



List of Revised Courses

Department : Industrial and Production Engineering

Programme Name : B.Tech

Academic Year : 2022-23

List of Revised Courses

Sr. No.	Course Code	Name of the Course
01.	PSCHGE0101L	Generic Elective - I
02.	PSCHGE0101P	Generic Elective - I Practical
03.	PSCHGE0202L	Generic Elective - 2
04.	PSCHGE0202P	Generic Elective - 2 Practical
05.	PSCHGE0303L	Generic Elective - 3
06.	PSCHGE0303P	Generic Elective - 3 Practical
07.	PSCHGE0404L	Generic Elective - 4
08.	PSCHGE0404P	Generic Elective - 4 Practical
09.	CMT-304 (P)	Quantum Chemistry Credits



Academic Year : 2022-23

School : School of Studies of Engineering and Technology

Department : Industrial and Production Engineering

Date and Time : Jan. 17, 2022 5:00 PM

Venue : Cad Lab

The scheduled meeting of member of Board of Studies (BoS) of Department of Industrial and Production Engineering, School of Studies of Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur was held on 17.06.2022 at 5:00PM in Cad Lab.

The following members were present in the meeting:

1. Prof. S.C. Shrivastava (HOD, Professor., Dept. of I.P.E., -cum Chairman, BOS)
2. Prof. M.K. Singh (Member BoS, Professor, Dept. of I.P.E)
3. Mr. C.P. Dewangan, (Member BoS, Associate Prof., Dept. of I.P.E)
4. Mr. Nitin Kumar Sahu, (Member BoS, Assistant Prof., Dept. of I.P.E)
5. Mr. Kawal Lal Kurrey (Invited Member BoS, Assistant Prof., Dept. of I.P.E)

Following External members has also participated by email as the coding, scheme and syllabus of B. Tech V, VI, VII & VIII Semester M.Tech (CAD-CAM and Robotics) and PrePh.D Course work by email. Dr. A. R. Dixit (External Expert, Professor, Mechanical Engineering Department, Indian Institute of Technology ISM, Dhanbad)

6. Mr. Bhanja Prasad Patro (External Expert, Director & Head, CIPET: CSTS - Bhubaneswar)

Following points were discussed during the meeting

1. Coding, scheme, syllabus of B. Tech. V, VI, VII VIII Semester (Industrial & Production Engineering), M.Tech (CAD-CAM and Robotics) and Pre-Ph.D Course work was discussed in detail and incorporated. The verbal suggestions received from the external experts are also incorporated and recommended for approval.
2. The discussion regarding the honorarium payment for the external experts sitting is also decided and will be paid as per rule from the imprest fund.
3. The coding, scheme, syllabus of B. Tech. V, VI, VII VIII Semester, M.Tech (CAD-CAM and Robotics) and Pre-Ph.D Course work of Department of Industrial & Production Engineering have been accepted by the B.O.S. (I.P.E.) and attached herewith for approval from the competent authority.

The B.O.S. meeting was concluded with vote of thanks by Head of the Department



The committee discussed and approved the scheme and syllabi. The following courses were revised in the B. Tech. Third year (VI Semester) :

- ❖ Computer Aided Design & Manufacturing (IP07TPC14)
- ❖ Robotics and Robot Applications (IP08TPC16)
- ❖ Research Methodology in Engineering (IPDATT1)
- ❖ Computer Aided Design (IPDATK1)

The following new courses were introduced in the of B. Tech. First year (I and II Semesters):

- ❖ Environmental Sciences (IP207TMC02)
- ❖ Manufacturing Processes (IP207TOE02)

The B.O.S. meeting was concluded with vote of thanks by Head of the Department.

Signature & Seal of HoD

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

Academic Year : 2022-23

School : School of Studies of Engineering and Technology

Department : Industrial and Production Engineering

Date and Time : Dec. 15, 2022

Venue : Online mode

The scheduled meeting of member of Board of Studies (BoS) of Department of Industrial and Production Engineering, School of Studies of Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur was held on 15.12.2022 in online mode.

The following members were present in the meeting:



7. Prof. S.C. Shrivastava (HOD, Professor., Dept. of I.P.E., -cum Chairman, BOS)
8. Prof. M.K. Singh (Member BoS, Professor, Dept. of I.P.E)
9. Mr. C.P. Dewangan, (Member BoS, Associate Prof., Dept. of I.P.E)
10. Mr. Nitin Kumar Sahu, (Member BoS, Assistant Prof., Dept. of I.P.E)
11. Dr. Atul Kumar Sahu (Invited Member BoS, Assistant Prof., Dept. of I.P.E)
12. Dr. Ganesh Prasad Shukla (Invited Member BoS, Assistant Prof., Dept. of I.P.E)

Following External members has also participated by email as the coding, scheme and syllabus of B. Tech I, II & VI Semester (Industrial & Production Engineering) is shared with the external experts earlier by email for their kind glancing.

