R. C. Patel Educational Trust's
R. C. Patel Arts, Commerce and Science College
Shirpur-425405, Karvand Naka, Dist.- Dhule (Maharashtra)
E-mail - principal@rcpasc.ac.in

Affiliated to: K. B. C. North Maharashtra University, Jalgaon-425001

Self Study Report (SSR): 2024 (4th Cycle)

Criteria - 1
Curricular Aspects

Key Indicator – 1.2
Academic Flexibility

Metric No. – 1.2.1 (QnM)

Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. where the students of the institution have enrolled and successfully completed during the last five years)

Submitted to
National Assessment and Accreditation Council, Bangalore

R. C. Patel Educational Trust's
R. C. Patel Arts, Commerce and Science College
Karvand Naka, Shirpur 425405, Dist - Dhule, Maharashtra
☎: (02563) 299328
E-mail: principal@rcpasc.ac.in

President
Hon. Bhupeshbhai Patel

Principal
Dr. D. R. Patil

Date: 15/06/2024

Declaration

This is to declare that, the information, reports, true copies of the supporting documents, numerical data etc. submitted in these files is verified by Internal Quality Assurance Cell (IQAC) and it is correct as per the office record.

This declaration is for the purpose of NAAC accreditation of the HEI for the 4th cycle assessment period 2018-19 to 2022-23.

Place: Shirpur

Date: 15/06/2024

Dr. Sandip P. Patil
IQAC Co-ordinator
IQAC Coordinator
R. C. Patel Educational Trust's
R. C. Patel Arts, Commerce and Science College
Shirpur, Dist.-Dhule (M.S.) 425405

R. C. Patel Arts, Commerce and Science College Shirpur ★ R. C. Patel Educational Trust's

Dr. D. R. Patil
IQAC Chairman & Principal
PRINCIPAL
R. C. Patel Educational Trust's
R. C. Patel Arts, Commerce and Science College
Shirpur, Dist.-Dhule (M.S.) 425405

R.C. Patel Arts, Commerce and Science College, Shirpur

Certificate Course Syllabus, Attendance, Mark sheet and Sample Certificate

INDEX

College Name : **R.C.Patel Arts, Commerce & Science College, Shirpur**

Title of the Course : **Certificate Course in textile Chemistry**

Aims/objectives of the Course : **To aware the students about Textile chemistry, their applications & career in textile industries.**

Duration of Course : **1 Year**

Fees structure : **1000/**

Course structure : **Paper-I- Applied Chemistry for Textile Industries**

Paper-II- Applied Chemistry of dyes & Auxiliaries

Paper-III- Lab Course

Eligibility for admission : **Diploma course in Textile chemistry**

Skeleton of Course :

Sr. No.	Paper	Name of the subject	Theory/ Practical Course	Teaching Hrs	Max. Marks Allotted			Passing			Credit
					External	Internal	Total	External	Internal	Total	
1	Paper-I	Applied Chemistry for Textile Industries	Theory	90	60	40	100	24	16	40	6
2	Paper-II	Applied Chemistry of dyes & Auxiliaries	Theory	90	60	40	100	24	16	40	6
3	Paper-III	Lab course	Practical	120	60	40	100	24	16	40	6

Minimum Staff : **03**

Mode of examination : **Internal & External (Theory & Practical)**

Details of Syllabus : **Enclose the syllabus copy**

List of Admitted Students for **"Certificate Course in Textile Chemistry"**

For the Academic Year 2021 -22

Name of College: R. C. P. A.C. S. College, Shirpur
Name of Career Oriented Course: Certificate Course in Textile Chemistry
Academic Year: 2021-2022
Intake Capacity: 60

Sr. No.	Name of Student	Gender	Category	Education Qualification	Year of passing	Presently admitted	Remark (if any)
1.	Bhosale Pawan Bhika	Male	OPEN	XII Science	2021	F. Y. B. Sc.	
2.	Dhangar Shubham Hilal	Male	NT	XII Science	2021	M.Sc.-I	
3.	Jadhav Nilesh Kaniram	Male	VJ-NT	XII Science	2021	F. Y. B. Sc.	
4.	Patil Mahesh Aanandarao	Male	OBC	XII Science	2021	F. Y. B. Sc.	
5.	Bhamare Sanjana Jitendra	Female	OBC	XII Science	2021	F. Y. B. Sc.	
6.	Suryaawanshi Pravin Kishor	Male	OBC	XII Science	2021	F. Y. B. Sc.	
7.	Mande Esha Ashok	Female	SC	XII Science	2021	F. Y. B. Sc.	
8.	Mahajan Archana Mahendra	Female	OBC	XII Science	2021	F. Y. B. Sc.	

Certificate

This is to certify that the document regarding educational qualifications of the above students have been verified and found correct. The students mentioned in the list are eligible for the admission to the above mentioned course as per University Ordinance-181.

Co-ordinator
Mrs. Rajashri B. Chaudhari

Principal
Dr. D. R. Patil

R. C. Patel. A. C. S. College, Shirpur

Certificate Course in Textile Chemistry 2021-22

Attendance shit CTC - 101

Sr. No.	Name of Students	11/1/22	21/1/22	21/1/22	8/1/22	9/1/22	9/1/22	15/1/22	16/1/22	16/1/22	22/1/22	23/1/22	23/1/22	29/1/22	30/1/22	30/1/22	5/2/22	6/2/22	6/2/22	12/2/22	13/2/22	13/2/22	19/2/22	20/2/22	20/2/22	26/2/22	27/2/22	27/2/22	5/3/22	6/3/22	6/3/22
1.	Bhosale Pawan Bhika	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	A	P	P	P	P	A	P	P	P
2.	Dhangar Shubham Hilal	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	A	P	P
3.	Jadhav Nilesh Kaniram	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
4.	Patil Mahesh Aanandarao	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	A	P	P	P
5.	Bhamare Sanjana Jitendra	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P
6.	Suryaawanshi Pravin Kishor	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P		P	P	P	P
7.	Mande Esha Ashok	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
8.	Mahajan Archana Mahendra	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P

R.C.Patel Arts, Comm. & Sci. College Shirpur Dist. Dhule

Mrs. Rajashri B. Shah.

