Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
gram Name: Bachelor of Technology (Textile Engineering)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM	MST	Q/A	END SEM	Q/A				
BTMA401	BS	Statistics and Quality Control	60	20	20	-	-	3	1	-	4

Course Objective

1. *To provide the knowledge of statistical analysis of test data.*
2. *To provide knowledge of quality control chart.*
3. *To build up skill and ability for R and D work through statistical analysis.*

Course Outcomes

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

1. *demonstrate the knowledge for statistical analysis of test data.*
2. *make the quality control chart of the manufactured product.*
3. *identify and analyze the reason of defect through statistical analysis and use the knowledge in developing the product.*
4. *illustrate and discuss the sampling methods.*

Course Content:

UNIT – I
Collection and presentation of data, Measures of central tendency, Measures of variation, Skewness, Moments and kurtosis, Probability Theory, priori and posteriori probabilities, conditional probabilities Bay's theorem (Simple Problems).

UNIT – II
Probability distribution: discrete distribution, binomial, and poison distributions. Continuous Normal Distribution, Exponential Distribution, central value theorem, Normal Probability curve, calculation of mean and variance From Normal Curve, Practical usefulness of normal Distribution, sampling distribution, Bivariate Distribution, Correlation and Regression, Analysis of Variance, significance of error R2 (one way classification only).

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Vishwavidyalaya, Indore	Vishwavidyalaya, Indore		

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM	MST	Q/A	END SEM	Q/A				
BTMA401	BS	Statistics and Quality Control	60	20	20	-	-	3	1	-	4

UNIT – III

Elementary theory of testing of hypothesis, Statistical Hypothesis, Null Hypothesis, Errors of first and second kind, Critical Region, level of Significance. Chi-square test of goodness of fit Test of significance based on T, F and Z distribution.

UNIT – IV

General idea of sampling method, random sample, sampling size, sample size for different distribution, differences between average and variances.

UNIT – V

Statistical quality control chart, control limits, X, R, P, Pn chart etc., analysis by defects, number of defects (C chart), introduction to TQM and ISO 9000.

References:

- Gupta, Kapoor: Fundamental of Mathematical Statistics
- Booth J.E.: Textile Testing.
- SITRA : Application of statistics in textile.
- Grover B. & Hanby D. S.: Textile testing and Quality Control. Grant Eugene; Statistical Quality control; TMH

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Shri Vaishnav Institute of Science
Name of Program: B.Tech. (All streams)
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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*				
BTCH101	BEC	Applied Chemistry	60	20	20	30	20	3	1	2	5

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 Educational Objectives (CEOs):
The subject aims to provide the student with:
1. To bring adaptability to new developments in Engineering Chemistry to acquire the skills required to become a perfect engineer.
2. To include the importance of water analysis and treatment in industrial usage, significance of corrosion control to protect the structures, structure, and applications of electrochemical cells.
3. To acquire required knowledge about engineering materials like cement, refractories, and lubricants and to understand the instrumentation techniques used in industries.
4. To acquaint the students with practical knowledge of the basic concepts of chemistry.

Course Outcomes (COs):
1. Students will gain the basic knowledge of chemical procedures related to polymerization, redox reactions and corrosion and its control.
2. They learn the use of fundamental principles to make predictions about the general properties of materials like lubricants, cement and refractories and the instrumentation techniques used in industries.
3. They can understand the basic properties of water and its treatment to overcome the boiler related problems in industries and power plants.
4. They can predict potential applications of chemistry and practical utility to become good engineers and entrepreneurs.

Syllabus

Unit-I

POLYMERS AND REINFORCED PLASTICS

Classification of polymers - types of polymerization reactions - mechanism of addition polymerization: free radical, ionic and Ziegler - Natta - effect of structure on the properties of polymers - strength, plastic deformation, elasticity, and crystallinity -Preparation and properties of important resins: Polyethylene, PVC, PMMA, Polyester, Teflon, Bakelite and Epoxy resins - compounding of plastics - moulding methods - injection, extrusion, compression.