13. Dr. A. R. Dixit (External Expert, Professor, Mechanical Engineering Department, Indian Institute of Technology ISM, Dhanbad)
14. Mr. Bhanja Prasad Patro (External Expert, Director & Head, CIPET: CSTS - Bhubaneswar)

The BOS meeting is conducted in online platform via Google meet link (<https://meet.google.com/qrz-qmbd-gpq>) for the following agenda.

Following points were discussed during the meeting

1. To approve the common syllabus and scheme of B.Tech first and second semester towards NEP-2020 for the IPE branches for the session 2022-23
2. The scheme of VI semester IPE is required to be updated and accordingly new updated scheme of VI semester IPE is discussed with the BOS members.

All the members of BOS has approved the syllabus and scheme of B.Tech first and second semester and scheme of VI semester IPE, where Mr. Bhanja Prasad Patro (External Expert- email: bppatra66@gmail.com) and Dr. A. R. Dixit (External Expert, email: amitraidixit@iitism.ac.in) has given approval via replying to the sent invitation mail.

The discussion regarding the honorarium payment for the external experts sitting is also decided and will be paid as per rule from the imprest fund.

The coding, scheme, syllabus of B. Tech. I, II and VI Semester of Department of Industrial & Production Engineering have been accepted by the B.O.S. (I.P.E.) and attached herewith for approval from the competent authority.

The B.O.S. meeting was concluded with vote of thanks by Head of the Department

The committee discussed and approved the scheme and syllabi. The following courses were revised in the B. Tech. Third year (VI Semester) :



- ❖ Computer Aided Design & Manufacturing (IP07TPC14)
- ❖ Robotics and Robot Applications (IP08TPC16)
- ❖ *Research Methodology in Engineering (IPDATT1)*
- ❖ *Computer Aided Design (IPDATK1)*

The following new courses were introduced in the of B. Tech. First year (I and II Semesters):

- ❖ *Environmental Sciences (IP207TMC02)*
- ❖ *Manufacturing Processes (IP207TOE02)*

The B.O.S. meeting was concluded with vote of thanks by Head of the Department.

Signature & Seal of HoD

Scheme and Syllabus



Annexure-I

Syllabus for Chemistry

B. Sc. GENERIC ELECTIVE COURSE

Department of Chemistry
Guru Ghasidas Vishwavidyalaya

*Generic Elective Course (GE)		
Course Code	Title of Paper	Credit
PSCHGE0101L	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons	4
PSCHGE0101P	GE CHEMISTRY PRACTICAL - I	2
PSCHGE0202L	Kinetic Theory of Gases, Chemical Energetics, Equilibria & Functional Group Organic Chemistry	4
PSCHGE0202P	GE CHEMISTRY PRACTICAL - II	2
PSCHGE0303L	Solid, Solutions, Phase Equilibrium & Chemical kinetics, Conductance, Periodic Properties and Chemistry of s-, p-, and d- block elements	4
PSCHGE0303P	GE CHEMISTRY PRACTICAL - III	2
PSCHGE0404L	Analytical Chemistry, Co-ordination compounds, Organometallics and Molecules of life	4
PSCHGE0404P	GE CHEMISTRY PRACTICAL - IV	2

(Signatures)



Annexure-II

Revised

CMT-304 (P): Quantum Chemistry Credits: 3

1. **Fundamentals of Quantum Chemistry:** General formulation of Quantum Mechanics: Eigen functions and Eigen values and quantum mechanical operators, Expectation value of a physical quantity. Orthogonalization and normalization of wave functions. Postulates and theorem of quantum mechanics.
2. **Solutions to Schrodinger Equation:** Schrodinger wave equation, solution of Schrodinger wave equation to some model systems viz. particle in a box, rigid rotor, harmonic oscillator and H atom problems.
3. **Approximation Methods in Quantum Chemistry:** Variation method, Stationary perturbation theory for non-degenerate and degenerate. Ground state of He atom. Time-dependent perturbation theory. Radiative transition, Einstein coefficients.
4. **Angular momentum:** Ordinary Angular momentum, generalized angular momentum, eigen functions for angular momentum, Eigen values of Angular momentum, operators, ladder operator, Addition of angular momenta.
5. **Many Electron atoms:** Antisymmetry and Pauli Exclusion Principle, Term symbols for two equivalent electrons, Total angular momentum and spin-orbit interaction. Condon Slater Rules.

Books Recommended

1. P.W. Atkins and R.S. Friedman, Molecular Quantum Mechanics, 3rd edition (1997), Oxford University Press. Oxford.
2. H. Eyring, J. Walter and G.E. Kimball, Quantum Chemistry, John Wiley, New York (1944)
3. I.N. Levine, Quantum Chemistry, 5th edition (2000), Pearson Educ., Inc., New Delhi.
4. G. M. Barrow, Physical Chemistry, Fifth edition, Tata MacGraw Hill, New delhi (1994).
5. J. N. Gurtu and A. Gurtu, Advanced Physical Chemistry, Pragati Edition, Meerut (2009).
6. Donald A. McQuarrie, Quantum Chemistry, published by Viva Books PVT LTD, New Delhi (2007)

(Signatures)