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce & Science College, Shirpur

(Affiliated to the K.B.C. North Maharashtra University, Jalgaon)

STATEMENT OF MARKS

Certificate course in Textile Chemistry

Examination Held in May-2022

Student Name: **Bhamre Sanjana Jitendra**

College Name: **R.C.Patel Arts Commerce and Science College, Shirpur**

Seat Number: **CTC-05**

Paper Code	Paper Name	AM	Credit (Max.)	Marks Obtained
CTC- 101	Applied chemistry for textile industries	TH	6	96
CTC -102	Applied chemistry of dyes and Auxiliaries	TH	6	94
CTC-103	Lab Course	PR	8	93

Result: **Pass** CGPA: **6.45** Grade: **O**

R.C.PATEL ARTS,COMM.AND SCI.COLLEGE SHIRPUR

Co-ordinator

Abbreviations:

AM: Assessment Methods, **P:** Pass, **F:** Fail, **AB:** Absent, **RR:** Result Reserved, **TH:** Theory, **PR:** Practical, **O:** Outstanding Grade

R. C. Patel Art's, Commerce & science College, Shirpur

DTC- 102- Chemistry of Fibres in Textile Industries

Paper- II THEORY Contact Hrs- 90

1. **Fibres:** **(15 Hrs)**
   Introduction, Classification, Characteristics of Fibres
2. **Fundamentals of Fibre Spinning-** **(20 Hrs)**
   General principles of the spinning process, Theory of solidification of polymer in various spinning techniques. Concept of melt spinning, general features and essential requirements of melt spinning.
3. **Polyester fibres:** **(20 Hrs)**
   Raw materials, manufacturing process, physical and chemical properties and end uses of polyester.
4. **Ployamide fibre:** **(20 Hrs)**
   Raw materials, manufacturing process, physical and chemical properties and end uses of Nylon-6 and Nylon-66.
5. **Commercial and rural importance of Natural fibres:** **(15 Hrs)**
   Cotton, wool, silk, ramie, jute, linen, pineapple, Natural Bamboo fibers, their occurrence, properties and uses.

TEXT/REFERENCE BOOKS:

1. Textile Fibres, Shenai V.A., Vol-1, Sevak Publications, Bombay, 3rd edition, 1991.
2. Textbook of chemistry for PUC (Vol- I & II)
3. Dyeing & chemical technology of Textile fibres- E. R. Trotman
4. Microscopy of Textile Fibres, Greaves, P.H., Saville B.P.Oxford: BIOS Scientific Publishers Ltd., 1995.
5. Handbook of Fibre Chemistry, Lewin Menachem, Eli M. Pearce, Marcel Dekker Inc., New York, 2nd edition, 1998.
6. Analysis of Chemicals- N. F. Desai.

For office use only

Application for the course – DTC Acad. Year: 2021-22

R. C. Patel Educational Trust's

R.C. Patel Arts, Commerce and Science College

Shirpur, Dist – Dhule, M.S. 425 405

(NAAC Accredited Institute)

R.C.P.E.T.

To,
The Principal
R. C. Patel Arts, Commerce and Science College,
Shirpur

Sir,

I wish to get admitted to as a student for the Diploma Course in Textile Chemistry

Patil
(Name and Signature of Candidate)

PARTICULARS OF CANDIDATE

1. Name in full (Surname first) : Patel (Surname) Durgesh (Name) Lokesh (Father's/Husband's Name)
2. Address for correspondence : At post Khorde (Bk) Tal. Shirpur Dist. Dhule
3. Email Id : dipatel2002@gmail.com.
4. Ph.No./Mobile No. : 7798470960
5. Father's/Husband's name with address : Patel Lokesh Kalu
6. Sex (Male/Female) : Male
7. Nationality : Indian
8. Date of birth (dd/mm/yyyy) : 26108/2002
9. Put the tick (✓) mark(s) in the appropriate box(es) applicable in your case.

SC	ST	DT	NT-1	NT-2	NT-3	SBC	OBC	OPEN	P.H.	D.S.P
							✓			

P.H. : Physically handicapped ; D.S.P. : Ward of Defense Service Person

List of Admitted Students for **"Diploma Course in Textile Chemistry"**

For the Academic Year 2021 -22

Name of College: R. C. P. A.C. S. College, Shirpur
Name of Career Oriented Course: Diploma Course in Textile Chemistry
Academic Year: 2021-2022
Intake Capacity: 60

Sr. No.	Name of Student	Gender	Category	Education Qualification	Year of passing	Presently admitted	Remark (if any)
1.	Chaudhari Ronak Pravin	Male	OBC	CTC*	2021	S. Y. B. Sc.	
2.	Deore Harshdip Bhagwan	Male	OBC	CTC*	2021	S. Y. B. Sc.	
3.	Gujar Raj Sunil	Male	OBC	CTC*	2021	S. Y. B. Sc.	
4.	Koli Devyani Raju	Female	SBC	CTC*	2021	S. Y. B. Sc.	
5.	Patel Durgesh Lokesh	Male	OBC	CTC*	2021	S. Y. B. Sc.	
6.	Patil Mayur Amol	Male	OBC	CTC*	2021	S. Y. B. Sc.	

*CTC = Certificate course in Textile Chemistry

Certificate

This is to certify that the document regarding educational qualifications of the above students have been verified and found correct. The students mentioned in the list are eligible for the admission to the above mentioned course as per University Ordinance-181.

Co-ordinator
Mr. Jayvant P. Sonawane

Principal
Dr. D. R. Patil

DTC-102

R. C. Patel. A. C. S. College, Shirpur
Diploma Course in Textile Chemistry 2021-2022
Attendance shit

Sr.No.	Name of Students	23/9/21	5/10/21	5/10/21	9/9/21	12/09/21	12/09/21	18/09/21	23/09/21	23/09/21	26/09/21	27/09/21	29/9/21	30/9/21	4/10/21	7/10/21	10/10/21	12/10/21	19/10/21	21/10/21	24/10/21	27/10/21	31/10/21	2/11/21	7/11/21	14/11/21	18/11/21	21/11/21	26/11/21	29/11/21	29/11/21
1.	Chaudhari Ronak Pravin	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
2.	Deore Harshdip Bhagwan	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
3.	Gujar Raj Sunil	P	P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
4.	Koli Devyani Raju	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
5.	Patel Durgesh Lokesh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		P	P	P	P	P		P	P
6.	Patil Mayur Amol	P	P	P	P	P	P	P	P	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

Bargaonkar
Ms. N. A. Bargaonkar

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce & Science College, Shirpur

(Affiliated to the K.B.C. North Maharashtra University, Jalgaon)

STATEMENT OF MARKS

Diploma in Textile Chemistry

Examination Held in May -2022

Student Name: **Deore Harshdip Bhagvan**

College Name: **R.C.Patel Arts Commerce and Science College, Shirpur**

Seat Number: **DTC -02**

Paper Code	Paper Name	AM	Credit (Max.)	Marks Obtained
DTC-101	Chemistry of Polymer in Textile Industries	TH	6	89
DTC-102	Chemistry of Fibres in Textile Industries	TH	6	92
DTC-103	Lab Course	PR	8	95

Result: **Pass** CGPA: **6.15** CGPA: **O**

R.C.PATEL ARTS,COMM.AND SCI.COLLEGE SHIRPUR

Co-ordinator

Abbreviations:

AM: Assessment Methods, **P:** Pass, **F:** Fail, **AB:** Absent, **RR:** Result Reserved, **TH:** Theory, **PR:** Practical, **O:** Outstanding Grade

R.C.Patel Art's, Commerce & science College, Shirpur

DTC- 103- Practical Course

Paper- III

LAB COURSE

1. Determination of Total hardness of given water sample by EDTA solution method.
2. To find alkalinity of water by indicator method.
3. To determine the saponification value of given coconut oil sample.
4. Preparation of color dyes.
5. Measurement of absorbance of color dyes by colorimeter.
6. To determine suspended solids of given water sample.
7. To determine the purity percentage of NaCl.
8. To determine the purity percentage of Na_2SO_4.
9. To determine the purity percentage of $Na_2S_2O_4$.
10. Detection of type & functional group.
11. Detection of type & functional group.
12. Detection of type & functional group.
13. Detection of type & functional group.
14. Microsoft excel operating skills.
15. Microsoft Power point operating skills.
16. Determination of P^H of water.
17. Purification of impure water by treatment.
18. Determination of TDS of water.