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Shri Vaishnav Institute of Science
Name of Program: B.Tech. (All streams)
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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*				
BTCH101	BEC	Applied Chemistry	60	20	20	30	20	3	1	2	5

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

(A) ELECTROCHEMISTRY

Arrhenius theory of electrolytic dissociation, Transport number, Kohlrausch's law, Solubility product, Redox reaction, Electrochemical and concentration cells and their applications, Ion selective electrodes.

(B) CORROSION AND ITS CONTROL

Corrosion: Basic concepts - mechanism of chemical, electrochemical corrosion - Pilling Bedworth rule – Types of Electrochemical corrosion - galvanic corrosion - differential aeration corrosion - pitting corrosion - stress corrosion – Measurement of corrosion (wt. loss method only) - factors influencing corrosion. Corrosion control: Cathodic protection - sacrificial anodic method – corrosion inhibitors. Protective coatings: surface preparation for metallic coatings - electro plating (copper plating) and electroless plating (Nickel plating) - chemical conversion coatings - anodizing, phosphating & chromate coating.

Unit-III

BASIC INSTRUMENTAL TECHNIQUES

Basic principles, instrumentation, and applications of UV - visible spectroscopy, Infrared spectroscopy, and flame photometry. General introduction of Chromatography.

Unit-IV

WATER ANALYSIS AND TREATMENT

Water quality parameters: Physical, Chemical & Biological significance - Hardness of water - estimation of hardness (EDTA method) - Dissolved oxygen – determination (Winkler's method), Alkalinity - determination - disadvantages of using hard water in boilers: Scale, sludge formation - disadvantages - prevention - treatment: Internal conditioning - phosphate, carbon and carbonate conditioning methods - External: Zeolite, ion exchange, Lime Soda methods & Numericals- desalination - reverse osmosis and electrodialysis - domestic water treatment.

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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*				
BTCH101	BEC	Applied Chemistry	60	20	20	30	20	3	1	2	5

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

(A) LUBRICANTS

Mechanism of lubrication, Classification of lubricants, Properties & testing of lubricating oil. Definition of viscosity of a liquid; Determination of Viscosity; Shear Viscosity; Intrinsic Viscosity; Molecular weight from Viscosity measurement & Numerical problems based on viscosity index.

(B) ENGINEERING MATERIALS

Cement and Refractories.

References

1. Engg. Chemistry- Rath cengage learning.
2. Chemistry for Environmental Engineering – Sawyer, McCarty and Parkin McGraw Hill, International.
3. Basic Lubrication theory – Alistair Cameron
4. Engineering chemistry- Dr. Jyoti Mitna
5. Engineering chemistry- Dr. Sunita Ratan
6. Applied Chemistry – S.M. Khopkar
7. Polymer Science- V.R. Gowawriker
8. Introduction of polymer science – G.S. Mishra.

List of Experiments

Exp. 01. To estimate the strength of the given unknown solution of Mohr's salt (Ferrous ammonium sulphate ($FeSO_4(NH_4)_2SO_4.6H_2O$) using $KMnO_4$ solution as an intermediate.

Exp.02 Estimation of hardness by EDTA method.

Exp.03. Conductometric titration - determination of strength of an acid.

Exp.04. Estimation of iron by potentiometry.

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BTCH101	BEC	Applied Chemistry	60	20	20	30	20	3	1	2	5

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; C - Credit.
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Exp.05. Determination of molecular weight of polymer by viscosity average method.

Exp.06. Determination of Na / K in water sample by Flame photometry (Demonstration).

Exp.07. Determination of total alkalinity and acidity of a water sample.

Exp.08 Estimation of calcium ions present in tap water. (TDS).

Exp.09 To determine the viscosity of a given liquid (30% sugar solution) at room temperature using Ostwald's viscometer.

Exp.10 Testing of Flash point of lubricating oil by Pensky Martins apparatus.

Exp.11 To determine the viscosity index by Red wood Viscometer 1 & 2.

