Implementation of NEP/LOCF/CBCS / ECS

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

Academic Year : 2024-25

School : *School of Studies of Engineering and Technology*

Department : *Industrial and Production Engineering*

Date and Time : *Jun. 28, 2024 – 11:00 noon*

Venue : *Meeting room*

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 to design and discuss the contents of syllabus

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. Dr. S. C. Gajbhiye (Invited Member BoS, Associate Prof., Dept. of I.P.E)
6. Dr. Manish Oraon (Invited Member BoS, Associate Prof., Dept. of I.P.E)
7. Mrs. A. R. Choudhary (Invited Member BoS, Assistant Prof., Dept. of I.P.E)
8. Dr. Atul Kumar Sahu (Invited Member BoS, Assistant Prof., Dept. of I.P.E)
9. Dr. Ganesh Prasad Shukla (Invited Member BoS, Assistant Prof., Dept. of I.P.E)
10. Mrs. Disha Dewangan (Invited Member BoS, Assistant Prof., Dept. of I.P.E)
11. Mr. Kailash Kumar Borkar (Invited Member BoS, Assistant Prof., Dept. of I.P.E)
12. Mr. Anurag Singh (Invited Member BoS, Assistant Prof., Dept. of I.P.E)
13. Mr. Kawal Lal Kurrey (Invited Member BoS, Assistant Prof., Dept. of I.P.E)
14. Mr. Somnath Singroul (Invited Member BoS, Assistant Prof., Dept. of I.P.E)
15. Prof. A. K. Thakur (Invited Member BoS, Professor, Dept. of Mathematics)
16. Mr. C. P Dhuri (Invited Member BoS, Assistant Prof., Dept. of Mathematics)

Following External members has also participated in formulating the coding, scheme and syllabus of B. Tech. III to VII Semester by email.

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

Following points were discussed during the meeting

1. The syllabus, scheme and coding of B. Tech. III –VIII Semester (Industrial & Production Engineering) is shared with the external experts. Moreover, several conversations held from the external experts by the Head of the Department and Departmental BOS Coordinator and their suggestion and comments are considered in the same.
2. In the meeting, syllabus, scheme and coding of B. Tech. III –VIII Semester (Industrial & Production Engineering) was discussed in detail and incorporated. The verbal suggestions received from the external experts in the meeting are also incorporated and recommended for approval. After incorporation of all the suggestions, the final updated syllabus will be sent for their reference.
3. It is also decided that the subject code may be changed (if any, in future) as per university norms/ regulations/ ordinance/ policies from time to time.
4. Also, the open elective (name and subject code/ syllabus) may be changed in future as per the directions of the offering department in the scheme/ syllabus.
5. The syllabus, scheme and coding of B. Tech. III –VIII Semester of Department of Industrial & Production Engineering has been accepted by the B.O.S. (I.P.E.) and attached herewith for approval from the competent authority.

The committee discussed and approved the scheme and syllabi. The following courses were revised

- IPUCTT7 Theory of Machines
- IPUDTT3 Industrial Engineering

Signature & Seal of HoD

Scheme and Syllabus

GURU GHASIDAS VISHWAVIDYALAYA (A CENTRAL UNIVERSITY), BILASPUR, CG
SCHOOL OF STUDIES OF ENGINEERING AND TECHNOLOGY
Department of Industrial & Production Engineering
NEP 2020–Scheme of Teaching & Examination
W.E.F. Session: 2024-2025
B. TECH SECOND YEAR, III SEMESTER

SN	Course No.	Subject	Teaching Hours/ Week/ Periods			Evaluation Scheme			Credits
			Theory Lectures	Tutorials	Practical	Continuous Internal Assessment	Semester Examination Assessment	Total Marks	
			L	T	P	CIA	SEA		
1	IPUCTT4	Material Science and Metallurgy	3	–	–	40	60	100	3
2	IPUCTT5	Mechanics of Materials	3	–	–	40	60	100	3
3	IPUCTT6	Engineering Thermodynamics	3	–	–	40	60	100	3
4	IPUCTT7	Theory of Machines	3	–	–	40	60	100	3
5	IPUCTP_	*Professional Elective-1/2*	3	–	–	40	60	100	3
6	_UCTO_	*Open Elective*	3	–	–	40	60	100	3
Total			**18**	–	–	**240**	**360**	**600**	**18**
PRACTICALS									
1	IPUCLT2	Mechanics of Materials Lab	–	–	2	25	25	50	1
2	IPUCLT3	Theory of Machines Lab	–	–	2	25	25	50	1
Total			**–**	**–**	**4**	**50**	**50**	**100**	**2**
GRAND TOTAL			**18**	**-**	**4**	**290**	**410**	**700**	**20**