Kaviyatri Bahinabai Chaudhari North Maharashtra University, Jalgaon

Ordinance 181

College

R. C. Patel Arts, Commerce and Science College, Shirpur

Name of career oriented course

Certificate Course in Women Studies

Faculty

Arts, Commerce and Science

Academic year

(2021-22)

K.B.C. North Maharashtra University, Jalgaon

Ordinance 181

College name	**:**	**R. C. Patel Arts, Science and Commerce College, Shirpur**
Title of the course	**:**	**Certificate Course in Women Studies**
Aims/Objective of the course	**:**	**To empower women in field of education, health, women laws, gender sensitization**
Duration of the course	**:**	**1 Year**
Fees structure	**:**	**Rs. 500/-**
Course structure	**:**	**Paper I: Gender and Education** **Paper II: Women Work and Employment** **Paper III: Field Work**
Eligibility for admission	**:**	**XIIth**

Skeleton of course:

Sr. No	**Paper**	**Name of subject**	**Theory / Practical**	**Teaching hours**	**Maximum marks allotted**			**Passing**			**Credit**
					External	Internal	Total	External	Internal	Total	
1.	Paper I	Gender and Education	Theory	90	60	40	100	24	16	40	6
2.	Paper II	Women Work and Employment	Theory	90	60	40	100	24	16	40	6
3.	Paper III	Field Work	Practical	120	60	40	100	24	16	40	8

CCWS 101: Gender and Education

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Topics	Lectures allotted (in hrs.)
Unit – I Introduction to Gender Sensitization • Key concepts in Gender studies. • Need, Scope and challenges of Women's Studies – Women's Studies as an academic discipline. Women's Studies to Gender Studies, Need for Gender Sensitization. • National Committees and Commissions for Women.	22
Unit – II Gender and Education • Women's Education – Gender diversities and disparities in enrolment, Curriculum content, Dropouts, profession and Gender. • Gendered Education- Family, Culture, Gender roles, Gender Identities. • Education for the Marginalized Women. • Recent Trends in Women's Education – Committees and Commissions on Education. • Vocational education and skill Development for women.	22
Unit – III Gender and Media • Discourse on Women and Media Studies- Mainstream Media, Feminist Media. • Coverage of Women's issues and issues of women in Mass Media and Media Organizations (Audio-Visual and Print media). • Digital Media and legal protection. • Alternative Media – Folk Art, Street Play and Theatre. • Indecent Representation of Women (Prohibition) Act, 1986, Impact of media on women.	24
Unit – IV Gender and Entrepreneurship • Concept and meaning, Importance of Entrepreneurship, Entrepreneurial traits, Factors contributing to Entrepreneurship, enabling environment, small Enterprises, women in agri-business. • Gender and emerging Technology – Impact. • Self-help Groups and Micro Credit. • Gender mainstreaming, Gender budgeting, planning and Analysis.	22
Total	**90**

CCWS 102: Women Work and Employment

Topics	Lectures allotted (in hrs.)
Unit – I Introduction to Women's Education • Women's Education – Gender bias in enrolment – Curriculum content – Dropouts. • Negative capability in Education – Values in Education – Vocational Education. • Recent Trends in Women's Education – Committees and Commissions on Education. • Adult Literacy and Non – formal education for women's development.	20
Unit – II Concept of Work • Concept of Work – Productive and non – productive work – Use • Value and market value. • Gender Division of Labor – Mode of Production – Women in organized and unorganized sector. • Training, skills and income generation. • New Economic Policy and its impact on Women's Employment – Globalization – Structural Adjustment Programs	22
Unit – III Women and Health • Gender in Health – Health status of women in India – Mortality and Morbidity factors influencing health – Nutrition and health – HIV and AIDS control programme. • National Health and Population Policies and Programme – Maternal and Child Health (MCH) to Reproductive and Child health approaches, Issues of old age. • Women and Environment – Nature as feminine principle – Basic needs in Rural and Urban Environments – Care and management of natural resources – Depletion of natural resources – Sustainable environment and impact on women.	24
Unit – IV Women and Media • Role of women in media – Development of Communication Skills – Alternative Media – Folk Art, Street Play and Theatre – Women as change agents. • Indecent Representation of Women (Prohibition) act, 1986 – Impact of media on women. • Indian Constitution and provisions relating to women. • Personal laws – Labour Laws – Violence against, women – Legal protection – Family Courts – Enforcement machinery – Police and Judiciary.	24

- Human Rights as Women's Rights

	Total	**90**

CCWS 103: Field Work

- Field work specially related to women's problem, report submission and oral presentation

References:

- Domestic Women Workers in India, Seepana Prakasham, Shipra Publication, 2012,202P
- Women's Studies in India by Meithei Krishna Raj
- Indian Women in History and Culture, Prof. Geraldine Forbes
- Women's Work in Globalizing India, Never Done and Poorly Paid Ghosh J.,New Delhi, Women Unlimited, 2009
- Journal of Gender Social Policy and Law
- Susan S. Wadly, "Women and the Hindu Tradition", Signs, 3:1 (August 1977)
- Butalia, U. and T Sarkar, (eds.), Women and the Hindu Right, New Delhi, Kali for women, 1996
- Sunder Rajan, R., the Scandal of the State: Women, Law and Citizenship in Postcolonial India, New Delhi, Permanent Black, 2004.
- Domestic Violence Against Women: Legal Protection Legislative and Judic

List of Admitted Students for **"Certificate Course in Women Studies"**

For the Academic Year 2021-22

Name of College: R. C. P. A.C. S. College, Shirpur
Name of Career Oriented Course: Certificate Course in Women Studies
Academic Year: 2021-2022
Intake Capacity: 60

Sr. No.	Name of Student	Gender	Category	Education Qualification	Year of passing	Presently admitted	Remark (if any)
1.	Mahajan Archana Mahendra	Female	OBC	XII Science	2020	F. Y. B. Sc.	
2.	Bhamare Sanjana Jitendra	Female	OBC	XII Science	2020	F. Y. B. Sc.	
3.	Mali Yogita Rohidas	Female	OBC	XII Science	2020	F. Y. B. Sc.	
4.	Kapadane Dipika Suresh	Female	OBC	XII Science	2020	F. Y. B. Sc.	
5.	Mali Yamini Yogesh	Female	OBC	XII Science	2020	F. Y. B. Sc.	
6.	Chauhan Kamalprit Kaur	Female	OBC	XII Science	2020	F. Y. B. Sc.	
7.	Shimpi Pooja Jayvant	Female	OBC	XII Science	2020	F. Y. B. Sc.	
8.	Borase Asmita Rakesh	Female	OBC	XII Science	2020	F. Y. B. Sc.	
9.	Dhangar Karishma Sudhakar	Female	SC	XII Science	2020	F. Y. B. Sc.	
10.	Beldar Sapana Nimba	Female	NT	XII Science	2020	F. Y. B. Sc.	
11.	Girase Rutika Komalsingh	Female	OPEN	XII Science	2020	F. Y. B. Sc.	

