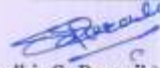# University of Mumbai

No. AAMS (UG) / 147 of 2021

CIRCULAR:-

Attention of the Principals of the Affiliated Colleges and Directors of the recognized Institutions in Faculty of Science and Technology.

They are hereby informed that the recommendations made by the Ad-hoc Board of Studies in **Home Science** at its meeting held on 20th March, 2021 **vide** item No. 1(vi) and subsequently passed by the Board of Deans at its meeting held on 11th June, 2021 **vide** item No. **8.7** have been accepted by the Academic Council at its meeting held on 29th June, 2021, **vide** item No. **8.7** and subsequently approved by the Management Council at its meeting held on 29th July, 2021 **vide** item No. **16** and that in accordance therewith, in exercise of the powers conferred upon the Management Council under Section 74(4) of the Maharashtra Public Universities Act, 2016 (Mah. Act No. VI of 2017) the Ordinance **6685 & 6686** Regulations **9428 & 9429** and the syllabus of **Add-On Online & Offline Diploma Course in CAD, CAM and Computer Technologies in the Textile and Apparel Industry – Intermediate** has been introduced and the same have been brought into force with effect from the academic year **2022-23**, accordingly. (The same is available on the University's website www.mu.ac.in).

MUMBAI – 400 032
25th October, 2021
To,

(Sudhir S. Puranik)
REGISTRAR

The Principals of the Affiliated Colleges and Directors of the recognized Institutions in Faculty of Science and Technology. (Circular No. UG/334 of 2017-18 dated 9th January, 2018.)

A.C/8.7/29/06/2021
M.C/16/29/07/2021

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No. AAMS (UG) /147 A of 2021   MUMBAI-400 032   25th October, 2021

Copy forwarded with Compliments for information to:-

1) The Chairman, Board of Deans
2) The Dean Faculty of Science and Technology,
3) The Chairman, Ad-hoc Board of Studies in Home Science,
4) The Director, Board of Examinations and Evaluation,
5) The Director, Board of Students Development,
6) The Co-ordinator, University Computerization Centre,

(Sudhir S. Puranik)
REGISTRAR

Copy to :-

1. The Deputy Registrar, Academic Authorities Meetings and Services (AAMS),
2. The Deputy Registrar, College Affiliations & Development Department (CAD),
3. The Deputy Registrar, (Admissions, Enrolment, Eligibility and Migration Department (AEM),
4. The Deputy Registrar, Research Administration & Promotion Cell (RAPC),
5. The Deputy Registrar, Executive Authorities Section (EA),
6. The Deputy Registrar, PRO, Fort, (Publication Section),
7. The Deputy Registrar, (Special Cell),
8. The Deputy Registrar, Fort/ Vidyanagari Administration Department (FAD) (VAD), Record Section,
9. The Director, Institute of Distance and Open Learning (IDOL Admin), Vidyanagari,

They are requested to treat this as action taken report on the concerned resolution adopted by the Academic Council referred to in the above circular and that on separate Action Taken Report will be sent in this connection.

1. P.A to Hon'ble Vice-Chancellor,
2. P.A Pro-Vice-Chancellor,
3. P.A to Registrar,
4. All Deans of all Faculties,
5. P.A to Finance & Account Officers, (F.& A.O),
6. P.A to Director, Board of Examinations and Evaluation,
7. P.A to Director, Innovation, Incubation and Linkages,
8. P.A to Director, Board of Lifelong Learning and Extension (BLLE),
9. The Director, Dept. of Information and Communication Technology (DICT) (CCF & UCC), Vidyanagari,
10. The Director of Board of Student Development,
11. The Director, Department of Students Walfare (DSD),
12. All Deputy Registrar, Examination House,
13. The Deputy Registrars, Finance & Accounts Section,
14. The Assistant Registrar, Administrative sub-Campus Thane,
15. The Assistant Registrar, School of Engg. & Applied Sciences, Kalyan,
16. The Assistant Registrar, Ratnagiri sub-centre, Ratnagiri,
17. The Assistant Registrar, Constituent Colleges Unit,
18. BUCTU,
19. The Receptionist,
20. The Telephone Operator,
21. The Secretary MUASA

for information.

