogeneous Reaction Engineering as observed in HODs' presentation. They have suggested to change the titles as CRE-I and CRE-II as per AICTE New Syllabus	The previous titles are not representing the entire concepts being taught.
5	Members have given suggestions to introduce a course related to Pharmaceutical Industry in Industry Driven Courses (IDC).	Scope of placements is good in Pharmaceutical Sector. The panel have decided to include the subject as Industry Driven Course
6	Members have given suggestions to introduce course related to Pharmaceuticals in Electives.	HOD briefed that the course were already present under the present structure and the syllabus is discussed.

7th and 8th Semester Subject Discussions:

No	Points Discussed	Remarks
1	**Process Modeling & Simulation:** Dr.R.Srikanth have discussed in detail about the current syllabus. Numerical methods have been removed here as they are discussed in Mathematics-III.	
2	**Process Modeling & Simulation Lab:** Members have inquired about the availability of software pertaining to the course. Members have suggested to include more recent and advanced equipment to be solved in lab.	Panel has agreed to include few problems related to advance equipment like packed bed reactor, reactive distillation columns etc. Members were happy to see mini-projects in lab courses
3	**Mass Transfer Operations Lab:** Dr.R.Srikanth have discussed in detail about the current syllabus. Members have given suggestions to cover this lab before 7th semester, if possible.	Panel discussed the technical difficulties faced if the course is conducted after 6th semester.
4	**Industrial Pollution Control Engineering:** Panel have discussed in detail about the current syllabus. Members have given suggestions to introduce few topics of Industrial Safety in IPCE in 1 or 2 units as ISHM is only Open Elective and only few students are allowed.	Panel has agreed and Unit-IV has to be changed with safety topics
5	**Transport Phenomena:** Panel have discussed in detail about the current syllabus. Members have given suggestions to trim / add syllabus based on the students ability	Members expressed satisfaction with the existing syllabus
6	**Corrosion Engineering:** Panel have discussed in detail about the current syllabus.	Members expressed satisfaction with the existing syllabus.
7	**Fluidization Engineering:** Panel have discussed in detail about the current syllabus.	Members expressed their view in conducting open book exam for this course.

	Members have given suggestions to trim a lot if this course is offered.	
8	**Fuel Technology:** Panel have discussed in detail about the current syllabus. Members have given suggestions to remove few topics which are covered earlier. New topics like Biofuel and Biomass Conversion Technologies, Nuclear fuels and Fuel Cell Technologies are to be added. Members suggested to recheck the books.	Unit-IV is already present in Unit-1. Fuel Cell Technology can be included as a chapter under unit-4 Unit-4 heading changed to alternative fuels
9	**Introduction to Nano- Technology:** Panel have discussed in detail about the current syllabus. Members have given suggestions to remove few methods and introduce direct applications of Nano-Technology in various industries. Unit-III and Unit-IV can be simplified.	Side headings for Unit-I as Introduction to Nano-Technology and Nano-Structures. Few topics are removed from Unit-III and Unit-IV and1 simplified
10	**Chemical Engineering Mathematics:** Panel have discussed in detail about the current syllabus. Members have given suggestions to reduce the syllabus a lot as the content is too big in students point of view	Unit-IV is to be completely removed and Unit-1 will be split into two units. Unit-2 will be renamed as unit-3 and Unit-4 will be renamed as Unit-4 Few methods will be removed from existing unit-II
11	**Design and Analysis of Experiments:** Panel have discussed in detail about the current syllabus.	Members expressed satisfaction with the existing syllabus.
12	**Integrated Solid Waste Management:** Panel have discussed in detail about the current syllabus. Members have given suggestions to increase the details of the contents enabling the external paper setters/examiners to frame questionnaire as per the designed syllabus. Solid waste	Members expressed satisfaction with the existing syllabus. Solid waste management in different industries are to be added based on the available study books/Research

	management is very challenging subject.	articles
13	**Process Intensification:** Panel have discussed in detail about the current syllabus. Members have given suggestions to elaborate the contents to be taught more precisely.	Members expressed satisfaction with the existing syllabus.
14	**Process Optimization:** Panel have discussed in detail about the current syllabus.	Members expressed satisfaction with the existing syllabus.

Ratification of pending course from 3rd Semester:

No	Points Discussed	Remarks
1	**Introduction to Chemical Engineering:** Panel have discussed in detail about the current syllabus. Members have given suggestions to merge heat and mass transfer in Unit-II and renamed as fundamentals of mass transfer operations and topics are elaborated as distillation, extraction, absorption, adsorption, leaching and drying. Humidification, crystallization is added to self-study.	Unit-II heading is changed to as unit operations. Unit-IV is split into Unit III and Unit IV. Subject title is changed to Introduction to Chemical Engineering and Professional Ethics Members have ratified the course but Cos needed to be reframed and rechecked.

