Course Code:		Credits:	03	
BCVA104N / BCVA204N	Introduction to Civil			
Hours/Week (L:T:P) : 3-0-0	Engineering	<b>CIE Marks :</b>	50	
Total Hours - 40		SEE Marks :	50	
Course Type: Theory				
Course Objectives:				
• To make students learn the scop	pe of various specializations of ci	vil engineering.		
• To make students learn the con-	cepts of sustainable infrastructure	2		
• To develop students' ability to	o analyse the problems involvin	g forces, mome	nts with	
theirapplications.				
• To develop the student's ability	to find out the center of gravity of	of different builtu	p sections	
and their applications.				
• To develop the student's abili	ty to find out themoment of ine	ertia of different	builtup	
sections inertia and theirapplica	ttions.		00 11	
~	Module-1		<b>08 Hrs.</b>	
Civil Engineering Disciplines and	Building Science	Enginagring (	Paotochnical	
Engineering Hydroulics & Wate	r Besources TransportationE	ngineering, C	vironmental	
Engineering Construction planning	& Resources, TransportationE & Project management	angineering, En	vironnentai	
<b>Basic Materials of Construction</b>	Bricks Cement & mortars Plain	Reinforced & Pre	. 1	
Dubie muterials of competaction.			-stressed	
Concrete, Structural steel, Construc	tion Chemicals.		e-stressed	
Concrete, Structural steel, Construc Structural elements of a building	tion Chemicals. <b>2:</b> Foundation, plinth, lintel, che	ija. Masonrv wa	ll. column.	
Concrete, Structural steel, Construc Structural elements of a building beam, slab and staircase	tion Chemicals. g: Foundation, plinth, lintel, che	jja, Masonry wa	e-stressed	
Concrete, Structural steel, Construc Structural elements of a building beam, slab and staircase	tion Chemicals. g: Foundation, plinth, lintel, che Module-2	jja, Masonry wa	e-stressed ll, column, <b>08 Hrs.</b>	
Concrete, Structural steel, Construc Structural elements of a building beam, slab and staircase Societal and Global Impact of Inf	tion Chemicals. g: Foundation, plinth, lintel, che Module-2 rastructure	jja, Masonry wa	-stressed ll, column, 08 Hrs.	
Concrete, Structural steel, Constructural elements of a building beam, slab and staircase Societal and Global Impact of Information Infrastructure: Introduction to susting the statement of the	tion Chemicals. g: Foundation, plinth, lintel, che Module-2 rastructure tainable development goals, Sma	jja, Masonry wa	-stressed ll, column, 08 Hrs. clean city	
Concrete, Structural steel, Constructural elements of a building beam, slab and staircase Societal and Global Impact of Infinite Infrastructure: Introduction to sust concept, Safe city concept	tion Chemicals. g: Foundation, plinth, lintel, che Module-2 rastructure tainable development goals, Sma	jja, Masonry wa	-stressed ll, column, 08 Hrs. clean city	
Concrete, Structural steel, Constructural elements of a building beam, slab and staircase Societal and Global Impact of Infrastructure: Introduction to sus concept, Safe city concept Environment: Water Supply and	tion Chemicals. g: Foundation, plinth, lintel, che Module-2 rastructure tainable development goals, Sma Sanitary systems, urban air poll	jja, Masonry wa rt city concept, ution manageme	-stressed ll, column, 08 Hrs. clean city ent, Solid	
Concrete, Structural steel, Constructural elements of a building beam, slab and staircase Societal and Global Impact of Infinite Infrastructure: Introduction to sust concept, Safe city concept Environment: Water Supply and wastemanagement, identification of	tion Chemicals. g: Foundation, plinth, lintel, che Module-2 rastructure tainable development goals, Sma Sanitary systems, urban air poll Landfill sites, urban flood contro	jja, Masonry wa rt city concept, ution manageme	-stressed ll, column, <b>08 Hrs.</b> clean city ent, Solid	

**Built-environment:** Energy efficient buildings, recycling, Temperature andSound control in buildings, Security systems; Smart buildings

Module-308 Hrs.Analysis of force systems: Concept of idealization, system of forces, principles of<br/>superposition and transmissibility, Resolution and composition of forces, Law of Parallelogram<br/>of forces, Resultant of concurrent and non-concurrent coplanar force systems, moment of forces,<br/>couple, Varignon's theorem, free body diagram, equations of equilibrium, equilibrium of<br/>concurrent and non-concurrent coplanar force systems. Numerical examplesModule-408 Hrs.

Module-408 Hrs.Centroid:Importance of centroid and centre of gravity, methods of determining the<br/>centroid,locating the centroid of plane laminae from first principles, centroid of built-up<br/>sections. Numerical examples08 Hrs.Module-508 Hrs.

Module-508 Hrs.Moment of inertia:Importance of Moment of Inertia, method of determining the second<br/>moment of area (moment of inertia) of plane sections from first principles, parallel axis theorem<br/>andperpendicular axis theorem, section modulus, radius of gyration, moment of inertia of built-<br/>up sections, Numerical Examples

Suggested Learning resources												
Text Books												
1. Bansal R. K., Rakesh Ranjan Beohar and Ahmad Ali Khan, Basic Civil Engineering												
andEngineering Mechanics, 2015,Laxmi Publications.												
2. Kolhapure B K, Elements of Civil Engineering and Engineering Mechanics, 2014,												
EBPB												
Reference Books:												
1. Beer F.P. and Johnston E. R., Mechanics for Engineers, Statics and Dynamics, 1987,												
McGraw Hill.												
2. Irving H. Shames, Engineering Mechanics, 2019, Prentice-Hall.												
3. Hibbler R. C., Engineering Mechanics: Principles of Statics and Dynamics, 2017,												
Pearson Press.												
4. Timoshenko S, Young D. H., Rao J. V., Engineering Mechanics, 5th Edition, 2017,												
Pearson Press.												
5. Bhavikatti S S, Engineering Mechanics, 2019, New Age International												
6. Reddy Vijaykumar K and Suresh Kumar K, Engineering Mechanics, 2011, BS												
publication												
Course Outcomes:												
CO1: Understand the various disciplines of civil engineering												
CO2: Understand the infrastructure requirement for sustainable development												
CO3: Compute the resultant and equilibrium of force systems.												
CO5: Locate the centroid of plane and built-up sections												
COS: Compute the moment of inertia of plane and built-up sections.												
		С	O an	d PC	) Maj	oping	5					
					Pro	ogran	nme	Outc	omes			
Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12
CO1	2	3										
CO2	2	3										
(03	2	3										
CO4	2	2										
005	2	3										
CO5	2	3										