New ordinances 6685 & 6686 relating to the Add – On Online & Offline Diploma Course in CAD, CAM and Computer Technologies in the Textile and Apparel Industry – Intermediate.

1. Necessity for starting these course:.

This course is created to develop professionals with expertise in CAD and CAM in the Apparel Industry to cater to the ever-increasing need of the fashion and apparel industry. It will help to equip students with theoretical knowledge and impart practical training. Thus, enabling the students to acquire additional applied skills while pursuing the fulltime programme / occupation.

a. To facilitate new skill development amongst students as per changing needs of the industry for placements and internships.

b. To facilitate students to take up interdisciplinary courses based on their interests and aptitude.

Specific Objectives of the course:

i. To introduce a career oriented and skill enhancing course on CAD, CAM and Computer Technologies in the Apparel Industry
ii. To impart knowledge regarding importance of CAD, CAM and Computer Technologies in the Apparel Industry
iii. To enable the students develop entrepreneurial abilities in the field of fashion and apparel.
iv. To gain knowledge about use computer in textile apparel designing.
v. To observe and understand the designing of textile apparel through computers.

2. Whether UGC has recommended to start the said course?

A. Yes. UGC has recommended skill based/vocational/technical courses.

3. Whether all the courses have commenced from the academic year 2019-20

A, We plan to commence the courses from academic year 2022 - 23

4. The courses started by the University are self financed, whether adequate number of eligible permanent Faculties are available?

A. The courses are self financed. Adequate permanent faculties are available to facilitate the running of the courses.

5. To give details regarding duration of the course and is it possible to compress the course

A. It is possible to complete the courses during the academic year. It is not possible to further compress the courses.

6. The intake capacity of each course and number of admissions given in the current academic year 2019-20

A. Maximum 30 students in a batch

7. Opportunities of Employability/Employment available after taking these courses.

A. Many new opportunities are available after the courses

UNIVERSITY OF MUMBAI

ADD – ON ONLINE & OFFLINE DIPLOMA COURSE IN CAD, CAM AND COMPUTER TECHNOLOGIES IN THE TEXTILE AND APPAREL INDUSTRY- INTERMEDIATE

(to be introduced with effect from the academic year 2022-23)

UNIVERSITY OF MUMBAI

Syllabus for Approval

Sr. No.	Heading	Particulars
1	Title of the Course **O. 6685**	**ADD – ON ONLINE & OFFLINE DIPLOMA COURSE IN CAD, CAM AND COMPUTER TECHNOLOGIES IN THE TEXTILE AND APPAREL INDUSTRY- INTERMEDIATE**
2	Eligibility for Admission **O. 6686**	Graduates from any Field of Education
3	Passing Marks **R - 9428**	120
4	Ordinances / Regulations (if any)	
5	No. of Years / Semesters **R - 9429**	2 Semesters (1 year)
6	Level	~~P.G. / U.G./~~ Diploma / ~~Certificate~~ (**Strike out which is not applicable**)
7	Pattern	~~Yearly~~ / Semester (**Strike out which is not applicable**)
8	Status	New / ~~Revised~~ (**Strike out which is not applicable**)
9	To be implemented from Academic Year	From Academic Year _2021-22

Name & Signature of BOS Chairperson :   **Dr. (Mrs.) Geeta Ibrahim**

Name & Signature of Dean: _____

ADD – ON ONLINE & OFFLINE DIPLOMA COURSE IN CAD, CAM AND COMPUTER TECHNOLOGIES IN THE TEXTILE AND APPAREL INDUSTRY- INTERMEDIATE

Type of Course- Add-on One-year Diploma Course

Duration of Course: 72 hours of theory and practical.

24 hours for self - work for gaining hands on experience through projects/internship

Mode of instruction: Offline and online

Experts will be called from outside and linkages and networks will be tapped for inviting resource persons involving participant learning

Vision: To develop professionals with expertise in CAD and CAM in the Apparel Industry to cater to the ever-increasing need of the fashion and apparel industry.

Mission: To equip students with theoretical knowledge and impart practical training as envisaged in the vision. Thus, enabling the students to acquire additional applied skills while pursuing the fulltime programme / occupation.

