



**Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore**  
**Shri Vaishnav Institute of Technology and Science**  
**Choice Based Credit System (CBCS) Scheme in light of NEP-2020**  
**Generic Elective for PG**  
**(2022-2024)**

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
GPME202	GE	WORK DESIGN AND ERGONOMICS	60	20	20	0	0	3	0	0	3

**Legends:** L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

**\*Teacher Assessment** shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

**Course Objectives:-**

1. To provide a basic understanding to the students about the concept and significance of work-study and productivity management.
2. To provide a basic understanding to the students about wage incentives; job evaluation and ergonomics.

**Course Outcomes:-**

After completion of this course, the students will be able to describe the followings:

1. Students will be able to calculate the basic work content of a specific job for employees of an organization.
2. Students will be able to analyze and calculate the level of risk in a job causing stress, fatigue, and musculoskeletal disorders and design appropriate work systems.
3. Students will be able to analyze the existing methods of working for a particular job and develop an improved method through questioning techniques.
4. Students will be able to devise appropriate wage and incentive plans for the employees of an organization.

**Syllabus**

**Unit-I**

(9Hrs)

**Productivity Techniques:** Concept of Productivity, Factors affecting Productivity, Total productivity model; Productivity Planning Models; Productivity improvement Techniques.

**Unit-II**

(9Hrs)

**Work Study:** Introduction of work-study and its application. scope of motion and time study - Work methods; the role of work-study in productivity improvement.

**Method Study:** An engineering approach to methods analysis and improvement. Data collection and recording techniques; critical examination and development, creative thinking, tools of creativity.

**Unit-III**

(8Hrs)

**Motion Economy and Analysis:** Principles of motion economy, motion analysis; Micro motion and memo motion study.

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**Work Measurement:** Work measurement techniques, Systems of performance rating; Work Sampling: principles and techniques, application of work sampling studies.

**Unit-IV:** (9Hrs)

**Wage Incentives:** Various types of wage Incentive schemes and their impact on productivity. Comparison of different incentive plans, design of incentive plans,

**Job Evaluation:** Purpose, Various types of the job evaluation system and their application of classification. Merit Rating. Performance Appraisal.

**Unit-V** (8Hrs)

**Introduction to Ergonomics:** Ergonomics as a multi-disciplinary field, components. Importance of ergonomics in equipment and work design. Concept of a man-machine system; Types and characteristics of Man-machine systems.

**Reference Books:**

1. Sumanth D.J., "Productivity Management", TMH, 2015.
2. I.L.O., "Introduction of Work Study", 2012.
3. Maynard H.B., "Industrial Engineering Hand Book", McGraw-Hill Education; 5th edition, 2001.
4. Jhamb L.C., "Workstudy and Ergonomics", EPH, 2007.
5. Lakhwinder P.S., "Work Study and Ergonomics", 2020, Cambridge University Press.

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