



List of New Course(s) Introduced

Department : **Hindi**

Program Name : **B.A. (Hons.) Hindi**

Academic Year : **2017-18**

List of New Course(s) Introduced

| Sr. No. | Course Code | Name of the Course |
|---------|------------------|----------------------|
| 01. | | NO Introduced |
| 02. | | |
| 03. | | |
| 04. | | |
| 05. | | |
| 06. | | |
| 07. | | |
| 08. | XXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXX |
| 09. | XXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXX |
| 10. | XXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXX |

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Minutes of Meetings (MoM) of Board of Studies (BoS)

Academic Year : 2017-18

School : School of Studies of Engineering and Technology

Department : Chemical Engineering

Date and Time : May 26, 2018 - 11:30 AM

Venue : E-Class Room

The scheduled meeting of member of Board of Studies (BoS) of Department of xxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxx, School of Studies of xxxxxxxxxxxxxxxxxxxxxxxxxxxx, Guru Ghasidas Vishwavidyalaya, Bilaspur was held to design and discuss the B. Tech. Final year (VII and VIII semesters) scheme and syllabi.

The following members were present in the meeting:

1. Prof. xxxxxxxxxxx (External Expert Member BoS, Dept. of xxxxxxxxxxx, NIT Raipur)
2. Prof. xxxxxxxxxxx (Member BoS, Dept. of xxxxxxxxxxx xxxxxxxxxxx.)
3. Dr. xxxxxxxxxxx (HOD, Associate Prof., Dept. of xxxxxxxx.-cum Chairman, BOS)
4. Mrs. xxxxxxxxxxx (Member BoS, Assistant Professor, Dept. of xxxxxxxxxxx)
5. Mr. xxxxxxxxxxx (Invited Member, Assistant Professor, Dept. of xxxxxxxxxxx)
6. Dr. xxxxxxxx (Invited Member, Assistant Professor, Dept. of xxxxxxxxxxx)

Following points were discussed during the meeting

1. Xxxxxxxxxxxxxxxxx
2. Xxxxxxxxxxxxxxxxx
3. Xxxxxxxxxxxxxxxxx
4. Xxxxxxxxxxxxxxxxx (If CBCS scheme is implemented in any of the program, kindly mention in the discussion)

The committee discussed and approved the scheme and syllabi. The following courses were revised in the of B. Tech. Final year (VII and VIII Semesters) :

- ❖ Transport Phenomena (CH07TPC16)
- ❖ Process Equipment Design - III (CH08TPC17)

The following new courses were introduced in the of B. Tech. Final year (VII and VIII Semesters):

- ❖ Chemical Reaction Engineering-II (CH07TPC15)
- ❖ Xxxxxxxxxxxxxxxxx (XXXXXXXXXXXXXXXX)

Signature & Seal of HoD



Scheme and Syllabus

SCHOOL OF STUDIES OF ENGINEERING & TECHNOLOGY
GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University Established by the Central University Ordinance 2009, No. 3 of 2009)

SCHEME FOR EXAMINATION (Effective from Session 2021-22)
B.TECH.-(FOUR YEAR) DEGREE COURSE, CHEMICAL ENGINEERING
FINAL YEAR, SEVENTH SEMESTER (AICTE) (CBCS)

| S. No. | Subject Code | Subject Name | Periods | | | Evaluation Scheme | | | Credits |
|-----------|--------------|------------------------------------|---------|---|---|-------------------|----|-----|---------|
| | | | L | T | P | Sessional | | | |
| THEORY | | | | | | | | | |
| 01. | CH07TPC14 | Process Equipment Design - II | 3 | 1 | 0 | 30 | 70 | 100 | 4 |
| 02. | CH07TPC15 | Chemical Reaction Engineering - II | 3 | 1 | 0 | 30 | 70 | 100 | 4 |
| 03. | CH07TPC16 | Transport Phenomena | 3 | 1 | 0 | 30 | 70 | 100 | 4 |
| 04. | CH07TPE4X | | 3 | 0 | 0 | 30 | 70 | 100 | 3 |
| 05. | CH07TOE3X | | 3 | 0 | 0 | 30 | 70 | 100 | 3 |
| PRACTICAL | | | | | | | | | |
| 01. | CH07PPC11 | Minor Project | 0 | 0 | 3 | 30 | 20 | 50 | 1.5 |
| 02. | CH07PPC12 | Seminar | 0 | 0 | 3 | 30 | 20 | 50 | 1.5 |
| Total | | | 15 | 3 | 6 | | | 600 | 21 |

IA - Internal Assessment
Total Marks - 600

ESE - End Semester Examination
Total Periods / week - 24

Total Credits : 21

B. Tech. Chemical Engineering Final Year

w.e.f: Session 2021-22

BoS held on 23.07.2021



B.Tech. Syllabus (AICTE)

Department of Chemical Engineering

B.Tech. VII Semester

CH07TPC15

Chemical Reaction Engineering - II

[L:3, T:1, P:0]

Objectives

Graduates shall be able to (a) understand fundamental principles and experimental techniques of heterogeneous reaction systems; (b) apply principles of transfer operation in kinetics studies of heterogeneous reaction systems; (c) analyze the rate controlling step in heterogeneous reaction systems; (d) evaluate the catalytic activity and selectivity influenced by the physical and surface properties of the catalyst.

Contents

Unit-I : Basics of Non-Ideal Flow: Age distribution of fluid, the RTD, Conversion in nonideal flow reactors, Models for non-ideal flow- dispersion model, Chemical reaction and dispersion, Tank in series model.

Unit-II : Mixing of Fluids: Self mixing of single fluid, degree of segregation, Early and late mixing, Mixing of two miscible fluids.

Unit-III : Fluid Particle Reactions: Un-reacted core model: Diffusion through gas film and ash layer control, Chemical reaction control, Rate of reaction for shrinking spherical particles, Determination of rate controlling step.

Unit-IV : Fluid-Fluid Reactions: Kinetic regimes for mass transfer and reaction, Rate equations for various regimes, Film conversion parameter, Application to design, Reactive and extractive reactions.

Unit-V : Catalysis: Heterogeneous catalysts, General characteristics, Adsorption on solid surface, Physical properties of catalysts, Preparation of catalyst, Steps in catalytic reactions, synthesizing the rate law.

Suggested Text Books

1. Chemical Engineering Kinetics by J.M. Smith
2. Chemical Reaction Engineering by Octave Levenspiel
3. Chemical Reaction Engineering by H. Scott Fogler
4. Principles of Reaction Engineering by S.D. Dawande, Central Techno Publications
5. Chemical Engineering by J. M. Coulson and Richardson, Volume IV.

Course Outcomes

Students would be able to (a) explain the concepts of reactor design and reaction kinetics; (b) interpret reactor data; (c) identify ideal reactors and explain various aspects of design for single reactions; (d) explain various aspects of design for multiple reactions, (e) analyze effects of temperature and pressure on conversion.

w.e.f : Session 2021-22

BoS held on 23.07.2021

Chandrabor
23/07/2021

Ajani

Swamy

Chandrabor
Gadgil

Chandrabor

Chandrabor