Objectives:

i.   To understand importance of CAD, CAM and Computer Technologies in the textile and apparel industry
ii. To gain knowledge and skills of using computer software in textile and apparel designing

Eligibility:

- Graduate from any field.
- Pre-requisite: CAD, CAM and Computer Technologies in the Textile and Apparel Industry Basic Course or its equivalence.
- It is mandatory for the M.Sc. I students of Textile and Fashion Technology to complete the one-year Diploma in CAD, CAM and Computer Technologies in the Textile and Apparel Industry- Intermediate (as indicated in the syllabus of the regular M.Sc. Home Science Branch III Textile and Fashion Technology Course)

Intake capacity: Minimum 09 students per batch

Credits: 9 credits

Fees for the course: Rs. 7,000/- (+ GST applicable) per student

Honorarium: Rs. 750/- per hour for Practical and Rs. 500/- for Theory

Coordinator fees for academic year/course: Rs. 5,000/- entire course

Preamble to the Course

Textile and apparel industry are moving towards automation and computer aided designing and manufacturing has taken prime importance in this aspect. Therefore, knowledge and skills of CAD/CAM in the field of textile and apparel industry has become a need for the students pursuing their degree in this field. This course aims to develop professional with expertise in CAD and CAM in the textile and apparel industry to cater to the ever-increasing need of the fashion and apparel industry. It will equip students with theoretical knowledge and impart practical training thus enabling the students to acquire additional applied skills while pursuing the fulltime programme / occupation.

SEMESTER I

Title	Internal Assessment Marks	Semester End Examination	Total Marks	Total Hours	Credits
CAD CAM and Computer Technologies in Textile & Apparel Marketing Sectors (Theory)- I	40	60	100	24	3
Computer Technologies in Textile and Apparel Sectors (Practical)- I	40	60	100	24	3
Computer Technologies in Textile and Apparel Marketing Sectors (Practical)- II	40	60	100	24	3

Title of the Course	Total Hours	Marks allotted	Credits for the Course
CAD CAM and Computer Technologies in Textile & Apparel Marketing Sectors (Theory)- I	**24**	**100**	**3**

Objectives:
1. To introduce computer technologies used in marketing of textile, woven and knitted fabrics and / visits to industries / organizations.
2. To introduce computer technologies used in retail and other sectors of apparel industry using software and / visits to industries/organizations.

Unit	Course Content	Hours
I	• Application of computers in textile industry-woven and knitted textiles and printing textile industry • Terminologies used	08

	• Raster and vectors • Converting vector to raster	

II	• Computers in apparel designing and production
	• Garment designing -3D forms
	  o Computer technology used in garment assembly
	  o Programmable sewing machines
	• Introduction to Photoshop
	• Creating motifs
	• Importing motifs
	• Repeat prints in Photoshop
		08

III	• Computer technologies and E- Commerce for textile sectors • Recent developments in computer technology for E-commerce in retail sector	08

Learners to make presentations/assignments on selected topics which will be marked

References:

- Beazley, A, Bond, T. (2003), Computer aided pattern design and product development, Black Wele, Amazon.
- Campbell, H. (2003), Designing patterns a fresh approach to pattern cutting, Stanley Thornes (Publishers) Ltd, United Kingdom.
- Carr H. & Latham B. (2004), The technology of clothing manufacture, Black Well, Berlin.
- Carr H. & Latham B. (2004), The technology of clothing manufacture, Black Well, Berlin.
- Colussey, K. M. (2000), Fashion design on computers, N.J. Prentice Hall Upper Saddle river.
- Cooklin, G. (2000), Pattern grading for men's clothes – The technology of design, best set Typesetter Ltd, Great Britain.
- Gokarneshan, N. (2005), Fabric structure and design, New age international publishers, New Delhi.
- Natalie Bray (2000), Dress Pattern designing- The Basic Principles of cut and fit, Gopsons Paper Ltd, Noida.
- Lectra, Gerber, Photoshop, CorelDRAW and other software Manuals
- RichPeace Manual

Title of the Course	Total Hours	Marks allotted	Credits for the Course
Computer Technologies in Textile and Apparel Sectors (Practical)- I	24	100	3

Objectives:
1. To introduce computer technologies used in textile, woven and knitted fabrics and / visits to industries / organizations.
2. To introduce computer technologies used in retail and other sectors of apparel industry using software and / visits to industries/organizations