Ratification of Internal Assessment Pattern:

No	Points Discussed	Remarks
1	Internal assessment may be modified based on HOT Skills.	HOT skill set may be suitably modified depending on the nature of the course and finally ratified

Ratification of CO-PO mapping:

No	Points Discussed	Remarks
1	PO13 is derived from all POs and is designed in line with the course (Course/Branch Specific)	Ratified accordingly

Variance analysis of AICTE model curriculum with AR16:

No	Points Discussed	Remarks
1	HOD compared the syllabus and elaborated the details	Members suggested to include Material Science subject in AR16
2	Chemical Engineering Lab-I • Process Heat Transfer Lab • Mass Transfer Operations Lab • Mechanical Unit Operations Lab Chemical Engineering Lab-II • Chemical Reaction Engineering Lab • Mechanical Unit Operations Lab	Labs grouped accordingly
3	AICTE list of electives needed to be included to the existing list of AR16 electives	Agreed to include
4	At present only 1 open elective course is being offered	There is no difficulty in adding 4 open electives as per AICTE guidelines.
5	Discussion on the implementation of AICTE curriculum in future.	There is no difficulty in adopting AICTE curriculum in future in toto.

Concluding Discussions:

No	Points Discussed	Remarks
1	HOD discussed about the cognitive levels and assessment patterns	Members expressed satisfaction regarding the preparation of question paper as per cognitive levels.
2.	7th and 8th semester courses syllabus is discussed and BOS members suggested necessary modifications	
3	T.Ramakrishna, BOS Member agreed to have a MOU with Chemical Engg., GMRIT for a contemporary course in Pharmaceutical Sector.	Preparation of syllabus will be done by T.Ramakrishna, BOS Member
4	Ratification of pending course from 3rd Semester Ratification of Internal Assessment Pattern Ratification of CO-PO mapping	Discussed and found satisfied and Ratified
5	Variance analysis of AICTE model curriculum with AR16	Ratified and accepted to include material science course

6	All the core electives of AR16 of GMRIT may be included to the AICTE curriculum and may be included.
7	Few more open electives may be envisaged and they may be offered for 4 open electives of AICTE.
8	In AR16 of GMRIT, besides AICTE subjects few more subjects in electives and few more labs are also present. These labs and subjects can be dealt for practical exposure of students.

Name	Signature
Prof.S.Subba Rao (Spl Invitee)	
T.Ramakrishna (Spl Invitee)	
Dr.M.Krishna Prasad	
Dr.S.N.Dash	
Dr.R.Srikanth	
Dr.G.Kalyani	
Dr.H.Joga Rao	
Dr.M.Gangadhar	
Mr.P.Satya Sagar	

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DEPARTMENT OF CHEMICAL ENGINEERING

8th Board of Studies

1.7.2017 (Saturday)

Members Present

No.	Name	Organization	Signature
1.	Prof. P. S. T. Sai	Professor, IIT Madras	
2.	Dr. V. V. Basava Rao	Professor, Osmania University, Hyderabad	
3.	Dr. S. V. Naidu	Professor, Andhra University, Vizag	
4.	Dr. M. Srinivasa Rao (JNTU Nominee)	Manager (R & D), Vizag Steel plant	
5.	Dr. P. V. Suresh	Asst. Professor, NIT Warangal	
6.	Dr. Srikanta Dinda	BITS Pilani, Hyderabad Campus	
7.	Dr. SVSR Krishna Bandaru (Spl. Invitee)	Professor & Head, Manipal Institute of technology, Karnataka	

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8th BOS Meeting: Chemical Engineering Department

Venue: Computer Centre, Department of Chemical Engineering

Date & Time: 01-07-2017; 9:20 AM to 5:00 PM

Sub: 1. UG: AR-16 Syllabus -Course Content

External BOS Members Present:

Dr. M.SrinivasaRao (JNTU Nominee)
Manager(R & D), Vizag Steel Plant

Dr. P.V.Suresh
Assistant Professor, Dept. of Chemical Engineering, NIT Warangal

Dr. Srikanta Dinda
Associate Professor & I/C Head, BITS Pilani, Hyderabad Campus

Dr. SVSR Krishna Bandaru (Spl. Invitee)
Professor & Head, Manipal Institute of technology, Karnataka

Faculty Members Present:

- Dr. M. Krishna Prasad (Professor & HOD)
- Dr. S.N.Dash (Professor)
- Dr. R. Srikanth (Assoc. Professor)
- Dr. V. SrinivasaRao (Assoc. Professor)
- Dr. M. Gangadhar (Sr.Asst. Professor)
- Ms.G.Kalyani(Sr.Asst. Professor)
- Mr. P. S. Sagar (Sr.Asst. Professor)
- Mr. H. JogaRao (Asst. Professor)

Minutes of the BOS meeting

Agenda:

- Discussion on Syllabus pattern for 5th & 6th semester of Chemical engineeruing-UG:AR-16 Academic regulations.

HOD, Dr. M. Krishna Prasad explained the BOS meeting plan and the members were appraised about the 7th BOS meeting highlights and action taken, there after.

