



**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 (Odd Semester)**  
**(2021-2025)**

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*				
BTMEGE15	GE	TWO WHEELER TECHNOLOGY	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:-**

The primary objective of the course is to describe and develop knowledge of (A) power produced in two wheelers (B) working of fuel and ignition system, (C) chassis and sub-system, (D) brakes and wheels grinding (E) battery, lighting and maintenance and servicing of two wheelers.

**Course Outcomes:-**

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

1. Students will be able to understand production of power from engines in two wheelers.
2. Students will be able to understand fuel supply and ignition system of two wheelers.
3. Students will be able to understand the chassis system and its sub-systems.
4. Students will be able to understand the working of braking systems and theory of wheels.
5. Students will be able to understand battery system, importance of helmet and major maintenance and servicing of two wheelers.

**Syllabus**

**Unit-I**

(8 Hrs)

**The Power Unit:** Two stroke and four stroke SI & CI engine construction and working, merits and demerits; symmetrical and unsymmetrical valve & port timing diagrams; scavenging process

**Unit-II**

(9 Hrs)

**Fuel and Ignition Systems:**

Fuel system – different circuits in two wheeler fuel systems, fuel injection system; Lubrication system; Ignition systems - magneto coil and battery coil spark ignition system, electronic ignition system;

Starting system - kick starter system – self starter system; recent technologies

**Chairperson**  
Board of Studies  
Shri Vaishnav Vidyapeeth  
Vishwavidyalaya, Indore

**Chairperson**  
Faculty of Studies  
Shri Vaishnav Vidyapeeth  
Vishwavidyalaya, Indore

**Controller of Examinations**  
Shri Vaishnav Vidyapeeth  
Vishwavidyalaya, Indore

**Joint Registrar**  
Shri Vaishnav Vidyapeeth  
Vishwavidyalaya, Indore





**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 (Odd Semester)**  
**(2021-2025)**

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*				
BTMEGE15	GE	TWO WHEELER TECHNOLOGY	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.

**Unit-III** **(9 Hrs)**

**Chassis and Sub-systems:**

Mainframe, its types, chassis and shaft drive; single, multiple plates and centrifugal clutches; gear box and gear controls.

Front and rear suspension- systems; shock absorbers; panel meters and controls on handle bar

**Unit-IV** **(10 Hrs)**

**Brakes and Wheels:**

Brakes: drum brakes and disc brakes: construction and working and its types, front and rear brake links layouts, brake actuation mechanism.

Wheels: front and rear, wheel rim types, construction of spokes wheel, construction of cast wheel, construction of alloy wheels, their merits and demerits, steering geometry.

Tyre: functions, materials, types, construction of tube type tyre and tubeless tyres, its advantages and comparison.

**Unit-V** **(9 Hrs)**

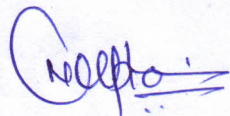
**Other Systems and Maintenance:**

Battery and Lighting: battery specifications, charging system, lighting (front & rear), instruments & indicators. Helmets: Types & purpose. Safety standards related to helmets.

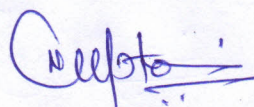
Maintenance: importance of maintenance, general servicing and maintenance, scheduled maintenance, servicing of two wheeler vehicles, periodic checkup, trouble shooting causes and remedies, case studies.

**Text and Reference Books:**

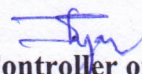
1. "Two and Three Wheeler Technology" by D.U. Panchal, PHI, 2015.
2. "Motor Cycle Engineering" by P.E. Irving, Temple Press Book, London, 2002.
3. "Motorcycle Maintenance" by M. Zimmerman, Whitehorse Press, 2014.
4. "Two Wheelers" by K. K. Ramalingam, Scitech publications, Chennai, 2009.
5. "A text book of Two Wheeler Technology" by S.M. Solanki, Nirali Pub. 2016.
6. "The Motor Vehicle" by Siegfried Herrmann, Asia Publishing House, Bombay, 2011.



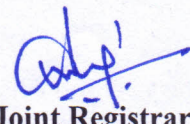
**Chairperson**  
Board of Studies  
Shri Vaishnav Vidyapeeth  
Vishwavidyalaya, Indore



**Chairperson**  
Faculty of Studies  
Shri Vaishnav Vidyapeeth  
Vishwavidyalaya, Indore



**Controller of Examinations**  
Shri Vaishnav Vidyapeeth  
Vishwavidyalaya, Indore



**Joint Registrar**  
Shri Vaishnav Vidyapeeth  
Vishwavidyalaya, Indore