12.	Koli Dipali Shivaji	Female	SBC	XII Science	2020	F. Y. B. Sc.	
13.	Nikam Vishakha Shashikant	Female	OBC	XII Science	2020	F. Y. B. Sc.	
14.	Pagare Anjali Vijay	Female	OBC	XII Science	2020	F. Y. B. Sc.	
15.	Patel Sanika Vilas	Female	OBC	XII Science	2020	F. Y. B. Sc.	
16.	Patil Harshali Omkareshwar	Female	OBC	XII Science	2020	F. Y. B. Sc.	
17.	Patil Manasi Gajendra	Female	OBC	XII Science	2020	F. Y. B. Sc.	
18.	Kanade Harshada Sanjay	Female	OBC	XII Science	2020	F. Y. B. Sc.	
19.	Pawar Jagruti Chandrakant	Female	OBC	XII Science	2020	F. Y. B. Sc.	
20.	Tele Asmita Arun	Female	SC	XII Science	2020	F. Y. B. Sc.	
21.	Shaikh Almas Farooque	Female	OBC	S.Y.B.Sc.	2020	T.Y.B.Sc.	
22.	Gawali Darshana Ramesh	Female	NT	S.Y.B.Sc	2020	T.Y.B.Sc.	
23.	Warade Himani Anil	Female	OBC	T.Y.B.Sc	2020	M.Sc. I	
24.	Gawit Dipali Vasant	Female	ST	T.Y.B.Sc	2020	M.Sc. I	
25.	Kuwar Pooja Santosh	Female	SC	T.Y.B.Sc	2020	M.Sc. I .	

Certificate

This is to certify that the document regarding educational qualifications of the above students have been verified and found correct. The students mentioned in the list are eligible for the admission to the above mentioned course as per University Ordinance-181.

Co-ordinator

Dr. Vandana M. Patil

Principal

Dr. D. R. Patil

...ce and Science College Shirpur

Year: 2021-22

Certificate Course in Women Studies

Students Attendance

Sr. No.	Students Name	Students Signature											
		9/8/21	10/8/21	11/8/21	23/8/21	24/8/21	25/8/21	6/9/21	7/9/21	8/9/21	13/9/21	14/9/21	15/9/21
1)	Mahajan Archana Mahendra	Mahajan	Mahajan	Mahajan	Mahajan	Mahajan	Mahajan	Mahajan	Mahajan	Mahajan	Mahajan	Mahajan	Mahajan
2)	Bhambre Sanjana Jitendra	S.J. Bhambre	S.J. Bhambre	S.J. Bhambre	S.J. Bhambre	S.J. Bhambre	S.J. Bhambre	S.J. Bhambre	S.J. Bhambre	S.J. Bhambre	S.J. Bhambre	S.J. Bhambre	S.J. Bhambre
3)	Shimpi Pooja Jaywant	P	P	P	P	P	P	P	P	P	P	P	P
4)	Borse Asmita Rakesh	BORSE	BORSE	BORSE	BORSE	BORSE	BORSE	BORSE	BORSE	BORSE	BORSE	BORSE	BORSE
5)	Tele Asmita Arun	ATele	ATele	ATele	ATele	ATele	ATele	ATele	ATele	ATele	ATele	ATele	ATele
6)	Gavali Darshana R.	GDR	GDR	GDR	GDR	GDR	GDR	GDR	GDR	GDR	GDR	GDR	GDR
7)	Chisal Tejal Vinod	Chisal	Chisal	Chisal	Chisal	Chisal	Chisal	Chisal	Chisal	Chisal	Chisal	Chisal	Chisal
8)	Patil Mansi Gajendra	MGP	MGP	MGP	MGP	MGP	MGP	MGP	MGP	MGP	MGP	MGP	MGP
9)	Koli Dipali Shivaji	Koli	Koli	Koli	Koli	Koli	Koli	Koli	Koli	Koli	Koli	Koli	Koli
10)	Pagare Angeli Vijay	Pagare	Pagare	Pagare	Pagare	Pagare	Pagare	Pagare	Pagare	Pagare	Pagare	Pagare	Pagare
11)	Patel Sanika Vilas	PSV	PSV	PSV	PSV	PSV	PSV	PSV	PSV	PSV	PSV	PSV	PSV
12)	Shaikh Almas Parukh	SAF	SAF	SAF	SAF	SAF	SAF	SAF	SAF	SAF	SAF	SAF	SAF
13)	Warade Himani Anil	WHA	WHA	WHA	WHA	WHA	WHA	WHA	WHA	WHA	WHA	WHA	WHA
14)	Kuvar Puja Santosh	PKK	PKK	PKK	PKK	PKK	PKK	PKK	PKK	PKK	PKK	PKK	PKK
15)	Beldar Sapana	Beldar	Beldar	Beldar	Beldar	Beldar	Beldar	Beldar	Beldar	Beldar	Beldar	Beldar	Beldar
16)	Chaudhari Kamal Anil	Chaudhari	Chaudhari	Chaudhari	Chaudhari	Chaudhari	Chaudhari	Chaudhari	Chaudhari	Chaudhari	Chaudhari	Chaudhari	Chaudhari

Dr. Vandana Patil
Co-ordinator

R.C.Patel Arts, Commerce & Science College, Shirpur. Dist. Dhule.

Subject: CC WS-102-Women Work & employ Exam. Date: 10/5/22

Class : Women studies Internal exam Time: ...12 to 2

Sr.No	Exam. Seat No.	Student's Name	Sign
1	212209	Ghisale Tejal Vinod	Ghisale
2	212207	Shimpi Pooja Jaywant	
3	212219	Kanade Harshada Sanjay	Kanade
4	212212	Girase Rutika Komalsing	Girase
5	212201	Mahajan Archana Mahendra	Mahajan
6	212218	Patil Mansi Gajendra	Patil
7.	212203	Mali Yogita Rohidas	Yogita
8.	212213	Koli Dipali shivaji	
9	212215	Pagare Anjali vijay	A.V.P
10	212205	Mali Yamini Yogesh	Yamini
11	212210	Thangar karishma sudhakar	Karishma
12	212216	Patel Sanika Vilas	
13	212214	Vishaksha shashi Nikam	Nikam.
14	212217	Patil Harshali OMKareshwar	Harshali
15	212202	Bhamare Sanjana Jitendra	Bhamare
16	212206	Kamalpreet Kaur chauhan	Kamal.
18	212204	Kapadne Deepika Suresh	Deepika
19.	212223	Gavali Darshana Ramesh	Darshana
20.	212222	Shaikh Ahmad Farooque	Ahmad
21	212208	Borse Asmita Rakesh	Asmita
22	212219	Kanade Harshada Sanjay	Kanade
23	212220	Pawar Jagruti Chandrakant	Jagruti
24	212221	Beldar Sapna Himba	Sapna
25			
26			