List of Department/ Professional Elective		
SN	Course No.	Subject
1.	IPUCTP1	Business Communication and Professional Skills
2.	IPUCTP2	Effective Technical Communication

Institute Core/ Open Elective offered by the Department			
SN	Course No.	Subject	Offering Department
1.	IPUCTO2	Introduction to Industrial Engineering	IPE

Internal Assessment: – Two class tests of 15 marks each will be conducted. Moreover, 5 marks will be for attendance and 5 marks are allocated for the Assignments, surprise test, quiz test etc.

Approved in BOS meeting held on 28.06.2024

Semester	Course No.	Subject	Teaching Hours/ Week/ Periods			Evaluation Scheme						Credits
			Theory Lectures	Tutorials	Practical	Continuous Internal Assessment				Semester Examination Assessment	Total Marks	
						CIA						
			L	T	P	CT–1	CT–2	Assignments, surprise test, quiz test etc	Attendance	SEA		
B. Tech III Sem	IPUCTT7	Theory of Machines	3	-	-	15	15	5	5	60	100	3

COURSE LEARNING OBJECTIVES:

The objective of this course is to:

The objective of this course is to:

1. Impart knowledge of various types of links, mechanisms and machines and kinematics inversions.
2. Solving practical problems related to design of linkage mechanisms and cam and follower systems to generate specified output motions.
3. Learn the importance of kinematics and fundamental principles behind belt, rope and chain drives.
4. To analyze gyro-effect on moving bodies.
5. To study the types of gears and to analyze various gear trains.
6. To study the types of mechanical governors and to analyze its performance parameters

COURSE CONTENT:

Module – I

Classification of mechanisms, basic kinematic concepts and definitions, degree of freedom, mobility, Grashof's law, kinematic inversions of four bar chain and slider crank chains, limit positions, mechanical advantage, transmission angle, description of some common mechanisms, quick return mechanism, straight line generators, universal joint, rocker mechanisms.

Module –II

Classification of cams and followers, terminology and definitions, displacement diagrams, uniform velocity,parabolic, simple harmonic and cycloidal motions, derivatives of follower motions, specified contour cams, circular and tangent cams, pressure angle and undercutting, sizing of cams, graphical and analytical disc cam profile synthesis for roller and flat face followers.

Module –III

Belt, Rope and Chain drive –types of belts and belt drives, V.R . and slip , creep, length power transmitted and ratio of tensions, centrifugal tension, maximum tension, initial tension, V –Belt drive and Rope drives and its ratio of tensions types of chain and chain drives.

Module –IV

Involute and cycloidal gear profiles, gear parameters, fundamental law of gearing and conjugate action, spur gear contact ratio and interference/undercutting, helical, bevel, worm, rack & pinion gears, epicyclic and regular gear train kinematics, compound, reverted and epicyclic gear trains, velocity ratio of epicyclic gear trains

Module – V

Gyroscope - velocity, acceleration and effect of Gyroscope couple on aeroplane , naval ship pitching and rolling , stability of two and four wheel drive in a turning .

Governors: Characteristics of centrifugal governors, Gravity controlled governors, Porter and Proell. Spring controlled centrifugal governor: Hartung and Hartnell governor, performance parameter: sensitivity, stability, isochronisms, governor effort and power.

TEXT & REFERENCE BOOKS:

1. Theory of Machines– Thomas Bevan,CBS Publishers.
2. Mechanisms of Machines– W.L. Cleghorn, Oxford University Press, 2015.
3. Kinematics and Dynamics of Machinery– L. Norton Robert, McGraw-Hill.
4. Theory of Mechanisms and Machines – A. Ghosh, A. K. Mallik – EWP Press.
5. Theory of Machines and Mechanisms - J.Uicker, Gordon R Penstock & J.E. Shigley – Oxford International Edition.
6. Theory of Machines- by R S Khurmi, S Chand & Co Ltd.
7. Theory of Machines- by Rattan S S, McGraw Hill Education India Private Limited.