General Discussions:

- Members suggested that for the purpose of CGPA calculations for the students who are opting for more electives, in such cases, the calculation of CGPA should be done on core subjects and along with it the elective in which they scored good grades are also to be considered.
- Request for EL for the faculty who are attending internship program without loosing the actual vacation.
- Members asked for the total number of core courses in AR16 syllabus and they felt that the numbers of courses may be reduced for the benefit of the students as well as the faculty. But internal committee told that the number of subjects and structure were freezed by the academic council. Anyhow the suggestions will be positively informed to the academic council.
- Upon close observation on the structure, it is observed that faculty finds no time as they are occupied with many a works like paper valuation, notes preparation, projects, term paper, internship, research, accreditation works etc. But internal team replied that the if it is taken in true spirit, it can lead to the benefit of both students and faculty in multiple folds.
- Students are loosing one subject when they go for full semester internship program. It is adviced to cover all core and important subjects earlier well before going to internship and only elective courses at the end. Otherwise load increases for the faculty in delivering the course twice for the FSI and Non-FSI students.
- Looking at the number of subjects in the curriculum the BoS members told that the students are under tremendous stress and will end up with psychological ills.

- Every department should have a faculty counceller for students to address their psychological ills if any.
- In M.Tech cuuriculum, a flavor of Civil along with Mechanical Engg. Faculty shall also be given for the subjects like waste water treatment processes. It doesnot mean that Chemical People cannot handle this subject, but it is meant that the indepth flavor of approach towards the subject from Civil Engg. Point of view is more appreciable.
- Feedback on interal question paper: Out of two sets supplied to the exam section, they are using only one set. The second set can be used in the next year.
- Feedback on exteral question paper: Overall it is Good.
- Theory and corresponding lab is being conducted in the same semester which is not appreciable. Instead, members advised to conduct theory first and then in the next semester the lab.

Engineering Mathematics III

- Course is good. Because it covers all the topics and students will be on safer side for interviews. Otherwise, if advanced tiles like Z or Laplace transforms are provided in the title, the interviewers may go to very depth in the interviews. Finally, members expressed satisfaction about the syllabus

No.	Points Discussed	Remarks
5th Semester		
1	Engineering Economics & Project Management:	
2	Homogeneous Reaction Engineering: Members discussed and felt syllabus is satisfactory. Members enquired whether FPS os SI units are used	They suggested faculty to use only SI system to frame question paper. Confine 4th unit delivery to just outlining the topics but not to go into that depth otherwise it will be a bit difficult for the students. But the topics are well placed here and they cannot be avoided
3	Chemical Technology: Is it possible to reduce flow sheets to the minimum extent possible and it appears to be a very dry subject and very difficult for the students to remember all the flowsheets. There is a	For evaluating the course the process description is taken into maximum priority but a few marks are allotted to the flowsheets. Advanced processes like distillation column etc are there then this subject should be accommodated at the later

	high possibility that students shall make a mistake. If required some more topics can be added like dry & steam reforming etc. Time may not be sufficient to teach all the topics and tutorial classes may be compensated with lectures.	semesters. This subject can also be placed in 3rd semester if only little emphasis only is given on the advanced processes
4	Principles of Mass Transfer: Some terms like Galons etc can be avoided for question paper and preferably SI units are to be used in question paper setting.	Members were explained about the importance of this course as a integrated course. The practical componants of the syllabus in relation to the unit syllabus were discussed. Give more priority to solid diffusion like moisture content in bricks turmeric and salt penetration problem etc. Members were satisfied with the syllabus
5	Process Dynamics & Control: Under Unit II Remove the words first order systems	Cohen Coon Methods is kept in self study but can be kept under the actual syllabus as a basic study. Since no body is using either of the mentioned methods, instead they are going for simulation softwares. Under Unit-IV IMC a moder technique may be added
6	Elective I/CC Pharmaceutical Technology:	Members expressed satisfaction about the syllabus
	Pharmaceutical Technology:	Members expressed satisfaction about the syllabus
	Polymer Technology:	Members expressed satisfaction about the syllabus
	MOOCs-1:	Members expressed satisfaction about the syllabus
7	Process Control Lab:	Members expressed satisfaction about the syllabus
8	Term Paper/Mini Project:	Members expressed satisfaction about the idea of introduction of this activity but they have inquired about the space constraints if every batch of students venture into makin new models every time
9	Summer Internship:	
10	CC & EC Activity II:	Members enquired what are the different activities are being planned and how evaluation is being made so that the students will not loose their interest in the activity and some students who are weak I

