# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
## Shri Vaishnav Institute of Textile Technology
## Choice Based Credit System (CBCS) in Light of NEP-2020
## Diploma in Textile Engineering
## (2021-2024)

| 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* | | | | |
| DTTX401 | DCS | Yarn Formation Technology II | 60 | 20 | 20 | 30 | 20 | 3 | 0 | 2 | 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):**

1. To understand the processing of card sliver into yarn in ring spinning system.
2. To demonstrate conceptual knowledge to solve the problem in yarn formation.
3. To investigate the reasons of various problems and their solution in draw frame, comber, speed frame and ring frame.

**Course Outcomes (COs)**

Students will be able

1. To apply their knowledge for the production, processing of various fibers and .analysethe problem of various faults occurring in draw frame, comber, speed frame and ring frame machines.
2. To apply their knowledge for setting of machine parameters for various textile fibers.

**Syllabus:**

**Unit I: Draw Frame**

Objectives of drawing, Constructional details of draw frame, Concept of perfect drawing, Different drafting systems, Monitoring and auto levelling of irregularities.Draw frame blending, Recent developments, Performance assessment, Idea of setting, speed, and other technical parameters. Calculations related to draft, production etc.

**Unit II : Comber**

Objectives of combing.Lap preparation, Methods of Lap preparations and its importance, Lap former setting, and speed, Production calculations. Construction, and principle of working, Function of different motions, Combing cycles, Different types of combers, Recent developments, Assessment of comber performance. Ideaof setting, speed, and other technical parameters. Calculation related to production, noil %, draft etc.

Chairperson
Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson
Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examination
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Joint Registrar
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
## Shri Vaishnav Institute of Textile Technology
## Choice Based Credit System (CBCS) in Light of NEP-2020
## Diploma in Textile Engineering
## (2021-2024)

| 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* | | | | |
| DTTX401 | DCS | Yarn Formation Technology II | 60 | 20 | 20 | 30 | 20 | 3 | 0 | 2 | 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.

**Unit III: Speed Frame**

Objectives of speed frame, Construction, and principle of working, Drafting, twisting, and winding, Building mechanism, Different types of flyers, Latest developments, Performance assessment, Idea of setting, speed, and other technical parameters. Calculation related to production, draft etc.

**Unit IV: Ring Frame**

Objectives of Ring frame, Constructional details of ring frame, Theory related to drafting, twisting, winding, spinning balloon, yarn tension and selection of Ring and traveller, Latest developments, Performance assessment, Idea of setting, speed, and other technical parameters. Calculation related to production, draft etc.

**Unit V: General Process Parameters and Maintenance**

Environmental condition for various fibers in draw frame, comber, speed frame and ring frame, Process parameters of different machines for different materials, General idea of speed, setting and their impact on both natural and manmade fibre processing, General idea of defects and remedies in draw frame, comber, speed frame and ring frame, Maintenance schedule and important supervisory check points at draw frame, comber, speed frame and ring frame.

**List of Practical (Expand it if needed):**

1. To study the passage and working of material through Industrial Draw Frame.
2. To study the gearing system of Industrial Draw Frame.
3. To study the passage and working of material through Comber.
4. To study the gearing system of Comber.
5. To study the passage and working of material through Miniature Speed Frame.
6. To study the gearing system of Miniature Speed Frame.

| Chairperson Board of Studies Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore | Chairperson Faculty of Studies Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore | Controller of Examination Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore | Joint Registrar Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore |
|---|---|---|---|

# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
## Shri Vaishnav Institute of Textile Technology
## Choice Based Credit System (CBCS) in Light of NEP-2020
## Diploma in Textile Engineering
## (2021-2024)

| 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* | | | | |
| DTTX401 | DCS | Yarn Formation Technology II | 60 | 20 | 20 | 30 | 20 | 3 | 0 | 2 | 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.

7. To study the passage and working of material through Miniature Draw Frame.
8. To study the gearing system of Miniature Draw Frame.
9. To study the passage and working of material through Ring Frame.
10. To study the gearing system of Ring Frame.