Sign of Jr. Supervisor

Patil

K.B.C. North Maharashtra University, Jalgaon

Certificate course in

BIOINFORMATICS

Run by

R. C. Patel A. C. S. College, Shirpur

Under ordinance 181

Syllabus

w. e. f. 2021-22

Level of diploma	Graduate diploma
Eligibility	As per ordinance 181
Duration	1 Year
Total Credits	20 Credits

Course Structure

CCBI 101	Fundamentals of Biology	6 Credits

CCBI 102	Introduction to Bioinformatics	6 Credits
CCBI 103	Lab course	8 Credits

Topics	Lectures allotted *(in hrs)*
Vital aspects of life • Basic properties of life, Basic chemistry, pH, concept of acids, bases • Prokaryotic and eukaryotic cells- Structure and functions of various cell organelles	**15**
Concepts of chemistry • Elements and atoms • Molecules and compounds, types of bonds • Water and its properties • Bioenergetics: Laws of Thermodynamics and its Applications; Concept of free energy, Gibbs free energy.	**15**
Introduction to living forms • Characteristics of life, the tree of life • Animal kingdom – General properties • Plant kingdom– General properties • Microorganisms (bacteria, algae, fungi, protozoa and viruses) • Morphology and ultra-structure of bacteria • Concept of growth and different growth phases of bacteria • Microbial growth • Kinetics of growth	**25**
Concept of biomolecules • **Carbohydrates:** definition, properties of monosaccharide, disaccharide and polysaccharides • **Lipids:** biological significance, classification (simple, compound and derived lipids) • **Amino acids:** definition, physical and chemical properties of amino acids, classification, structure • **Proteins:** Biological significance, peptide bond, classification of proteins. • **Nucleic acids:** components of nucleic acids, sugars, purines and pyrimidines, nucleosides and nucleotides • **DNA:** structure and properties • **RNA:** structure, types and properties	**33**
Genetic code and its properties	*2*
Total	**90**

Topics	Lectures Allotted *(in hrs)*
Basics in computer science • Definition, characteristics, limitations and concept • Classification based on size and purpose • Concept of System Software Hardware storage device, Character User Interface, Graphical User Interface, Operating System- types, multitasking	**15**
Computer tools and internet • Block diagram and functions of units Computer peripherals and memory: Input units and output units, their functions • Primary storage (RAM) and secondary storage devices (ROM Pen drive, DVD, CD) • Operating systems: windows, Linux, Server **Internet and networking:** Current status, applications • LAN, WAN, MAN, WWW and MODEM	**25**
Introduction to bioinformatics: • Definition, history and concept of bioinformatics • Aims and tasks of bioinformatics • Areas of bioinformatics	**6**
Programming in bioinformatics • Computers and programs, • Concept of programming languages • Operating systems: Windows, LINUX, UNIX, MAC • Internet: Access, connectivity, world wide web	**20**
Biological databases and searching • Types of database: Classification; Primary, secondary databases • Nucleic acid databases: GenBank, EMBL, DDBJ • Protein databases: Swiss-Prot, PDB • Sequence retrieval system: SRS	**24**
Total	**90**

- **Lab Work**

1.	Computer basics; hardware, connection cables, typing, Windows 7/8.	**12**
2.	Working with MS-Office software Creating new documents, typing, deleting, selecting text, undo, redo, Formatting text – auto format, formatting, insertion of table characters, Paragraphs, line spacing, margins, page setup, headers and footers,spelling checker, auto format, auto correct, find & replace, Mail merge	**6**
3.	Assignments in MS-PowerPoint Creating slides, insertion of text, picture, table, charts etc, custom Animation, slide transaction	**6**
4.	Assignments in MS-Excel Creating worksheet, Graphs, resizing graphs, formulas, if statement, Types of functions, frequently used mathematical and statistical Functions	*6*
5.	Assignments in MS-Access – creating database, forms and reports	**8**
6.	Creating and editing files notepad and notepad++	**4**
7.	Basic commands in MS-DOS program (CUI)	**4**
8.	Learning the intranet system in the laboratory and getting its Characteristics	*4*
9.	Understanding the structure of Networking, LAN, WAN, MAN	**6**
10.	Introduction to internet, WWW and web browsers and their Applications	*4*
11.	Internet surfing and searching information, downloading and installing **Software accessing google scholar**	***16***
12.	Searching scientific information using NCBI using ENTERZ engine	**10**
13.	Retrieval of data from SwissProt Data Bank	**10**
14.	Introduction to literature database – PubMed	**10**
15.	Exploring protein sequence database and downloading protein sequence	

6

16. Exploring nucleic acid sequence database and downloading in FASTA Format **8**

References:

1. Dubey R.C. and Maheshwari D.K. 2004, Practical Microbiology, S.Chand and Co. Delhi.
2. Aneja K.R. (1996) Experiments in Microbiology, 3rd Edition Wishwa Prakashan,New Delhi.
3. Deshmukh A.M. (1997) 1st Edition, Handbook of Media, Stains and reagents in Microbiology Pama Publications.
4. Gaud R.S. and Gupta G.D. Practical Microbiology, Nirali Prakashan, Pune
5. Parija S.C., Text Book of Practical Microbiology Ahuja Publishing House, New Delhi.
6. Fundamentals of computers -V. Rajaraman
7. Computer Fundaments - P.K. Sinha
8. Computer Fundamentals (Architecture and Organization) -B. Ram
9. Microsoft Office 2000 – Vipra Computers
10. Digital Fundamentals - Floyd
11. Digital Principles and Applications - A. P. Malvino & D.P.Leach (TMH)
12. Modern digital Electronics (2nd Edn.) R. P. Jain
13. Bioinformatics - Computational Molecular Biology by Zvia Agur.
14. Basic bioinformatics by Ignacimuthu.
15. An introduction to bioinformatics by Vikramsingh, Narosa Publ

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce & Science College, Shirpur

(Affiliated to the K.B.C. North Maharashtra University, Jalgaon)

STATEMENT OF MARKS

Certificate in Bioinformatics (CGPA Pattern)

Examination held in May 2022

Student Name : Bhadane Dhiraj Mahesh

College Name : R. C. Patel Arts Commerce and Science College, Shirpur

Seat Number : 221105

Exam Centre : Shirpur (240051)

Paper Code	Paper Name	AM	Credits (Max.)	Marks Obtained
CCBI 101	Fundamentals of Biology	TH	6.0	83
CCBI 102	Introduction to Bioinformatics	TH	6.0	85
CCBI 103	Lab Course	PR	8.0	87

Result: **Pass**

CGPA: **5.45**

Grade: **A**

R.C.PATEL ARTS,COMM.AND SCI.COLLEGE SHIRPUR

Co-ordinator

Abbreviations:

AM: Assessment Methods, **P:** Pass, **F:** Fail, **AB:** Absent, **RR:** Result Reserved, **TH:** Theory, **PR:** Practical, **O:** Outstanding Grade