		some academic sujects may excel in this area ad prove themselves to e successful I their career
11	Employability Skills III:	
6th Semester		
1	Applications of Mass Transfer: Can skip some parts under leaching otherwise it would be a very huge syllabus.	As all the topics are important and was not able to avoid any topic it was decided to that the syllabus is left unchanged. If you drop some topics here then extra burden/load will be there on other subjects like Design etc. Instrumentation topics can be given for the students as seminar topics and a subject can be removed leaving a place to the new subject
2	Heterogeneous Reaction Engineering: Syllabus is found ok	Members expressed satisfaction about the syllabus
3	Chemical Process Equipment Design: Two design courses in the same semester may not look good.	This course may require slightly modified Question Paper structure so that the learning evaluation can be appropriate. Hence suggested to explore minium number of questions instead of 10. Conducting test will be a it difficult and students will feel that they are presurized
4	Chemical Engineering Plant Design & Economics: Two design courses in the same semester may not look good. Involve industry persons to teach this course a bit otherwise crux part will be lost if the faculty were only from academia for this course (to give a flavor for this course)	TP can be brought in this semester. TP is not important for GATE point of view
5	Elective II/CC: Material Science & Engineering:	Members expressed satisfaction about the syllabus
	PRPE:	Members expressed satisfaction about the syllabus
	Energy Engineering:	Members expressed satisfaction about the syllabus
	IDC:	Members expressed satisfaction about the syllabus

6	Chemical Reaction Engineering Lab: Discussed about the pattern of experimentation being conducted in the lab	Members expressed satisfaction about the syllabus
7	Elective III (Open Elective) ISHM:	Only few number of chemical students are allowed to take this course as this is open elective Members felt that it should be placed as a compulsory course for Chemical Students. A separate course in open elective can be prepared
8	Term Paper/ Mini Project:	Members expressed satisfaction about the idea of introduction of this activity but they have enquired about the space constraints; if every batch of students venture into making new models every time.
9	Audit Course:	The details of the course and its evaluation have been discussed and members expressed satisfaction
10	CC & EC Activity II:	Members enquired what are the different activities are being planned and how evaluation is being made so that the students will not loose their interest in the activity and some students who are weak I some academic sujects may excel in this area ad prove themselves to e successful I their career
11	Employability Skills IV:	

General Points discussed in the Meeting:

HOD, Dr. M. Krishna Prasad explained the BOS meeting plan and the members were appraised about the 7th BOS meeting highlights and action taken, there after.

GMR Institute of Technology
An Autonomous Institute Affiliated to JNTUK, Kakinada

GMRIT Training Tomorrow's Engineers Today

DEPARTMENT OF CHEMICAL ENGINEERING

7th Board of Studies

17.12.2016 (Saturday)

Members Present

No.	Name	Organization	Signature
1.	Prof. (Dr) Prof. P.S.T.Sai	Professor , Chemical Department, IIT.,Chennai	17/12
2.	Prof.(Dr).V.V.Basava Rao	Professor , College of Technology, Osmaina University, Hyderabad	17/12/16
3.	Dr.A.Gangagni Rao	Principal Sr.Scientist at Indian Institute of Chemical Technology, Hyderabad	17/12/16
4.	Dr. P.V.Suresh	Assistant Professor, Dept. of Chemical Engineering, NIT Warangal	17/12/16
5.	Dr. M.Srinivasa Rao	Dy.Manager (R & D), Vizag Steel Plant	17/12/16
6.	Prof. Pedireddi Venkateswara Rao	School of Basic Sciences , Prof. of Chemistry, IIT- Bhubaneswar	17/12/16.

Faculty members present:

- Dr. S. K. Behera (Professor & HOD)
- Dr. M. Krishna Prasad (Professor)
- Dr. S.N.Dash (Professor)
- Dr. R. Srikanth (Assoc. Professor)
- Dr. V. Srinivasa Rao (Assoc. Professor)
- Dr. P. Kalpana (Assoc. Professor)
- Dr. M. Gangadhar (Sr.Asst. Professor)
- Ms.G.Kalyani (Sr.Asst. Professor)
- Mr. P. S. Sagar (Sr.Asst. Professor)
- Dr. G. Babu Rao (Sr.Asst. Professor)
- Mr. H. Joga Rao (Asst. Professor)
- Dr.K.Gouru Naidu (Professor)
- Dr.M.V.Subba Rao (Assoc. Professor)
- Dr.K.Koteswara Rao (Sr.Asst. Professor)

Minutes of the BOS meeting

Agenda:

- Discussion on Course Titles and Course content as per new course structure for UG/:AR-16 Academic regulations.