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Shri Vaishnav Institute of Technology and Science
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B.Tech. in Textile
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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*				
BTEI508		INSTRUMENTATION AND MEASUREMENT CONTROL	60	20	20	30	20	3	1	2	5

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 Educational Objectives (CEOs):

1. To provide knowledge on the fundamentals of measuring instruments with common types of errors.
2. To provide a knowledge on the basics of control system theory
3. To introduce different types of sensors, transducers and strain gauges ,thermocouples, thermometers and flow meters used for measurements
4. To introduce measuring equipments used for linear and angular measurements.
5. To familiarize students with surface roughness measurements on machine components

Course Outcomes (COs):

Students will be able to

1. Understand measurement techniques and use of measuring instruments
2. knowledge for dealing with problems involving control system fundamentals
3. work in Quality control and quality assurances divisions in industries
4. Design a sensors and transducers used for analysis.
5. Design measuring equipments for the various Parameters.
6. Check and measure quality in engineering products.

Syllabus

UNIT I **7 Hrs.**

Basic concepts of measurements: Introduction, idea of a generalized measurement system, basic characteristics of measuring devices - accuracy, precision, error, hysteresis, resolution, threshold, repeatability, reliability, span, dynamic accuracy; calibration.

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BTEI508		INSTRUMENTATION AND MEASUREMENT CONTROL	60	20	20	30	20	3	1	2	5

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
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UNIT II **7 Hrs.**

Transducer: Introduction, classification, basic requirements. Displacement measurement: Idea of servo potentiometers, differential inductors and transformers, capacitive, shaft encoders, hall effect devices proximity devices and digital transducers. Strain gauge: basic principal, gauge factor, types of strain gauge, materials and their properties. LVDT

UNIT III **8 Hrs.**

Temperature Measurement: Temperature standards, Temperature scales; Thermometry based on thermal expansion: Liquid in glass thermometers, Bimetallic Thermometers; Electrical resistance thermometry: Resistance Temperature Detectors, Thermistors, Thermoelectric

UNIT IV **7 Hrs.**

Pressure and Velocity Measurement: Relative pressure scales, pressure reference instruments, barometer, manometer, deadweight tester, pressure gauges and transducers, total and static pressure measurement in moving fluids Flow measurement: Pressure differential meters: Orifice meter, Venturi meter, Rota meter.

UNIT V **9 Hrs.**

Introduction to control systems: Examples of control systems. Open loop and closed loop control. Transfer function, impulse response function, block diagram of closed loop system, and block diagram reduction, modeling of mechanical systems, modeling of electrical systems, signal flow graphs. Transient and steady state response analyses: First order systems, unit step and unit impulse response of first order systems, second order systems, unit step and unit Impusle response of second order system.

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BTEI508		INSTRUMENTATION AND MEASUREMENT CONTROL	60	20	20	30	20	3	1	2	5

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.

Text Books:

1. Metrology and Instrumentation – Swahney.
2. Instrumentation Measurement and Analysis; TMH, - Nakra B C and Chaudhary K K.
3. Instrumentation for Engineers and scientist;Oxford higher Ed - Turner J D and Hill M.

References:

1. Instrumentation & Control - Rangan, Mani & Sharma.
2. Transducers & Instrumentation - Murty.
3. Control Systems Engineering - Nagrath and Gopal.
4. Modern Control Engineering; 4e Pearson Education, New Delhi - Katsuhiko Ogata.

List of Experiments:

1. Detailed study of LVDT & Measurement of distance using LVDT.
2. Learning techniques of measurement of strain using strain gauge.
3. Observe and Analysis the characteristics of NTC thermistor.
4. To observe the water level measurement
5. To analysis the Resistance Temperature Detector.
6. Learning the techniques of measurement of temperature of thermocouple.
7. Learning the techniques of measurement of pressure and characteristics of pressure transducer.
8. To observe the dead weight pressure gauge
9. To measure the distance using ultrasonic transducer
10. Demonstration and performance of CRO.