**Text Books:**


1. Manual of Textile Technology-Vol. III, IV &V, W Klein, The Textile Institute, 1993.
2. Elements of Carding and Drawing, A R Khare, Sai Book Center, 1999
3. Elements of Combing, A R Khare, Sai Book Center, 1999.
4. Cotton Drawing and Roving, Gilbert R. Merrill,Universal PublishingCorporation, 1999.
5. Cotton Combing, Gilbert R. Merrill,Universal PublishingCorporation, 1999.
6. Cotton Ring Spinning, Gilbert R. Merrill,Universal PublishingCorporation, 1999.
7. Cotton Spinning, Vol. II, William S Taggart, Macmillan & Co, Limited, 1930.
8. Spun Yarn Technology, Vol. III Drawing, AVenkatasubramani, 1985.
9. Processing of Manmade and Blends on Cotton System, 3rd Edition, Salhotra K R, Textile Association (India), 2004.
10. Cotton Spinning Calculations,William S Taggart, Macmillan & Co, Limited, 1930.
11. Fundamentals of Spun Yarn Technology, Carl A Lawrence, CRC Press, 2003.


| | | | |
|---|---|---|---|
| Chairperson<br>Board of Studies<br>Shri Vaishnav Vidyapeeth<br>Vishwavidyalaya, Indore | Chairperson<br>Faculty of Studies<br>Shri Vaishnav Vidyapeeth<br>Vishwavidyalaya, Indore | Controller of Examination<br>Shri Vaishnav Vidyapeeth<br>Vishwavidyalaya, Indore | Joint Registrar<br>Shri Vaishnav Vidyapeeth<br>Vishwavidyalaya, Indore |

# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
## Shri Vaishnav Institute of Textile Technology
## Choice Based Credit System (CBCS) in Light of NEP-2020
## Diploma in Textile Engineering
## (2021-2024)

| 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* | | | | |
| DTTX402 | DCS | FABRIC FORMATION TECHNOLOGY II | 60 | 20 | 20 | 30 | 20 | 3 | 0 | 2 | 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):**

1. To explain the working of Dobby and Jacquard Shedding Mechanisms.
2. The students will be able to describe the working of various mechanisms automatic loom.
3. The students will be able to describe the working of Various Auxiliary Motion.
4. The students will be able to describe the working of multiple box looms

**Course Outcomes (COs)**

Students will be able to

1. To demonstrate the knowledge of Shedding mechanism and can prepare fabric of desired weave design.
2. Demonstrate the knowledge of working mechanism of auto loom and can prepare fabric of desired quality.
3. Use the knowledge of auxiliary motions and maintain the quality of fabric.
4. Use the knowledge of multiple box looms and can prepare fabric of desired weft pattern

**Syllabus:**

**Unit I: Dobby and Jacquard Shedding:**

Dobby shedding: Objectives and classification of dobby shedding, single lift and double lift dobby and their comparison, working principles of Keighley double lift dobby, Preparation of pattern lattices.

Jacquard shedding: Objectives and classification of Jacquard shedding, single lift and double lift jacquard and their comparison, comparison of coarse pitch and fine pitch jacquard, figuring capacity of jacquard, working principle of single lift single cylinder jacquards and of double lift single cylinder jacquards.

| | | | |
|---|---|---|---|
| Chairperson Board of Studies Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore | Chairperson Faculty of Studies Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore | Controller of Examination Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore | Joint Registrar Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore |

# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
## Shri Vaishnav Institute of Textile Technology
## Choice Based Credit System (CBCS) in Light of NEP-2020
## Diploma in Textile Engineering
## (2021-2024)

| 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* | | | | |
| DTTX402 | DCS | FABRIC FORMATION TECHNOLOGY II | 60 | 20 | 20 | 30 | 20 | 3 | 0 | 2 | 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.

**Unit II: Auxiliary Motions -I**

warp stop motion - mechanical warp stop motion and electrical warp stop motion, comparison of mechanical and electrical warp stop motion weft stop motion side weft fork motion and center weft fork motion, comparison of side and center weft fork motion, different types of temples used in loom.

**Unit III: Auxiliary Motion - II**

Warp protecting motion: loose-reed warp protecting motion and fast reed warp protecting motion, comparison of loose-reed and fast reed warp protecting motion, warp easing motion and its advantages.