COURSE OUTCOMES:

At the end of the course the students will be able to:

CO1: Apply knowledge of Kinematics of machine for understanding, formulating and solving engineering problems.
CO2: Construct cam profiles and analysis of their velocity and acceleration.
CO3: Understand the basic concept of belt, rope and chain drive and their practical applications.
CO4: Understand the different types of gears, gear terminology, important gear trains and their practical applications.
CO5: Understand the various types of governors and its applications.

Mapping of Course Outcomes (COs) onto Program Outcomes (POs) and Program Specific Outcomes (PSOs):

CO	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	2	2	-	-	-	-	-	-	2	3	1	3
CO2	3	2	2	3	2	-	-	-	-	-	-	2	3	1	3
CO3	3	2	2	3	2	-	-	-	-	-	-	2	3	1	3
CO4	3	2	2	3	2	-	-	-	-	-	-	2	3	1	3
CO5	3	3	2	2	2	-	-	-	-	-	-	2	3	1	3

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

GURU GHASIDAS VISHWAVIDYALAYA (A CENTRAL UNIVERSITY), BILASPUR, CG
SCHOOL OF STUDIES OF ENGINEERING AND TECHNOLOGY
Department of Industrial & Production Engineering
NEP 2020–Scheme of Teaching & Examination
W.E.F. Session: 2024-2025
B. TECH SECOND YEAR, IV SEMESTER

SN	Course No.	Subject	Teaching Hours/ Week/ Periods			Evaluation Scheme			Credits
			Theory Lectures	Tutorials	Practical	Continuous Internal Assessment	Semester Examination Assessment	Total Marks	
			L	T	P	CIA	SEA		
1	IPUDTT3	Industrial Engineering	3	–	–	40	60	100	3
2	IPUDTT4	Fluid Engineering	3	–	–	40	60	100	3
3	IPUDTT5	Manufacturing Process-I	3	–	–	40	60	100	3
4	IPUDTT6	Engineering Mathematics-C	3	–	–	40	60	100	3
5	IPUDTP_	*Professional Elective-1/2*	3	–	–	40	60	100	3
6	_UDTO_	*Open Elective*	3	–	–	40	60	100	3
Total			**18**	–	–	**240**	**360**	**600**	**18**
PRACTICALS									
1	IPUDLT3	Fluid Engineering Lab	–	–	2	25	25	50	1
2	IPUDPF1	Mini Project	–	–	4	50	50	100	2
Total			**–**	**–**	**6**	**75**	**75**	**150**	**3**
GRAND TOTAL			**18**	-	**6**	**315**	**435**	**750**	**21**

List of Department/ Professional Elective		
SN	Course No.	Subject
1.	IPUDTP1	Material Management
2.	IPUDTP2	Safety Management and Labour Law

Institute Core/ Open Elective offered by the Department			
SN	Course No.	Subject	Offering Department
1.	IPUDTO2	Introduction to Manufacturing Processes	IPE

Internal Assessment: – Two class tests of 15 marks each will be conducted. Moreover, 5 marks will be for attendance and 5 marks are allocated for the Assignments, surprise test, quiz test etc.

Approved in BOS meeting held on 28.06.2024

Semester	Course No.	Subject	Teaching Hours/ Week/ Periods			Evaluation Scheme						Credits
			Theory Lectures	Tutorials	Practical	Continuous Internal Assessment				Semester Examination Assessment	Total Marks	
			L	T	P	CIA				SEA		
						CT–1	CT–2	Assignment, surprise test, quiz test etc	Attendance			
B. Tech IV Sem	IPUDTT3	Industrial Engineering	3	-	-	15	15	5	5	60	100	3

COURSE OBJECTIVES:

1. To impart capability of successfully planning, controlling, and implementing projects.
2. To apply the principles of engineering science, maths, technology and human engineering, involving industry-relevant problems.
3. To contribute to the profitable growth of industrial economic sectors by using IE analytical tools, effective computational approaches and systems thinking methodologies.
4. To recognize the tools of efficiency, effectiveness and productivity for the resources of the plant and facility.
5. To implement the policy of wage administrations for making the labour more and higher productive in their work.

COURSE CONTENT:

Module-I

Introduction: History & development of industrial engineering. Productivity, means of increasing productivity, work study, productivity and work study, human factor in the fabrication, work of F. W. Taylor, Frank and Lillian Gilberth and their contribution.

