No.	Information on Every Subject(2019-2020)	
1.	Unit Name:	Materials Science
2.	Unit Code:	Met-41023
3.	Classification:	Engineering Subject
4.	Credit Value:	3
5.	Semester/Year Offered:	1/4
6.	Pre – requisite:	Materials Science
7.	Mode of Delivery:	Lecture, Tutorial and Practical
8.	Assessment System and Breakdown of Marks:	
	Tutorial Practical	15% 15%
	Mid – term/Final Examination	70%
9.	Academic Staff Teaching Unit:	Professor
10.	Course outcome of unit: In this course, students will • describe the structure – property relationships in thermoplastics, elastomers and thermosetting polymers • apply particulate composites • apply fiber reinforced composites, laminar composite materials	
11.	Synopsis of unit: The course covers polymer structure, mechanical behavior of polymer, mechanisms of deformation and for strengthening of polymers, crystallization, melting and glass transition phenomena in polymer, polymer types, polymer synthesis and processing, particle reinforce composites, fiber reinforce composites, structural composites, applications of laminar composites.	
12.	Topic 1.Polymer -Classification of Polymers -Addition and Condensation Polymerization -Degree of Polymerization -Typical Thermoplastics -Structure-Property Relationships in Thermoplastics -Effect of Temperature on Thermoplastics - Mechanical Properties of Thermoplastics -Elastomers -Thermosetting Polymers -Adhesives -Polymer -Processing and Recycling 2. Composite	

	-Dispersion strengthened composites -Particulate composites -Fiber reinforced composites -Characteristics of fiber reinforced composites -Manufacturing fibers and composites -Fiber reinforced systems and applications -Laminar composite materials -Examples and application of laminar composites -Sandwich structures
13.	Main references: The Science and Engineering of Materials, Six Edition, Donald R. Askeland
14.	Additional reference: : Materials Science and Engineering An Introduction, Eight Edition, William D. Callister , Jr. David G. Rethwisch

List of Pratical

Lab	Activity	Contact Hours
1 2 3	Topic: Introduction to polymer processing (with video) Topic: Polymer processing techniques (with video) Topic: Production of composite (with video)	

No.	Information on Every Subject	
1.	Unit Name:	Materials Science
2.	Unit Code:	Met-42023
3.	Classification:	Engineering Subject
4.	Credit Value:	3
5.	Semester/Year Offered:	2/4
6.	Pre – requisite:	Materials Science
7.	Mode of Delivery:	Lecture, Tutorial and Practical
8.	Assessment System and Breakdown of Marks:	
	Tutorial Practical	15% 15%
	Mid – term/Final Examination	70%
9.	Academic Staff Teaching Unit:	Professor
10.	Course outcome of unit: In this course, students will • describe application and properties of ceramics • apply glass ceramics and refractories • describe conductivity of metals and alloys • apply polarization, ferroelectricity	
11.	Synopsis of unit: The course covers ceramic structures, mechanical properties, types and application of ceramics, fabrication and processing of ceramics, Ohm's law and electrical conductivity, brand structure of solids, semiconductors, insulators, and dielectric properties	
12.	Topic 1.Ceramic Materials -Application of ceramics -Properties of ceramics -Synthesis and processing of ceramic powders -Characteristics of sintered ceramics -Inorganic glasses -Glass ceramics - Processing and applications of clay products -Refractories -Other ceramic materials 2. Electronic Materials -Ohm's law and electrical conductivity -Band structure of solids -Condctivity of metals and alloys -Semiconductors -Application of semiconductors -General overview of integrated circuit processing -Deposition of thin films -Conductivity in other materials	

	-Insulators and dielectric properties -Polarization in dielectrics -Electrostriction, piezoelectricity and ferroelectricity
13.	Main references: The Science and Engineering of Materials, Six Edition, Donald R. Askeland
14.	Additional reference: : Materials Science and Engineering An Introduction, Eight Edition, William D. Callister , Jr. David G. Rethwisch

List of Pratical

Lab	Activity	Contact Hours
1	Topic: Slip casting	
2	Topic: Porosity of crystalline materials	
3	Topic: Plaster Mold making	