**Unit IV: Automatic Looms**

Objectives and classification of automatic loom. Different types of mechanical weft feelers, e.g. side sweep and depth feelers, two prong electrical weft feelers & photo electrical weft feelers, shuttle protecting motion, Automatic pirn-changing mechanism.

**Unit V: Multiple Box Loom:**

Weft patterning and mixing, working principle of Eccles 4x1 multiple box loom (Cowburn& Peck), preparation of pattern card chain for 4x1 eccles box motion for different weft pattern.

**List of Practical** (At least 10 practical experiments to be performed by each student):

1. To study the working of Keighley double lift dobby.
2. To study the working of single lift single cylinder jacquard.
3. To study the working of double lift single cylinder jacquard.
4. To study the working of electrical warp stop motion.

| | | | |
|---|---|---|---|
| Chairperson Board of Studies Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore | Chairperson Faculty of Studies Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore | Controller of Examination Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore | Joint Registrar Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore |

# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
## Shri Vaishnav Institute of Textile Technology
## Choice Based Credit System (CBCS) in Light of NEP-2020
## Diploma in Textile Engineering
## (2021-2024)

| 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* | | | | |
| DTTX402 | DCS | FABRIC FORMATION TECHNOLOGY II | 60 | 20 | 20 | 30 | 20 | 3 | 0 | 2 | 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. To study the working of fast reed mechanism.
6. To study the working of side sweep weft feeler mechanism.
7. To study the working of shuttle protector mechanism.
8. To study the working of the pirn change mechanism.
9. To study the working of the side weft fork mechanism.
10. To study the working of warp easing motion mechanism.
11. To study the working of 4 x 1 Eccle's drop box motion.
12. To prepare the pattern card for given weft pattern in 4 x 1 Eccle's drop box motion.

**Text Books:**


1. Woven Fabric Production – II (1st Edition) by NCUTE Publication, 2002.
2. Weaving Machines, Mechanisms and Management by Talukdar M. K., Ajgaonkar D. B. and Sriramulu P. K.Mahajan Publishers Pvt Ltd, 2004
3. Weaving Vol. II by Bannerjee N. N., Textile Book House, 1982
4. Fancy Weaving by Aswani K. T., Mahajan Book Distributors, 1990
5. Principle of Weaving by Marks & Robinson, Textile Institute, 1976
6. Preparation & Weaving Machinery by Ormerod A., Butterworth-Heinemann, 1983.
7. Mechanism of Weaving by Fox, Macmillan, 1894.
8. Weaving Tech. & Operations by Ormerod A. and Sondheln W.S, TheTextile Institute, 1995.
9. Welcome to Weaving: The Modern Guide by Lindsey Campbell, Schiffer Publishing, Ltd.; 1st edition, 2019.


Chairperson
Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson
Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examination
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Joint Registrar
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

## Shri Vaishnav Institute of Textile Technology

## Choice Based Credit System (CBCS) in Light of NEP-2020

## Diploma in Textile Engineering

## (2021-2024)

| 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* | | | | |
| DTTX404 | DCS | Fibre and Yarn Testing | 60 | 20 | 20 | 30 | 20 | 3 | 0 | 2 | 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):**

1. Course will provide the knowledge about the classification of textile fibre.
2. Course will provide detail knowledge about the fibre and yarn testing methods.
3. Course will provide introductory knowledge about statistical analysis of tested sample.

**Course Outcomes (COs)**

Student will be able to

1. Students can perform basic fibre testing.
2. Student is able to test yarn count.
3. Students can analyze fibre properties.

**Syllabus:**

**Unit I: Introduction to Textile Testing and Statistical Methods**

Objectives of textile testing. Various sampling technique, data analysis by Mean, Mode, Median, Coefficient of Variation and Standard deviation .

**Fibre Testing:** Fibre length, plotting of Baer sorter diagram, Analysis of Baer sorter diagram, Analysis of Fibro graph to estimate uniformity ratio of fibre. Concept of span length. Fibre maturity, Fibre fineness, Fibre shape analysis with microscopic view. Trash analysis of cotton fibre.