Module-II

Method study: Definition & basic procedure, selection of jobs. Recording technique: micro motion study, Therbligs, cyclograph,chronocyclo graph, principle of motion economy, design of work place layout, analysts in the form of chart, operation chart, flow process chart, flow diagram, string diagram, man machine chart, two hand chart, Simo chart.

Module-III

Work measurement: Definition, objectives, application, number of cycles to be timed, time study equipment, performance rating, allowance, lumber of cycle to be studied, determination of standard time, predetermined motion time system, conducting work sampling study & establishing standard time.

Module-IV

Wages & incentives: Characteristics of a good wage or incentive system, method of wage payment, concept of wage & incentive schemes, financial and non-financial: Taylor's differential piece rate, Halsey premium plane, Merric's multiple piece rate system, group incentive scheme.

Ergonomics: Work space dimension, design of work place, environmental stresses & impacts on human work.

Module-V

Value engineering: Introduction, concept of value, value analysis approaches, job plan, value tests.

Industrial safety: Analysis of cost of accident, hazards in various fields like fire, electrical shocks, chemical; organization for safety, plant safety, govt. legislation for safety, safety rules.

TEXT BOOKS:

1. Introduction to work study–I.L.O., Oxford Press.
2. Motion and time study – Mundel, Prentices Hall India.
3. Motion and Time Study– Ralph M Barnes, John Wiley and sons.
4. Industrial Engineering – M. I. Khan, New Age International Publication.

COURSE OUTCOMES:

After completion of the course, student will be able to

CO1: Ability to apply mathematics and science in Industrial engineering.

CO2: Ability to design and conduct experiments, as well as to analyse and interpret data.

CO3: Ability to identify, formulate and solve engineering problems.

CO4: Ability to use the techniques, skills, and modern engineering tools necessary for industrial engineering practice.

Mapping of Course Outcomes (COs) onto Program Outcomes (POs) and Program Specific Outcomes (PSOs):

COs	POs												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSOs1	PSOs2	PSOs3
CO1	3	3	2	2	2	2	-	2	2	2	2	2	3	2	3
CO2	3	2	2	2	2	2	-	2	-	-	2	1	3	2	2
CO3	3	3	2	2	2	-	-	3	-	-	2	2	2	3	-
CO4	3	3	2	3	3	1	1	2	1	-	2	1	3	2	-
CO5	3	3	2	2	2	-	-	2	2	-	1	2	2	2	2

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Approved in BOS meeting held on 28.06.2024

Department : *Chemistry*

Date and Time : *Sept. 04, 2020 – 12:00 noon*

Venue : *Meeting room*

The scheduled meeting of member of Board of Studies (BoS) of Department of Chemistry, School of Studies of Physical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur was held to design and discuss the contents of each paper of U.G (CBCS) and P.G. by members (both internal and external).

The following members were present in the meeting:

1. Prof. A. Mittal (External Expert Member BoS, Dept. of Chemistry, MNIT Bhopal)
2. Prof. G. K. Patra (Member BoS, Dept. of Chemistry, GGV.)
3. Prof. Tanmay Kumar Ghorai (HOD, Dept. of Chemistry-cum Chairman, BOS)
4. Dr. S. K. Singh (Member BoS, Associate Professor, Dept. of Chemistry)
5. Dr. S. Banerjee (Member, Assistant Professor, Dept. of Chemistry)

Following points were discussed during the meeting

1. The syllabus of Chemistry Generic Elective was thoroughly modified.
2. The content of existing Quantum Mechanics Paper [CMT-304(P)] of M.Sc. III Semester Physical Chemistry special was also modified on request of the teachers of Physical Chemistry Special.

The committee discussed and approved the scheme and syllabi. The following courses were revised in the B. Sc. I, II, III and IV Semesters:

- PSCHGE0101L Generic Elective – I
- PSCHGE0101P Generic Elective – I Practical
- PSCHGE0202L Generic Elective – 2
- PSCHGE0202P Generic Elective – 2 Practical
- PSCHGE0303L Generic Elective – 3
- PSCHGE0303P Generic Elective – 3 Practical
- PSCHGE0404L Generic Elective – 4
- PSCHGE0404P Generic Elective – 4 Practical

Signature & Seal of HoD

Scheme and Syllabus- UG

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

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