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Choice Based Credit System (CBCS) Scheme in light of NEP-2020

B. Tech/B.Tech+MBA in Mechanical Engineering

(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*				
BTME101	BEC	**ENGINEERING DRAWING**	60	20	20	30	20	2	0	4	**4**

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 Educational Objectives (CEOs):

To familiarize with concepts of (A) scale, conic sections and engineering curves (B) projections of points and line in all quadrants; (C)construction of geometrical figures& solids, with its orientation on horizontal and vertical planes, and its projection; section of solid, (D)development of solid and isometric projection view.

Course Outcomes:

After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes:

1. Student would be able to draw scale, conic sections and engineering curves.
2. Student would be able to draw projection of point and line; identify the use of these concepts in practical life.
3. Students would be able to understand plain & 3D model at various orientations and draw their projection.
4. Student would be able to draw the projections of with and without sectioning of solid models and surface development.
5. Students would be able to understand the difference between orthographic view and isometric projections.

Syllabus:

UNIT I **(8 Hrs)**

Scales, Conic Section & Engineering Curves Scales: Representative Factor, types of scales, principle and construction of different scales

Conic Section: Construction of ellipse, parabola and hyperbola by different methods; Normal and Tangent

Engineering Curves: Cycloid, Epicycloids, Hyper cycloid, Involutes, Archimedean and Logarithmic spirals

UNIT II **(9 Hrs)**

Projection of Points & Line Projection: Introduction to projection, Types of projection, terminology, first angle and third angle

Projection of Points: Introduction of point, conventional representation

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BTME101	BEC	**ENGINEERING DRAWING**	60	20	20	30	20	2	0	4	**4**

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.

Projection of Lines: Introduction of straight line, orientation of straight line, true inclination and true length, concepts of end projectors, plan and traces and auxiliary planes.

UNIT III **(9 Hrs)**

Projections of Planes: Introduction of planes, types of planes, orientation of planes, projection of planes in different positions, traces of planes

Projection of Solids: Introduction of solids, classification of solids, recommended naming of corners of solids, orientation of solids

UNIT IV **(8 Hrs)**

Section of Solids: Introduction of section of solids, terminology, types of section planes, section of prisms, section of pyramid and section of composite solids

Development of Surfaces: Introduction of development of surfaces, classification of surfaces, methods of development, development of prisms, pyramids, cylinder and cone, anti-development

UNIT V **(7 Hrs)**

Isometric Projections: Introduction of isometric projection, terminology, isometric projections and isometric views, isometric views of planes, right solids, truncated solids and composite solids.

Text and Reference Books:

1. "Engineering Graphics" by P.I. Varghese, McGraw Hill Edu., 2012.
2. "Engineering Drawing and graphics" by K. Venugopal, New Age (I) Pub., 2004.
3. "Engineering Drawing" by N.D. Bhatt, Charotar Publishing House, 2014.
4. "Engineering Drawing" by Basant Agarwal & C.M. Agarwal, McGraw Hill Edu., 2013.
5. "Engineering Drawing" by P.S. Gill, S.K. Kataria & Sons, 2013.

List of Experiments:

1. Drawing various types of scales using representative fraction.
2. Drawing various conics section.
3. Projection of points in all quadrants.
4. Projection of straight lines in all quadrants in various orientations.

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COURSE CODE	CATEGORY	COURSE NAME	TEACHING &EVALUATION SCHEME								
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BTME101	BEC	**ENGINEERING DRAWING**	60	20	20	30	20	2	0	4	**4**

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.

5. Projection of geometrical planes with various orientations.
6. Projection of solid models with various orientations.
7. Projection of section of solids by using various types of cutting planes.
8. Drawing development of surface using various methods of prisms, pyramids, cone, cylinder, etc.
9. Drawing anti- development of surfaces.
10. Drawing isometric projections using various methods and isometric views.