S.No.	Name of the (new course) Title to be introduced	Semester	Suggestions
1	Physical & Analytical Chemistry	3rd	• Most common applications is sufficient. • Basic principle and five applications of Raman spectroscopy/X-Ray diffraction/SEM/ etc can be

			included (more analytical techniques must be required) • Syllabus is written in long line but the content is small so new analytical techniques mentioned above can be added to the question being asked by HOD . • Remove molecular spectroscopy from unit-3 • XRD: Brags law and seven Bravious lattices can be added but neglect if it were added in Engg. Physics. • Or it can be added in self study course and IR spectroscopy under self study can be removed. • Delivery hours can be taken care based on the syllabus modification. P&AC Lab: • 10 Experiments are sufficient to be performed by students out of all available.
2	Organic Chemistry	3rd	• SN shall be of the form S_N^1 • Mechanism may or may not be included based on the students interest. • Concepts of stereo chemistry is most required but not included. • Remove I.L.Finar book from text book and keep M.K.Jain's book, O.P.Agarwal, Morsion and Boid
3	CETD		• Syllabus looks standard and ok • Steam tables are required in the syllabus not in italics, if required liquefaction, refrigeration etc can come into self study. • Peng-Robinson equation as self study is good and

			• cubic equation of state as main content is good. • Reference books with author Halder's, Nag's may be removed as it contains mainly mechanical contents.
4	PCE	4th Sem	• Content looks very lengthy ut ok • Change NRTL,UNIQUAC, UNIFAC Models to self study. • Remove modified Roult's law as the essence is already there or write in simple sentence for ideal and non-ideal solutions. • Multicomponant dew point and bubble point in self study. • 11 hours for unit-2 and 12 hours for unit-4 • VLE from equation of state
5	Introduction to Chemical Engg	3rd	• According to BOS team members, the syllabus is tough to teach and can be removed, instead a new course can be added. • Just to give a flavor of Chemical Engineering this course can be added but upon removing all the details of topics like pumps, distillation etc only basics or introductions are sufficient. • Ghoshal's book on this course is not sufficient to teach. Instead suggested text books are approved. • More detailed syllabus which is to be incorporated in marked in the new text book by the BOS Members.
6	Process Instrumentation	3rd	• Turorial not required and hence can be removed from structure.

			• Credits shall be given for the tutorials also but may be in next regulations this point may be raised. • Flow of dry materials as self study
7	Instrumentation Lab		• Remove organic componds using spectrometer • Remove rotametercalibration in MT lab list of miniprojects
8	Mechanical Unit Operations		• Self study in unit-1 only standard screens • Remove ultra fine grinders, cutting machine and keep it as self study, mixing index in course content • Self study in unit-3 design word remove • Self study in Unit-4 only keep slow sand filters and bag filters • In list of experiments 2 remove critical index
9	Chemical Process Calculations		• New book suggested by BOS Member • Remove Unsteady state material balnce, batch distillation and batch reactor • 3 text books and 1 reference book is not good, so himmalbleu in reference book
10	Momentum Transfer theory and Lab		**Theory:** • 2nd unit is too big compared to others • Adiabatic and isothermal friction flow can be placed in self study • Bernoulli's equation for compressible fluids can be removed from self study • Text book title is to be checked • Refernces of chemical books can be added (Noel.De Nevers)

			Lab: • Flow through packed beds • 9 Experiment change sand to grains
11	Process Heat Transfer		Theory • Avoid too many self study topics • Remove transient heat conduction in infinite solids under self study • Unit-3 self study only radiation shielding and combined heat transfer • Crystallization equipment in self study and remove boiling point calculations in self study • Include the term boiling point elevation in unit-4 • Add B.K.Dutta in reference books **Lab:** • No Changes suggested
12	Introduction to MATLAB		• Remove space in MAT lab and write as MATLAB • In list of experiments remove C/C++ • Change the title of the lab as computational tools for process calculations • Title for list of Experiments shall be 'Use of MATLAB/SCILAB/Excel/C/C++ for the following" • 9, 10 mass balance with and without recycle • Add energy balance problem
13	CACE Lab		List of experiments from 3 to 6 can be rechecked
14	Industry driven courses		Have left the concern to the industry people only who have set the syllabus and no modifications suggested from their side Make it as compulsory course, because lot of effort is

			being invested in preparing the syllabus and industry people coming over here. If possible it can be thought on removing any of the lab course and making the IDC as compulsory

General points discussed in the meeting:

Regarding feedback from stake holders:

- Members have asked regarding the full semester students that they might be missing the core courses. HOD have given an explanation that the core courses are taken care such that no student misses any core course.
- Importance and feedback from industry has been discussed; benefits of it was debated especially for Introduction to Chemical Engineering. They stated that this subject shall be in either of 1st or 2nd semester. But HOD explained that it is mandatory to follow common subjects for 1st and 2nd semester. They also stated that if a common slot is provided in 2nd semester which shall be branch specific it might have been good. It will not do any good if it is kept in 3rd semester.
- Members suggested that OOPs can be made as an elective. But HOD stated that it must be offered as compulsory integrated course.
- Include all couses suggested by academia stakeholders can be added to electives. But HOD replied that electives numbers are fixed over the entire campus.
- Discussions were held on course structure and the details of the creits to be earned by the students, the flexibility was explained by HOD.
- Electronics related subjectand lab may be added in 1st or 2nd semester.
- Credits 3 or 4 for each subject based on the requirement. (by not considering the credits for tutorials)
- CCEC activities are evalted at the end of year only. Only credits for the 4 semesters. Same code is to be there for 16ESX1A and 16ESX1B
- Engg mathematics –III is included based on the GATE requirements.
- Program outcomes are not matching for momentum transfer lab and heat transfer lab as they confine with same essence.
- Project also will have hours, so it is adviced to add hours in the structure.
- Compulsory handling of labs for FSI students is clearly explained by HOD