Lecture Attendance

Certificate course in Bioinformatics

2021-22

Name of Candidate	Signature of the Candidate	Signature Date/ Month

K.B.C. North Maharashtra University, Jalgaon
Ordinance 181

College

R. C. Patel Arts, Commerce and Science College, Shirpur

Name of career oriented course

Certificate Course in Plant Tissue Culture

Faculty

SCIENCE

Academic year

(2021-22)

College name	:	**R. C. Patel Arts, Science and Commerce College, Shirpur**
Title of the course	:	**Certificate Course in plant tissue culture**
Aims/Objective of the course	:	**To make students acquaint about methods in plant tissue culture and their applications.**
Duration of the course	:	**1 Year**
Fees structure	:	**Rs. 1000/-**
Course structure	:	**Paper I: Fundamentals in Plant Physiology** **Paper II: Basics in Plant Tissue Culture** **Paper III: Lab Course**
Eligibility for admission	:	**12th Science**

Skeleton of course:

Sr No	Paper	Name of subject	Theory / Practicalal	Teaching hours	Maximum marks allotted			Passing			Credit
					External	Internal	Total	External	Internal	Total	
1.	Paper I	Fundamentals in Plant Physiology	Theory	90	60	40	100	24	16	40	6
2.	Paper II	Basics in Plant Tissue Culture	Theory	90	60	40	100	24	16	40	6
3.	Paper III	Lab course	Practical	120	60	40	100	24	16	40	8

Minimum staff : 03

Mode of examination : Internal and external

(Theory and Practical)

Detail syllabus : Syllabus copy attached

CCPTC 101: Fundamentals in Plant Physiology

Topics	Lectures Allotted
1. Plant Cell:	
1.1 Plant cell organelles: structure and function Cell wall, plasma membrane, Endoplasmic reticulum, Vacuole, Golgi apparatus, Plastid & Nucleus 1.2 Storage granules 1.3 Osmosis: Role in turgidity 1.4 Homeostasis: concept and significance	12
2. Plant water relation and transport:	
2.1 Absorption and movement of water: Theories of water translocation, Transpiration, Stomatal physiology. 2.2 Nutrient Transport: Passive transport, Active transport, Permeability. 2.3 Conservation of water	10
3. Photosynthesis:	
3.1 Photosynthesis: Concept, History, 3.2 Photosynthetic apparatus: Chloroplast, Pigments 3.3 Photosystem-I and Photosystem-II 3.4 Light reaction: Photophosphorylation (cyclic and non-cyclic) 3.5 Dark reaction; C3 pathway or Blackmanns reaction or Calvin cycle 3.6 Significance of photosynthesis	12
4. Growth and development in Plants:	
4.1 Plant growth: Cell cycle: Mitosis 4.2 Growth kinetics: Whole organs (S-shaped growth curve) 4.3 Growth of plant organs: roots, stems, leaves, flowers, seeds and fruits 4.4 Morphogenesis, Juvenility, Totipotency 4.5 Media nutrients and requirements of growth	12
5. Plant Hormones:	
Concept of hormones and their role in Plant tissue culture 5.1 Auxins: introduction, Mechanism of action, use as herbicides 5.2 Cytokines: Introduction, Mechanism of Action, 5.3 Gibberellins: Introduction, Mechanism of action, commercial uses of Gibberellins 5.4 Ethylene: Introduction, Action, Role in flowering. 5.5 Abscisic acid (ABA): Introduction, Action, Role.	10
6. Plant diseases	
6.1 Citrus Canker Powdery mildew in apple 6.2 Whip Smuts of Sugarcane	**12**

6.3 Leaf spots in Tikka disease of groundnut
6.4 Rots in cucurbits

CCPTC 102: Basics in Plant Tissue Culture

Topics	Lectures allotted
1. Introduction to PTC Laboratory:	
1.1 Introduction & Organization of PTC lab: 1.2 Development of Tissue culture media **1.3** Media constituents: Inorganic and organic nutrients, growth Hormones, gelling agents 1.4 Media preparation and methods of sterilization	**14**
2. Totipotency and Cytodifferentiation:	
2.1 Totipotency: Introduction, Expression, significance 2.2 Cytodiffertiation: Introduction, Process, Factors affecting cytodifferentiation	**12**
3. Organ culture:	
Different types of organ culture (principle, protocol, and Importance) 3.1 Root culture 3.2 Leaf culture 3.3 Meristem; shoot tip culture, flower culture 3.4 Ovary culture 3.5 Anther and pollen culture	**14**
4. Callus culture:	
4.1 Callus culture: Introduction and principle 4.2 Characteristics of callus 4.3 Process of callus formation 4.4 Methods and significance of callus	**12**
5. Somatic embryogenesis:	
5.1 Somatic embryogenesis: Introduction and principle and Significance 5.2 Methods in somatic embryogenesis 5.3 Factors affecting on somatic embryogenesis 5.4 Artificial seeds: development and uses	**14**
6. Application of plant tissue culture:	
6.1 Micro propagation 6.2 Clonal propagation 6.3 Production of genetically variable plants 6.4 Plant pathology and plant tissue culture 6.5 Plant breeding 6.6 Production of useful biochemical	**12**

CCPTC 103: Lab Course

Sr. No.	Lab course	Lectures allotted
1.	Overview to plant tissue culture laboratory.	08
2.	Preparation of stock solutions	08
3.	Preparation of growth media.	10
4.	Preparation and sterilization of explants	08
5.	Production of callus by using carrot/Clitoria ternetia/ Hibiscus rosa sinensis.	10
6.	shoot tip culture	08
7.	Study of somatic embryogenesis by using groundnut/ Wheat	08
8.	Initiation of cell suspension culture	12
9.	Study of micro propagation	08
10.	Study of transpiration	08
11.	Study of embryo culture	10
12.	Estimation of chlorophyll content from different plant leafs.	06
13.	Study of stomatal physiology.	08
14.	Study of cell cycle: various mitotic stages	08

References:

1. Kalyan Kumar De, Plant tissue culture.
2. Plant tissue culture, S. S. Bhojwani and M.K. Rajdhan.
3. Plant biotechnology and its application in tissue culture; Ashwini Kumar, Shikha Roy, IK International publication.
4. Plant physiology ; Fourth edition, Salisburry Ross, Thomson, Wadsworth publication
5. Plant physiology; C. P. Malik, Kalyani publication ,New Delhi – Ludhiana
6. Plant physiology; Second edition, G. Ray Noggle, George J. Fritz, Prentice Hall of India private limited.
7. Plant physiology; R.S.Mehrotra, Ashok aggrawal, Tata McGraw Hill.
8. Kalyan Kumar De, Plant tissue culture.
9. Plant tissue culture, S.S.Bhojwani and M.K. Rajdhan.
10. Plant biotechnology and its application in tissue culture; Ashwini Kumar, Shikha Roy, IK International publication.
11. Plant tissue culture, S.S. Purohit.