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COURSE CODE	CATEGORY	COURSE NAME	TEACHING &EVALUATION SCHEME								
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			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTME103	BEC	**WORKSHOP PRACTICES**	0	0	0	30	20	0	0	2	**1**

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 Educational Objectives (CEOs):
To paraphrases with (A) workshop technology, industrial safety, and understand material properties. (B) Carpentry shop, fitting shop, (C) welding and casting.

Course Outcomes:
After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes:

1. Student would be able to understand the need of workshop, technology related to it, and industrial safety and precautions.
2. Student would be able to use carpentry tools, analyses various wood joints and their properties.
3. Students would be able to use fitting tools to make various shapes and design.
4. Student would be able to recognize various welding techniques and their needs.
5. Students would be able to design various shapes by using casting technologies.

Syllabus:

UNIT I **(6 Hrs)**

Introduction to Workshop Technology & Industrial Safety:

Workshop Technology: Introduction, need of workshop and types of workshop

Industrial Safety- Introduction, objective of industrial safety, causes of accidents, common sources of accidents, preventive measures, and common safety methods.

UNIT II **(6 Hrs)**

Carpentry Shop:

Introduction, types of timbers, defects in timbers, timber prevention, characteristics of good timber, common tools used in carpentry shop (marking and measuring tools; cutting tools and striking tools), and common wood joints (cross-lap, corner-lap, dovetail and bridle joints).

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			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTME103	BEC	**WORKSHOP PRACTICES**	0	0	0	30	20	0	0	2	**1**

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
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UNIT III **(6 Hrs)**

Fitting Shop:

Introduction, tools used in fitting shop (measuring tools, holding tools, cutting tools, striking tools and supporting tools) and operation performed in fitting work.

UNIT IV **(6 Hrs)**

Welding Shop:

Introduction, terminological elements of welding process, welding joints (lap joints and butt weld joint), welding positions, advantages and disadvantages of welding, classification of welding, gas welding processes and safety recommendation for gas welding.

UNIT V **(6 Hrs)**

Casting:

Pattern making and sand casting, Pattern materials, Types of pattern, Pattern allowances. Core prints. Moulding sand, ingredients, classification, sand additives, properties of moulding sand, sand preparation and testing. Green sand mould preparation. Cores and core making – Types of cores.

Text and Reference Books:

1. "Workshop Technology (Part-I)" by W.A.J. Chapman, CBS Pub, 2001.
2. "Production Technology (Vol-I)" by R.K. Jain, Khanna Publishers, 19th ed. 2019.
3. "Principles of Manufacturing Material & Process" by J.S. Campbell McGraw Hill, 1984.
4. "Welding: Principles & Practices" by Edward R. Bonhart, McGraw Hill Edu. India
5. "Welding and Welding Technology" by Richard L. Little, McGraw Hill, 2017.
6. "Principles of Foundry Technology" by P.L. Jain, McGraw Hill, 2017.
7. "Manufacturing Technology (Vol-I)" by P. N. Rao, McGraw Hill, 2017.
8. "Workshop Technology (Vol-I)" by B.S. Raghuvanshi, Dhanpat Rai & Co. 2015.

List of Experiments:

1. To study various industrial safety precautions & preventive measures.
2. To study the various timber properties, its defects and its prevention.
3. To make various joints (L-joint, T-joint, Cross joint, etc.) using carpentry tools.

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Choice Based Credit System (CBCS) Scheme in light of NEP-2020

B. Tech/B.Tech+MBA in Mechanical Engineering

(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*				
BTME103	BEC	**WORKSHOP PRACTICES**	0	0	0	30	20	0	0	2	**1**

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
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4. To perform various fitting shop operations using fitting tools.
5. To study various welding methods and its safety precaution.
6. To make various welding joints (Butt joints, Lap, joints, corner joints, etc).
7. To study various types of patterns and pattern allowances.
8. To study properties of moulding sand and prepare a mould.
9. To study various types of cores and its application in casting.