S. No.	Name	Signature
1.	Prof. P. S. T. Sai	
2.	Prof. V. V. Basava Rao	17/12/16
3.	Dr. A. Gangadhar Rao	17/12/16
4.	Dr. P. V. Suresh	17/12/16
5.	Dr. M. Srinivasa Rao	17/12/16

GMR Institute of Technology
An Autonomous Institute Affiliated to JNTUK, Kakinada

GMRIT

6th BOS Meeting: Chemical Engineering Department

Venue: Dept.Computer Centre, Chemical Engineering

Date & Time: 20-11-2015; 10 AM to 6.30 PM

Sub: 1. UG and PG: AR-16 syllabus -Course Structure

External BOS Members Present:

Prof. (Dr). K. Krishnaiah (Special Invitee)

Emeritus Professor(Former Dean Academic Research), IIT.,Chennai

Dr. M.Srinivasa Rao

Dy.Manager(R & D), Vizag Steel Plant

Prof.(Dr). V.V.Basava Rao, (through telephonic conversation) (040-27098472)

Principal-in-charge, College of Technology, Osmaina University, Hyderabad

Faculty members present:

- Dr. S. K. Behera (Professor & HOD)
- Dr. M. Krishna Prasad (Professor)
- Dr. R. Srikanth (Assoc. Professor)
- Mr. V. Srinivasa Rao (Assoc. Professor)
- Dr. P. Kalpana (Assoc. Professor)
- Dr. S.N.Dash (Assoc. Professor)
- Dr. M. Gangadhar (Sr.Asst. Professor)

- Ms.G.Kalyani (Sr.Asst. Professor)
- Mr. P. S. Sagar (Sr.Asst. Professor)
- Mr. G. Babu Rao (Sr.Asst. Professor)
- Mr. H. Joga Rao (Asst. Professor)
- Mr. B. Niranjana Rao (Asst. Professor)
- Ms. P. Mythili (Asst. Professor)

Minutes of the BOS meeting

Agenda:

1. Discussion on Course Titles as per new course structure for UG/PG programmes:AR-16 Academic regulations.

Points of Discussion and Suggestions:

1. HOD appraised the members regarding New Courses being suggested for introduction in AR-16.
2. Titles discussed by considering the courses being offered by IIT's, NIT's, other deemed universities, along with GATE Syllabus.
3. Discussion held on 3rd ,4th, 5th , 6th, 7thand 8th semester structure based on (AR-13) syllabus and PG course titles/syllabus modification.

Discussion of course titles:

1. Regarding the 1st and 2nd semester courses and common courses, the approval of Joint Board meeting is adopted for B.Tech, Chemical Engineering also.
2. The members had detailed discussion in finalizing the new course titles so that the student will be able to meet the designed PEO's of Chemical engineering course and also able to compete for employment/higher studies.
3. The following new course titles are proposed by the faculty to be incorporated in AR-16 UG syllabus.

S.No.	Name of the (new course) Title to be introduced	Semester	Suggestions
1	Introduction to Chemical Engineering		
2	Numerical Methods & Computational Techniques		
3	Computational Techniques Lab		
4	OOPS through JAVA		
5	OOPS through JAVA Lab		
6	Process Instruemntation and Control		
7			
8	Chemical Process Design & Economics		
9	Chemical Process Equipment Design		

.S.No.	Name of the new Elective course title to be introduced	Semester	Suggestions
1	Fuel Technology		
2	Energy Engineering		
3	Introduction to Nanotechnology		

B.Tech. 3rd semester

Code	Subject	Suggestions
CHE 2403	Physical & Analytical Chemistry	
CHEM 2402	Chemical Engineering Thermodynamics	
CHEM 2403	Chemical Process Calculations	• Bifurcating CPC into two Subjects as Material Balance and Energy Balance (Also Introduction to solving problems through Excel is also good)
CHEM 2404	Introduction to Chemical Engineering	• The course contents were discussed in detail and syllabus of IIT Chennai is also considered and suggested syllabus is being prepared and sent for External Board Members approval and the same will be adopted in AR16. Members suggested to cover first 4 units topics of the Text book
CHEM 2405	Numerical Methods and Computational Techniques	Unit-2 syllabus was discussed in detail, members suggested to reduce the content based on GATE syllabus. Syllabus modifications for other units has been adopted for other 3 units. Discussions held about text book and references; suggested to reduce nO. of references books.
	Oops through Java	
CHEM 2206	Oops through Java Lab	
CHE 2204	Physical &Analytical Chemistry Lab	
	Computational Techniques lab	