**Unit II: Moisture Properties of Textiles**

Slandered atmospheric condition, Standard testing atmosphere, measurement of atmospheric conditions. Understand the working principle of wet and dry bulb hygrometer. Determination of moisture content and moisture regain of textile materials. Related terms & definitions about moisture content, moisture regain with respect to textiles.

| | | | |
|---|---|---|---|
| Chairperson<br>Board of Studies<br>Shri Vaishnav Vidyapeeth<br>Vishwavidyalaya, Indore | Chairperson<br>Faculty of Studies<br>Shri Vaishnav Vidyapeeth<br>Vishwavidyalaya, Indore | Controller of Examination<br>Shri Vaishnav Vidyapeeth<br>Vishwavidyalaya, Indore | Joint Registrar<br>Shri Vaishnav Vidyapeeth<br>Vishwavidyalaya, Indore |

# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
## Shri Vaishnav Institute of Textile Technology
## Choice Based Credit System (CBCS) in Light of NEP-2020
## Diploma in Textile Engineering
## (2021-2024)

| 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* | | | | |
| DTTX404 | DCS | Fibre and Yarn Testing | 60 | 20 | 20 | 30 | 20 | 3 | 0 | 2 | 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.

**Unit III: Physical Properties of Yarn**

Yarn twist and twist direction analysis by using untwisting method, twist contraction method and twist at break method. Tensile tester working principles CRE, CRL and CRT methods. Yarn strength testing, Estimation of yarn strength by lea strength tester and single yarn strength tester. Count strength product of yarn.

**Unit IV: Yarn Count and Twit Measurement**

Yarn numbering systems (Direct and Indirect). Measurement of yarn count, Hank of lap, Hank of Sliver and Hank of Roving. Twist and twist direction measurement in yarn, Estimation plied yarn twist by twist contraction method.

**Unit V: Yarn Evenness**

Yarn evenness .- Random and periodic variation, Short term, medium term and long term variation - Index of yarn irregularity. Methods of Assessing yarn evenness by yarn appearance board - Principle and study of Uster Evenness Tester and Uster classimate faults.

**List of Practical (Expand it if needed):**

1. To study of dry and wet bulb hygrometer.
2. To estimate and calculate atmospheric condition of testing lab.
3. To determine of fibre length using Baer Sorter.
4. To determine of trash content by Trash Analyzer.
5. To determine of moisture content and moisture regain of cotton fibre by hot air oven.
6. To determine of hank of Sliver/ Roving by using wrap block.

| | | | |
|---|---|---|---|
| Chairperson<br>Board of Studies<br>Shri Vaishnav Vidyapeeth<br>Vishwavidyalaya, Indore. | Chairperson<br>Faculty of Studies<br>Shri Vaishnav Vidyapeeth<br>Vishwavidyalaya, Indore | Controller of Examination<br>Shri Vaishnav Vidyapeeth<br>Vishwavidyalaya, Indore | Joint Registrar<br>Shri Vaishnav Vidyapeeth<br>Vishwavidyalaya, Indore |

# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

## Shri Vaishnav Institute of Textile Technology

## Choice Based Credit System (CBCS) in Light of NEP-2020

## Diploma in Textile Engineering

## (2021-2024)

| 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* | | | | |
| DTTX404 | DCS | Fibre and Yarn Testing | 60 | 20 | 20 | 30 | 20 | 3 | 0 | 2 | 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.

7. To determine of count of yarn by using wrap reel.
8. To determine of single yarn twist by using twist tester.
9. To determine of ply yarn twist by using twist contraction method.
10. To determine of single yarn strength by using yarn tensile tester.
11. To determine Lea strength and CSP of yarn sample.

**Text Books:**


1. Principles of Textile Testing– J. E. Booth, Butterworth Scientific publication, London,1982.
2. Hand Book of Textile Testing and Quality Control, E.B. Groover and D.S. Hamby
3. Textile Testing (4th revised edition) - P. Angappan & R.Gopalakrishnan,1997
4. A Practical Guide to Textile Testing – K. Amutha, Woodhead Publishing India Pvt. Ltd., 2016.