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce & Science College, Shirpur

(Affiliated to the K.B.C. North Maharashtra University, Jalgaon)

STATEMENT OF MARKS

Certificate in Plant Tissue Culture (CGPA Pattern)

Examination held in May 2022

Student Name : Patel Yamini Chandrakant

College Name : R. C. Patel Arts Commerce and Science College, Shirpur

Seat Number : 222105

Exam Centre : Shirpur (240051)

Paper Code	Paper Name	AM	Credits (Max.)	Marks Obtained
CCPTC 101	Fundamentals in Plant Physiology	TH	6.0	87
CCPTC 102	Basics in Plant tissue culture	TH	6.0	91
CCPTC 103	Lab Course	PR	8.0	93

Result: **Pass**

CGPA: **6.15**

Grade: **O**

R.C.PATEL ARTS,COMM.AND SCI.COLLEGE SHIRPUR

Co-ordinator

Abbreviations:

AM: Assessment Methods, **P:** Pass, **F:** Fail, **AB:** Absent, **RR:** Result Reserved, **TH:** Theory, **PR:** Practical, **O:** Outstanding Grade

Lecture attendance

Certificate course in Plant tissue culture

2021-22

Name of Candidate	01/07/21	14/07/21	17/07/21	02/07/21	03/07/21	09/07/21	10/07/21	16/07/21	17/07/21	24/07/21	31/07/21	07/08/21	14/08/21	20/08/21	21/08/21	28/08/21	31/08/21	04/09/21	11/09/21	18/09/21	24/09/21	25/09/21	11/10/21	8/10/21	9/10/21	10/10/21	23/11/21	23/11/21	5/12/21	11/12/21	24/12/21	8/01/22	15/01/22	22/01/22	21/01/22	22/01/22	28/01/22	29/01/22	4/2/22	5/02/22	11/02/22	12/02/22	18/02/22	25/02/22	26/02/22
Mahajan Neha Yuvraj	P	P	P	P	P	A	P	P	P	P	P	A	P	P	P	P	P	P	P	A	P	P	P	P	A	A	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	A	P	P
Solanki Priti Jagan	P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	A	P	P	P	A	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	A	P	P	P	A	P	P
Patil Priyanka Hemraj	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Kadi Madhura Rajendra	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	A	P	P	A	A	A	P	P	P	P	A	P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	A	P	P
Patel Yamini Chandrakant	P	P	P	P	P	P	P	A	P	P	P	A	P	P	P	A	P	P	P	P	P	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P

K.B.C. North Maharashtra University, Jalgaon

Ordinance 181

College

R. C. Patel Arts, Commerce and Science College, Shirpur

Name of career oriented course

Diploma in Plant Tissue Culture

Faculty

SCIENCE

Academic year

(2020-21)

K.B.C. North Maharashtra University, Jalgaon

Ordinance 181

College name : **R. C. Patel Arts, Commerce and Science College, Shirpur**

Title of the course : **Diploma in Plant Tissue Culture**

Aims/Objective of the course : **To make students acquaint about methods in plant tissue culture and their applications.**

Duration of the course : **1 Year**

Fees structure : **Rs. 1000/-**

Course structure : **Paper I: Plant Biotechnology**

Paper II: Plant Tissue Culture

Paper III: Lab Course

Eligibility for admission : **Certificate Course in Plant Tissue Culture**

Skeleton of course:

Sr No	Paper	Name of subject	Theory / Practical	Teaching hours	Maximum marks allotted			Passing			Credit
					External	Internal	Total	External	Internal	Total	
4.	DPTC-101	Plant Biotechnology	Theory	90	60	40	100	24	16	40	6
5.	DPTC-102	Plant Tissue Culture	Theory	90	60	40	100	24	16	40	6
6.	DPTC-103	Lab course	Practical	120	60	40	100	24	16	40	8

Minimum staff : 03

Mode of examination : Internal and external

(Theory and Practical)

Detail syllabus : Syllabus copy attached

DPTC 101: Plant Biology

Topics	Lectures allotted
1. Plant tissue culture and some related aspects	
1.1 Bio village 1.2 concept: Qualifications required to join the training course, Employment for rural youth 1.3 Efforts of public research institutes 1.4 Production criteria and economics: Selection of crops for micro propagation, Selection of location 1.5 Planning for production: Multirate, Passage, Operator efficiency	**15**
2. Germplasm Conservation and Storage	
2.1 Introduction 2.2 Approaches for germplasm conservation: *In-situ* Conservation and *Ex-situ* Conservation 2.3 Germplasm conservation in the form of seeds 2.4 In-vitro methods for germplasm conservation 2.5 Applications of germplasm storage 2.6 Limitations of germplasm storage	**15**
3. Plant tissue culture and Cryopreservation	
3.1 Introduction 3.2 Technique used in cryopreservation 3.3 Development of sterile tissue cultures 3.4 Addition of cry protectants and pretreatment 3.5 Freezing, Storage, Thawing 3.6 Reculture, Measurement of viability and Plant regeneration	**15**
4. Eco-Social Impact of Genetically Modified Crops	

4.1 Legal rights in the new biotechnology: Patent 4.2 Impacts on Farmers and Consumers, Ethical and Practical Problems 4.3 Transgenic plants: Risk, Benefits and Impact on Society and Environment 4.4 Transgenics and Human wealth	**15**
5. Agro biotechnology and its Applications	
5.1 Improvement of crop yield and quality: Green revolution 5.2 Genetic manipulations of fruit ripening, 5.3 Preventation of discolorations, flower pigmentation 5.4 Male sterility 5.5 Genetic Engineering for increasing vitamins, amino acids & minerals 5.6 Commercial transgenic crop plants	**15**
6. Plant tissue culture and forestry	
6.1 Introduction and History 6.2 Scope of tissue culture in forestry. 6.3 Applications of PTC in forestry.	**15**

References:

1. Introduction to biotechnology: S. S. Purohit.
2. Biotechnology: U. Satyanarayana
3. Kalyan Kumar De, Plant tissue culture.

DPTC 102: Advances in Plant Tissue Culture

Topics	Lectures allotted
1. Preparation of Media	
1.1 Media components 1.2 Preparation of Stock solutions 1.3 Preparation of Media 1.4 Media mixing	**15**
2. Aseptic Techniques and preparation of Explants	
2.1 Sterilization of Plant Tissues 2.2 Control of Bacterial and Fungal Contaminants by antibiotics 2.3 Pretreatment to explant 2.4 Age of explant 2.5 Size of explant	**15**
3. Methods of sterilization and Disinfectation	
a. Effectiveness of antimicrobial agent activity: Population size, population composition, Concentration of antimicrobial agent, exposure time, Temperature b. Sterilization: Moist Heat, Dry Heat, Filtration, Radiation c. Disinfection: Chemical disinfectants, Classification of Chemical Disinfectants	**15**
4. Organogenesis:	
4.1 Introduction 4.2 What is embryo culture? 4.3 Different categories of embryo culture and their objectives. 4.4 Principle and protocol. 4.5 Applications.	**15**
5. Cell – Suspension culture:	
5.1 Definition 5.2 Principle 5.3 Protocol 5.4 Importance of cell suspension culture.	**15**
6. Embryo culture Organogenesis:	
6.1 Introduction 6.2 Principle and Protocol. 6.3 Factors affecting organogenesis. 6.4 Applications of organogenesis	**15**

References:

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce & Science College, Shirpur