B.Tech. 4th semester

Code	Subject	Suggestions

MATH 2405	Probability & Statistics	
CHE 2405	Organic Chemistry	
CHEM 2407	Mechanical Unit Operations	
CHEM 2408	Phase and Chemical Equilibria	
CHEM 2409	Process Heat Transfer	Discussions held on the syllabus and textbooks. Suggested to reduce the quantum of syllabus & NTU method can be shifted to 6th semester. Equipment design to be used to make use of steam tables.
	Momentum Transfer	Outcomes needed to be changed.Unit operations and processes, basic concepts shall be removed. Remove rheological properties of fluids. Change the notation as friction factor for non-newtonian fluids. The chapter headings are good enough.
CHEM 2210	Mechanical Unit Operations Lab	
CHEM 2211	Process Heat Transfer Lab	
	Momentum Transfer Lab	
	CCEC Activities	

B.Tech. 5thsemester

Code	Subject	Suggestions
CHEM 3412	Chemical Reactor Theory	• **CRT can be renamed as Homogeneous reactors.** •

CHEM 3413	Chemical Technology	**Bioprocess is missing in the syllabus, Many chemical industries can be included.**
CHEM 3414	Principles of Mass Transfer	**Weldie wickson, fundamentals of mass and heat transfer.** **Unit-4 Should be renamed as membrane operations.**
CHEM 3415	Process Instrumentation and Control	**Members expressed satisfaction with proposed syllabus.** **Unit-1: Introduction to control and half part instrumentation** **2,3,4 units dynamics** **IMC(Internal modal control) is to be elaborated for students view point.in Unit-3 Smith Predictor control is to be added, selective and override has to be removed.**
	Engineering Economics & Project Management	
Elective-I		
CHEM 3416	Fertilizer Technology	
CHEM 3417	Pharmaceutical Technology	
CHEM 3418	Polymer Technology	
CHEM 3219	CACE Lab	
CHEM 3220	Process Dynamics & Control Lab	**PDC lab can be renamed as Process Control Lab.**
GMR 30206/ GMR 30204	Term Paper/ **Mini Project**	

B.Tech. 6th Semester

Code	Name of the Subject	Suggestions
CHEM 3421	Applications of Mass Transfer	
CHEM 3422	Chemical & Catalytic Reaction Engineering	• CCRE can be renamed as Heterogeneous reactors. • Mixing of fluids is removed from unit-1 • Fogler as reference book and remove Ghavane from reference books
CHEM 3423	Chemical Process Equipment Design	
	Chemical Engineering Plant Design & Economics	Members reviewed the syllabus. Expressed satisfaction of the proposed syllabus.
	Elective-2	
CHEM 3424	Material Science and Engineering	
CHEM 3425	Petroleum Refining and Petrochemicals	
CHEM 3426	Energy Engineering	
Elective-3 (Open elective)		
IT 3418	Cloud Computing	
CE 3429	Disaster Management	
ECE 3424	Fundamentals of GPS	
CHEM 3427	Industrial Safety and Hazard Management	

ME 3432	Principles of Entrepreneurship (Mech)	
EEE 3427	Renewable Energy Resources	
PE 3409	Smart Grid Technologies	
CSE 3417	Soft Computing	
	Computational Fluid Dynamics	
CHEM 3228	Chemical Reaction Engineering Lab	
CHEM 3229	Mass Transfer Operations Lab	
GMR 30206/ GMR 30204	Term Paper /Mini Project	
	CCEC Activities	
GMR 30001	Audit Course	

B.Tech. 7th Semester

Code	Subject	Suggestions
HS3405	Process Modeling & Simulation	Restructuring of units and addition of unsteady state plug flow reactor topic is advised.
Elective-4		
ME 4450	Clean Process Technology	

CHEM 4430	Novel Separation Techniques	
CHEM 4431	Membrane Technology	
CHEM 4432	Biochemical Engineering	
Elective-5		
CHEM 4433	Fuel Technology	
CHEM 4434	Introduction to Nanotechnology	
CHEM 4435	Corrosion Engineering	
CHEM 4436	Fluidization Engineering	
CHEM 4237	Process Equipment Design and Drawing Lab	**Actually this lab is not Required**
CHEM 4238	Process Simulation Lab	

B.Tech. 8th Semester

Code	Subject	Suggestions
CHEM 4439	Transport Phenomena	• **Reference 2 author name is misspelled** • **Wiley, wicks and _____ Rearrangement** • **4th unit is big and confusing** • **1 and 2 units can be clubbed to 1st unit** • **3 problems in MT unit-2** • **3 problems in Mass unit-3** • **3 Problems in Heat unit-4 will be good**
CHEM 4440	Industrial Pollution Control	

	Engineering	
	Elective-6	
CHEM 4441	Design and Analysis of Experiments	
CHEM 4442	Process Optimization	
CHEM 4443	Process Intensification	Suggested to reduce the syllabus depth and to compare conventional process with intensification benefits, so that the student can appreciate the role of process intensification
CHEM 4444	Scale-up Methods in Chemical Engineering	
GMR 41205	Project Work	

CHEM 4445- Power Plant Pollution and Control-Offered to Power Engg.