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Choice Based Credit System (CBCS) in the Light of NEP-2020
B.Tech. (Non CSE & IT Branch)
(2021-2025)

COURSE CODE	CATEGORY	COURSE NAME	TEACHING&EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			ENDSEM University Exam	Two Term Exam	Teachers Assessment*	ENDSEM University Exam	Teachers Assessment*				
BTCS207	BEC	COMPUTER PROGRAMMING-II	0	0	0	30	20	0	0	2	1

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 understand Object oriented concepts.
2. To understand programming using object oriented techniques.
3. To understand the use of various system libraries.
4. To have the knowledge of important topics and principles of software development.
5. To write a computer program & to solve specified problems.
6. To use the Java SDK environment to create, debug and run simple Java programs.
7. To study event driven Graphical User Interface(GUI)programming

Course Outcomes:

1. Students should be able to explain the object oriented concepts.
2. Students should be able to write programs using object-based programming techniques including classes, objects and inheritance.
3. Able to use of various system libraries.
4. Be aware of the important topics and principles of software development.
5. Have the ability to write a computer program to solve specified problems.
6. Be able to use the JavaSDK environment to create, debug and run simple Java programs.
7. Introduce event driven Graphical User Interface(GUI) programming

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BTCS207	BEC	COMPUTER PROGRAMMING-II	0	0	0	30	20	0	0	2	1

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UNIT-I

Java Fundamentals: Features of Java,OOPS Concepts Java virtual machine, Byte code interpretationDatatypes,variable,arrays,expressions,operators,andcontrolstructures,Objects,Introductiontoclassinstance members and member functions, constructors, constructor overloading, Static Method, Static classes ,Inner classes.

UNIT-II

Introduction to Java classes and objects: Java features: Java syntax, data types, data type conversions, control statements, operators and their precedence. Introduction to Class: Instance members and member functions. Inner Classes, String Handling, Wrapper classes

UNIT-III

Inheritance, Polymorphism and Collection: Class relationships: Inheritance and its types, Merit and Demerits. Association, Association inheritance, Polymorphism: Dynamic method dispatch, Runtime polymorphism, Abstract classes, Interface sand packages, Collections.

UNIT-IV

Exception Handling and Multithreading: Exceptions: Need for exceptions, Exception hierarchy:CheckedUncheckedexceptions,Try,catch,finally,Throw,throws,creatingexceptions.Multithreading:ThreadLifecycle,Multihreading advantages and issues, Simple thread program, Priorities and scheduling, Thread Synchronization.

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			ENDSEM University Exam	Two Term Exam	Teachers Assessment*	ENDSEM University Exam	Teachers Assessment*				
BTCS207	BEC	COMPUTER PROGRAMMING-II	0	0	0	30	20	0	0	2	1

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

Java I/O, Applets, Event Handling, and Database Connectivity: Basic concept of streams I/O stream &reader-writer classes. File handling. Applet and its Life Cycle, Basic GUI elements, Event Delegation Model and event handling Swing components: Applet, JButton, JFrame, etc. Sample swing Programs JDBC architecture establishing connectivity and working with connection inter face working with statements, Creating and executing SQLstatements, working with Result Set.

Text Books:

1. Java- Head First 2nd edition Kathy Sierra , Bert Bates.
2. Programming with Java A Primer, E. Balaguruswamy Tata McGraw Hill Companies.
3. Java Programming John P. Flynt Thomson 2nd.

Refrences:

1. Java Programming Language Ken Arnold Pearson.
2. The complete reference JAVA2, Hervertschildt. TMH.
3. Big Java, Cay Horstmann 2nd edition, Wiley India Edition.
4. Java – Balaguruswamy.