Unit	Course Content	Hours
I	• Software of textile woven and knitted fabrics • Software for apparel designing and production • Pattern making and drafting using design software	08
II	• Pattern making and drafting using design software • Uses and advantages of marker	08
III	• Working with marker • Setting up the marker • Importing patterns • Layout plan • Efficiency • Auto layout v/s manual layout	08

Learners to make presentations/assignments on selected topics which will be marked

- Visit to computerized quality control units
- Visit to textile industries and craft centres
- Visit to a fashion and apparel industry
- Internship in design house and apparel

References:
- Beazley, A, Bond, T. (2003), Computer aided pattern design and product development, Black Wele, Amazon.
- Campbell, H. (2003), Designing patterns a fresh approach to pattern cutting, Stanley Thorues (Publishers) Ltd, United Kingdom.
- Carr H. & Latham B. (2004), The technology of clothing manufacture, Black Well, Berlin.
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- Cooklin, G. (2000), Pattern grading for men's clothes – The technology of design, best set Typesetter Ltd, Great Britain.
- Gokarneshan N. (2005), Fabric structure and design, New age International Publishers, New Delhi.
- Natalie Bray (2000), Dress Pattern Designing- The Basic Principles of cut and fit, Gopsons Paper Ltd, Noida.
- Lectra, Gerber, Photoshop, CorelDRAW and other software Manuals
- RichPeace Manual

Title of the Course	Total Hours	Marks allotted	Credits for the Course
Computer Technologies in Textile and Apparel Marketing Sectors (Practical)- II	24	100	3

Objectives
1. To introduce computer technologies used in marketing of textile, woven and knitted fabrics and / visits to industries / organizations.
2. To introduce computer technologies used in retail and other sectors of apparel industry using software and / visits to industries/organizations

Unit	Course Content	Lectures
I	• Software for marketing of textile woven and knitted fabrics • Raster and vectors • Introduction to image editing software • Creating motifs • Converting vector to raster • Importing motifs	08
II	• Software for marketing apparel - Basics • Repeat prints in image editing software • Halftone prints • Working with color modes • Working with layer and layer components	08
III	• Software and computer technologies used in marketing in the retail sector • Channels • Dressing • Working with illustrations • Working with brushes	08

Learners to make portfolios/assignments on selected topics which will be marked

- Visit to computerized quality control units
- Visit to textile industries and craft centres
- Visit to a fashion and apparel industry
- Internship in design house and apparel

References:
- Beazley, A, Bond, T. (2003), Computer aided pattern design and product development, Black Wele, Amazon.
- Campbell, H. (2003), Designing patterns a Fresh approach to pattern cutting, Stanley Thorues (Publishers) Ltd, United Kingdom.
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- Lectra, Gerber, Photoshop, CorelDRAW and other software Manuals
- RichPeace Manual

SEMESTER II

Title	Internal Assessment Marks	Semester End Examination	Total Marks	Total Hours	Credits
CAD CAM and Computer Technologies in Textile & Apparel Marketing Sectors (Theory)- II	40	60	100	24	3
Computer Technologies in Textile and Apparel Marketing Sectors (Practical)- III	40	60	100	24	3
Computer Technologies in Textile and Apparel Marketing Sectors (Practical)- IV	40	60	100	24	3

Title of the Course	Total Hours	Marks allotted	Credits for the Course
CAD CAM and Computer Technologies in Textile & Apparel Marketing Sectors (Theory)- II	24	100	3

Objectives
1. To introduce computer technologies used in textile industry.
2. To introduce computer technologies used in apparel industry.

Unit	Course Content	Hours
I	Recent developments in CAD CAM Future Trend Forecast of CAD in Textile Sectors Understanding Video Video Formats and playback speeds Introduction to Movie Maker	08

	Understanding Audio	
II	Recent developments in CAD CAM for 3D in apparel sector Sourcing of various software used in these apparel sector Future trend forecast of CAD in these apparel sector Different movie outputs	08
III	E- Commerce for textile sectors	08

Learners to make presentations/assignments on selected topics which will be marked

References:

- Beazley, A, Bond, T. (2003), Computer aided pattern design and product development, Black Wele, Amazon.
- Campbell, H. (2003), Designing patterns a Fresh approach to pattern cutting, Stanley Thornes (Publishers) Ltd, United Kingdom.
- Carr H. & Latham B. (2004), The technology of clothing manufacture, Black Well, Berlin.
- Carr H. & Latham B. (2004), The technology of clothing manufacture, Black Well, Berlin.
- Colussey, K. M. (2000), Fashion design on computers, N.J. Prentice Hall Upper Saddle river.
- Cooklin, G. (2000), Pattern grading for men's clothes – The technology of design, best set Typesetter Ltd, Great Britain.
- Gokarneshan N. (2005), Fabric structure & design, New age international publishers, New Delhi.
- Natalie Bray (2000), Dress pattern designing- The basic principles of cut and fit, Gopsons Paper Ltd, Noida.
- Lectra, Gerber, Photoshop, CorelDRAW and other software Manuals
- RichPeace Manual

Title of the Course	Total Hours	Marks allotted	Credits for the Course
Computer Technologies in Textile and Apparel Marketing Sectors (Practical)- III	24	100	3

Objectives
1. To introduce computer technologies used in textile industry.
2. To introduce computer technologies used in apparel industry.

Unit	Course Content	Hours
I	- Software for Fashion Design - Draping and dress designing using fashion design software - Dress designing for women's outerwear - Future Trend forecast of CAD for Fashion Design	08
II	- Accessory design and making complete ensemble - Presentation on Ramp - Designing and presentation of window display	08

Unit	Course Content	Hours
	• Portfolio presentation • Understanding Video • Video Formats and playback speeds	
III	Introduction to Movie Maker	08

Learners to make portfolios/assignments of all practical work done which will be marked.

- Visit to computerized quality control units
- Visit to textile industries and craft centres
- Visit to a fashion and apparel industry
- Internship in design house and apparel

References:
- Beazley, A, Bond, T. (2003), Computer aided pattern design and product development, Black Wele, Amazon.
- Campbell, H. (2003), Designing patterns a Fresh approach to pattern cutting, Stanley Thorues (Publishers) Ltd, United Kingdom.
- Carr H. & Latham B. (2004), The technology of clothing manufacture, Black Well, Berlin.
- Carr H. & Latham B. (2004), The technology of clothing manufacture, Black Well, Berlin.
- Colussey, K. M. (2000), Fashion design on computers, N.J. Prentice Hall Upper Saddle river.
- Cooklin, G. (2000), Pattern grading for men's clothes – The technology of design, best set Typesetter Ltd, Great Britain.
- Gokarneshan N. (2005), Fabric structure & design, New age international publishers, New Delhi.
- Natalie Bray (2000), Dress Pattern Designing- The Basic Principles of cut and fit, Gopsons Paper Ltd, Noida.
- Lectra, Gerber, Photoshop, CorelDRAW and other software Manuals
- RichPeace Manual

Title of the Course	Total Hours	Marks allotted	Credits for the Course
Computer Technologies in Textile and Apparel Marketing Sectors (Practical)- IV	24	100	3

Objectives
1. To understand video making software to be able to use in textile, apparel and fashion industry.
2. To understand video editing software to be able to use in textile, apparel and fashion industry.

Unit	Course Content	Hours

I	• Software for Marketing of Textile Printed, Dyed & Embroidered • Movie outputs for marketing on social media. eg. YouTube, Instagram etc. • Understanding Audio • Working with sound waves • Converting images to video • Creating Titles and captions	08	
II	• Recording Narration • Video Editing • Sound Editing • Background Sound	08	
III	• Over view of professional video editing • Different movie outputs • Finalising movie	08	

Learners to make portfolios/assignments of all practical work done which will be marked
- Visit to computerized quality control units
- Visit to textile industries and craft centres
- Visit to a fashion and apparel industry
- Internship in design house and apparel

References:
- Beazley, A, Bond, T. (2003), Computer aided pattern design and product development, Black Wele, Amazon.
- Campbell, H. (2003), Designing patterns a Fresh approach to pattern cutting, Stanley Thorues (Publishers) Ltd, United Kingdom.
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- Lectra, Gerber, Photoshop, CorelDRAW and other software Manuals
- RichPeace Manual

Mode of assessment & evaluation for the course:
- Regular internal assignments and project work will be given by the concerned faculty and will have 40% weightage. It may include assignments, class tests, case studies or project work.
- The term end examination shall have 60% weightage and will be conducted by the concerned faculty.