Chairperson
Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson
Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examination
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Joint Registrar
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

## Shri Vaishnav Institute of Textile Technology
## Diploma in Textile Engineering (2024-2027)

| SUBJECT CODE | CATEGORY | SUBJECT 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* | | | | |
| DTTX406 | DCC | Introduction to Manmade Fibres | 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 Educational Objectives (CEOs):**

1. To impart knowledge about the principle and manufacturing process of regular and high performance manmade fibres.
2. To understand the optical, Electrical and Thermal properties of different synthetic fibres.

**Course Outcomes (COs):**

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

1. Describe the manufacturing process of high manmade fibre –regular and performance fibers such as glass, carbon, hollow fiber, etc.
2. Explain texturing process for synthetic fiber and different methods of texturizing.
3. Explain optical behavior of the fibres.
4. Explain electrical and frictional behavior of the fibres.
5. Explain thermal behavior of the fibres.

## Syllabus

**Unit-I Introduction to Man-made Fibres** **9h**

Chairperson
Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson
Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examination
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Joint Registrar
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

## Shri Vaishnav Institute of Textile Technology
## Diploma in Textile Engineering (2024-2027)

| SUBJECT CODE | CATEGORY | SUBJECT 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* | | | | |
| DTTX406 | DCC | Introduction to Manmade Fibres | 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.

Manufacturing Process of ViscoseRayon, Nylon, Polyster, Acrylic Poly-Olefin, and PLA fibres. Their physical properties, chemical properties. Dyeing behaviors, Dope dyeing ad their application.

**Unit-II Introduction to New Fibres** **9h**

New Fibres Glass, Carbon, Aramid, Spandex, Spectra, Nano fibres and Teflon etc. Basic concept of bi-component, hollow and tri-lobal fibres, High speed extrusion, Tow conversion process.

**Unit-III Introduction to Texturizing** **9h**

Texturizing - Importance, basic principle & heat setting. Introduction to different major texturizing methods: false twisting, stuffer box, edge crimping, knit-de-knit, gear crimping air-jet texturizing. Importance of POY, MOY, FDY and DTY yarn in texturising.

**Unit-IV Electrical and Frictional properties of Fibres** **9h**

Importance of Electrical properties of fibre – dielectric properties, electrical resistance and, static electricity. Importance of Frictional properties of fibres.

Chairperson
Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson
Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examination
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Joint Registrar
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

## Shri Vaishnav Institute of Textile Technology
## Diploma in Textile Engineering (2024-2027)

| SUBJECT CODE | CATEGORY | SUBJECT 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* | | | | |
| DTTX406 | DCC | Introduction to Manmade Fibres | 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-V Optical and Thermal properties of Fibres** **9h**

Importance of Optical properties of fibre - refraction, Birefringence, absorption, dichroism, reflection and luster orientation, specific index of birefringence and its measurement. Different thermal properties of fibres.

**Text Books:**


1. Physical Properties of Textile Fibres, Hearle, J. W. S., Morton, W. E., Wood Head Publishing, 2008
2. Textile Science: An Explanation of Fibre Properties, Gohl, E. P. G., Vilensky, L. D., CBS Publisher, Edition 2, 2005.
3. Manufactured Fibre Technology, Gupta, V.B., Kothari, V.K., Springer, 1997.


**References:**


1. The Chemistry of Textile Fibres, Mather, R. R., Wardman, R. H., Royal Society of Chemistry, 2015.
2. Handbook of Textile Fibre Structure, Eichhorn, S., Hearle, J. W.S., Kikutani, T., Jaffe. M., ELSEVIER, Vol. 1, 2009.
3. Production of Synthetic Fibres, Vaidya, A. A., Prentice Hall of India, Private Limited, New Delhi, 1998.


Chairperson
Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson
Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examination
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Joint Registrar
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

## Shri Vaishnav Institute of Textile Technology
## Diploma in Textile Engineering (2024-2027)

| SUBJECT CODE | CATEGORY | SUBJECT 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* | | | | |
| DTTX406 | DCC | *Introduction to* Manmade Fibres | 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.

4. Manmade Fibers, Moncrief, R.W., Halstead Press, New York, 1975.