Faculty Members Present:

- Dr. S. K. Behera (Professor & HOD)
- Dr. R. Srikanth (Assoc. Professor)
- Mr. V. SrinivasaRao (Assoc. Professor)
- Dr. P. Kalpana (Assoc. Professor)
- Dr. M. Gangadhar (Asst. Professor)
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- Mr. G. Babu Rao (Asst. Professor)
- Mr. H. JogaRao (Asst. Professor)
- Mr. B. NiranjanaRao (Asst. Professor)
- Ms. P. Mythili (Asst. Professor)
- Ms.G.Kalyani
- Dr. S.N.Dash

5th Board Meeting

External BOS Meeting: Chemical Engineering Department

Venue: Computer Lab, Chemical Engineering

Date & Time: 20-12-2014 10 AM -5 PM

External BOS Members Present:

- Dr .A.Gangagni Rao (IICT, Hyderabad)
- Prof. S. V. Naidu (Andhra University)
- Dr. P. V. Suresh (NIT Warangal)
- Dr .M. Srinivasa Rao (Vizag Steel Plant)

Faculty Members Present:

- Dr. S. K. Behera (Professor & HOD)
- Dr. M. Krishna Prasad (Professor)
- Mr. R. Srikanth (Assoc. Professor)
- Mr. V. Srinivasa Rao (Assoc. Professor)
- Ms. P. Kalpana (Assoc. Professor)
- Dr. M. Gangadhar (Asst. Professor)
- Mr. P. S. Sagar (Asst. Professor)
- Mr. G. Babu Rao (Asst. Professor)
- Mr. H. Joga Rao (Asst. Professor)
- Mr. B. Niranjana Rao (Asst. Professor)
- Ms. P. Mythili (Asst. Professor)

Faculty member in BOS Committee:

- Ms.G.Kalyani (Hospitality)

Minutes of the BOS meeting

Agenda:

1. Finalization of AR-12 Course Content for 7th and 8th Semesters finalization.
2. Finalization of AR-13 Course Titles and Syllabus for 5th to 8th Semesters finalization in Practice and Non- Practice School models.
3. M.Tech Environmental Engineering course review

Points of Discussion and Suggestions:

1. AR-13 (Practice and Non-Practice School) course structure was finalized.
2. Course content (AR-12) for 7^{th} and 8^{th} semester was finalized as given below:
    - **PMS:** Suggested modifications were incorporated.
    - **CPEED:** Suggested modifications in Unit-III were incorporated.
    - **PEDD lab:** Members suggested to include "Process design of Absorption column" and was included.
    - **Numerical methods in Chemical Engineering**: Few books were suggested as references.
    - **Process intensification: S**uggested modifications in Unit-IV was incorporated.
    - **Thermodynamic properties of Crudes**: Members suggested to orient Unit-IV with qualitative treatment only and incorporated.
    - **Scale up methods**: Suggested modifications of Unit-III & IV titles were incorporated.
    - **Industrial pollution control Engineering**: Suggested to add Metcalf and Eddy in the text book list.
    - **Pharmaceuticals and fine chemicals**: Suggested few topics to be deleted and advised to have only 2 text books. Necessary revision was made.
    - **Computational fluid dynamics**: The proposed syllabus was modified based on the suggestion.

- **Design and analysis of experiments**: The proposed syllabus was modified based on the suggestion.
- **Transport phenomena**: Suggested modifications of IV were incorporated.

3. The members also looked into the M.Tech Environmental Engineering course, enquired into the details of the subjects and expressed satisfaction.
4. Cognitive levels of the external question papers of autonomous course are evaluated by external BOS members.

S.No.	Name	Designation	Signature
1	Dr.A.Gangagni Rao (IICT, Hyderabad)	Sr.Principal Scientist	
2	Prof. S. V. Naidu (Andhra University)	Professor	
3	Dr. P. V. Suresh (NIT Warangal)	Assistant Professor	
4	Dr. M. Srinivasa Rao (Vizag Steel Plant)	Deputy Manager (R&D)	
5	Dr. S. K. Behera	HOD, Chairman - BOS	
6	Dr. M. Krishna Prasad	Professor	
7	Mr. R. Srikanth	Assoc. Professor	
8	Mr. V. Srinivasa Rao	Assoc. Professor	
9	Ms. P. Kalpana	Assoc. Professor	
10	Dr. M. Gangadhar	Asst. Professor	
11	Mr. P. S. Sagar	Asst. Professor	
12	Mr. G. Babu Rao	Asst. Professor	
13	Mr. H. Joga Rao	Asst. Professor	
14	Mr. B. Niranjana Rao	Asst. Professor	
15	Ms. P. Mythili	Asst. Professor	