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BTCS207	BEC	COMPUTER PROGRAMMING-II	0	0	0	30	20	0	0	2	1

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

1. InstallationofJ2SDK
2. Write a program to show Scope of Variables
3. Write a program to show Concept of CLASS in JAVA
4. Write a program to show Type Casting in JAVA
5. Write a program to show How Exception Handling is in JAVA
6. Write a Program to show Inheritance
7. Write a program to show Polymorphism
8. Write a program to show Access Specifiers (Public,Private,Protected)in JAVA
9. Write a program to show use and Advantages of CONTRUCTOR.
10. Write a program to show Interfacing between two classes
11. Write a program to Add a Class to a Package
12. Write a program to show Life Cycle of a Thread
13. Write a program to demonstrate AWT.
14. Write a program to Hide a Class
15. Write a Program to show Data Base Connectivity Using JAVA
16. Write a Program to show "HELLOJAVA" in Explore using Applet
17. Write a Program to show Connectivity using JDBC
18. Write a program to demonstrate multithreading using Java.
19. Write a program to demonstrate applet lifecycle.
20. Write a program to demonstrate concept of servlet.

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COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
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			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTTX201	DCC	FUNDAMENTALS OF TEXTILE ENGINEERING	60	20	20	-	-	3	1	0	4

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Course Educational Objective (CEOs):

1. The course will provide with comprehensive understanding of Textile industry, its products and its impact in a global scenario.
2. It will also develop the knowledge of different textile processes.

Course Outcomes (Cos):
Student will:

1. Understand the influence of textile industry on India and global economy
2. Demonstrate the fundamentals of textile fiber classifications.
3. Have better understanding of textile spinning processes of the industries.
4. Have better understanding of textile Weaving processes of the industries.
5. Have better understanding of textile chemical processes of the industries.
6. Have better understanding of Garment Processes of the industries.

SYLLABUS

Unit I Textile Fibres Properties and Their Identification Process **10 HRS**

Over all View Of Textile industries in India, Textile terminology, Classification of fibres, Identification of fibers, General properties of fibres (length, strength, flexibility, spin-ability, uniformity, density, luster, moisture and moisture regain, elasticity, elastic recovery, elongation, water repellant fibres, resiliency and Compressibility)

Unit II Yarn Manufacturing Process/ Spinning **12 HRS**

Definition - Staple fibre , Staple length, lint, linters etc types of yarns - spun yarn and filament yarn , Yarn count and yarn twist, yarn numbering system and Novelty yarns, introduction to the process of conversion of fibre to yarn,

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BTTX201	DCC	FUNDAMENTALS OF TEXTILE ENGINEERING	60	20	20	-	-	3	1	0	4

Legends: L - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
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Unit III Fabric Manufacturing Process **11 HRS**

Introduction to process of Conversion of yarn into fabric, introduction to knitting process, Non-woven fabrics, Grey fabric inspection.

Unit IV Textile Chemical Processing **09 HRS**

Introduction to pretreatment process. Introduction to dyeing and printing. Introduction to textile finishes, their object and classifications.

Unit V Garment Manufacturing Process **10 HRS**

Introduction to Garment Manufacturing process, overview of garment industry, process flow chat of garment manufacturing, Brief description of garment sampling, grading, marker making, spreading, cutting, sewing, finishing and packing.

References:

1. Advances in Fibre Science by Mukhopadhyay S. K., The Textile Institute, 1992.
2. A Practical Guide to Ring Spinning by Klein W, Textile Institute, 2000.
3. Fundamentals of Spun Yarn Technology by Lawrence Carl A. CRC press London, 2003.
4. Principle of Weaving by Marks & Robinson, Textile Institute, 1976
5. Woven Fabric Production – I (1st Edition) by NCUTE Publication, 2002.
6. Weaving Machines, Mechanisms and Management byTalukdar M. K., Ajgaonkar D. B. and Sriramulu P. K.Mahajan Publishers Pvt Ltd, 2004.
7. Knitting Technology by Spencer, Woodhead Publishing ,Abington Hall, Abington, 2001
8. Scoring and Bleaching by Shennai, V. A. Sevak Publications, Wadala Mumbai, 1987.
9. Technology of Dyeing by Shennai, V. A., Sevak Publications, Wadala Mumbai, 1984
10. Textile Scoring & Bleaching by Trotman E.R., Hodder Arnold, 1968
11. Garment Technology for Fashion Design by CooklinGerry, Wiley-Blackwell; 2 edition, 2012.

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