(Affiliated to the K.B.C. North Maharashtra University, Jalgaon)

STATEMENT OF MARKS

Diploma in Plant Tissue Culture (CGPA Pattern)

Examination held in May 2022

Student Name : Pawar Prajakta Narendra

College Name : R. C. Patel Arts Commerce and Science College, Shirpur

Seat Number : 222202

Exam Centre : Shirpur (240051)

Paper Code	Paper Name	AM	Credits (Max.)	Marks Obtained
DPTC 101	Plant Biotechnology	TH	6.0	86
DPTC 102	Plant tissue Culture	TH	6.0	85
DPTC 103	Lab Course	PR	8.0	92

Result: **Pass** CGPA: **5.80** Grade: **A**

R.C.PATEL ARTS,COMM.AND SCI.COLLEGE SHIRPUR

Co-ordinator

Abbreviations:

AM: Assessment Methods, **P:** Pass, **F:** Fail, **AB:** Absent, **RR:** Result Reserved, **TH:** Theory, **PR:** Practical, **O:** Outstanding Grade

Lecture attendance

Diploma in Plant tissue culture

2021-22

Name of Candidate	7-8-21	8-8-21	09/8	17/8	22/8	1/9	2/9	3/9	4/9	5/9	22/9	23/9	5/10	17/10	18/10	19/10	20/10	25/10	31/10	5/11	7/11	12/11	22/11	23/11	25/11	12/12	15/12	17/12	23/12	27/12	30/12	5/01	17/01	19/01	25/01	29/1	31/1	7/2	8/2	9/2	15/2	17/2	19/2	22/2	25/2
Kokarde Yash Sunil	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P
Pawar Prajakta Narendra	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Thorat Janhavi Kailas	P	P	P	P	P	P	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

K.B.C North Maharashtra University, Jalgaon

Ordinance 181

College

R. C. Patel Arts, Commerce and Science College, Shirpur

Name of career oriented course

Diploma in Bioinformatics

Faculty

SCIENCE

Academic year

(2021-22)

North Maharashtra University, Jalgaon
Ordinance 181

College name	**:**	**R. C. Patel Arts, Science and Commerce College, Shirpur**
Title of the course	**:**	**Diploma In Bioinformatics**
Aims/Objective of the course	**:**	**To make students acquaint about methods in bioinformatics and their applications in life sciences**
Duration of the course	**:**	**1 Year**
Fees structure	**:**	**Rs. 1000/-**
Course structure	**:**	**Paper I: Basics in cell Sciences** **Paper II: Fundamentals of Bioinformatics** **Paper III: Lab Course**
Eligibility for admission	**:**	**Certificate Course in Bioinformatics**

Skeleton of course:

Sr No	**Paper**	**Name of subject**	**Theory / Practical**	**Teaching hours**	**Maximum marks allotted**			**Passing**			**Credit**
					External	Internal	Total	External	Internal	Total	
7.	Paper I	Basics in Cell Science	Theory	90	60	40	100	24	16	40	6
8.	Paper II	Fundamentals of Bioinformatics	Theory	90	60	40	100	24	16	40	6
9.	Paper III	Lab course	Practical	120	60	40	100	24	16	40	8

DBI 101: Basics in Cell sciences

.

Topics	Lectures allotted (in hrs)
Cell Organization: Prokaryotic cell: Structure & Organelles Plant cell: Structure & Organelles Animal cell: Structure & Organelles Golgi apparatus RER and SER Mitochondria Plastids, vacuole Nucleus Endoplasmic reticulum	15
Basics in Genetics: Concept of genes and genome Chromosome: Structure and composition (Histones & Nucleosome) Mutation: Concept and types (Point, nonsense, frame shift, transitions, trans versions)	15
Cell Cycle: Mitosis: Introduction, Steps, significance Meiosis: Introduction, Steps, significance Differences Mitosis & Meosis	15
Central Dogma of Molecular Biology : DNA réplication : Détails of réplication : Initiation, Elongation, Termination Transcription : Détails of transcription : Initiation, Elongation, Termination Translation: Détails of translation: Initiation, Elongation, Termination	15
Basics in Immunology: Background of Immune system, Concept of immunity Cells and organs of immune system Concept of antigen: Types of antigen, antigenic determinants Concept of Hapten; antigen and Immunogen Concept of Antibody: Structure, types and functions (IgA, IgG, IgM. IgD and IgE) Overview of immune responses: CMI and humoral immune response	30
Total	**90**

DBI 102: Fundamentals of Bioinformatics

Topics	Lectures allotted (in hrs.)
Alignment and Comparisons of Sequence Study of single sequence Outline of Single sequence alignments: Pair wise alignments, Scoring matrix, PAM, BLOSUM, Gap penalty; Alignment types: Global and local alignment Alignment algorithms: Dynamic methods: Needleman-Wunsch algorithm, Smith-Waterman algorithm; Heuristic methods: FASTA, BLAST; Multiple sequence alignments: ClustalW, ClustalX; PSI-BLAST: BLAST searches	30
Gene studies Introduction to Gene prediction strategies Basics in Exon prediction Background in Protein prediction strategies Basics in Coding sequence prediction Tools available for prediction of gene	15
Proteins alignments Background of Protein structure alignments Secondary structure prediction strategies Three-dimensional structure determination Comparison of protein structures Different structure alignment algorithms	20
Data mining NCBI resources SRS OMIM tool ENTREZ search engine Advanced search UniProt	10
Outline to tools ClustalOmega ClustalW MEGA5 Phylip package JMol SPDBV Mol-Mol	15
Total	**90**

DBI 103: Lab Course

Lab work	Periods allotted (in hrs.)
Study of Sequence alignment using ClustalOmega	**6**
Study of Retrieving DNA/RNA sequence in FASTA file format from NCBI.	**4**
Searching and downloading pdb files from protein data bank.	**4**
Protein structure visualization using SPDBV	**6**
Search and retrieve protein data from UniProtKB/Swiss-Prot and UniProtKB/TrEMBL	**4**
Similarity searching using BLAST for DNA / protein sequence.	**4**
Sequence alignment using Needle / Water program	**6**
Exploring database at NCBI and querying the PUBMED database using the ENTREZ search engine	**8**
Sequence alignment using Needleman-Wunsch algorithm	**6**
Sequence alignment using Smith-Waterman algorithm	**8**
Multiple sequence alignment using BLAST	**7**
Searching for protein sequence alignments using pBLAST	**5**
Designing primers for given DNA sequence using online tools	**8**
Predicting protein properties from ExPASy server using 'ProtParam'	**8**
Protein sequence similarity search using FASTA at EBI	**8**
Practical based on DAMBE software	
Alignment of nucleic acid sequence to aligned amino acid sequence	**4**
Calculating amino acid frequency from given sequence	**4**
Determination of tRNA loop of given sequence	**4**
Extract secondary structure from a pdb file	**4**
Secondary structure prediction using CFSSP	**4**
Study of ProtParam	**8**
Total	**120**

References:

1. Singh Bharat, “Immunology”, Pointer Pub, Jaipur.
2. Yadav .P.R,”Immunology”, Dicovery Pub House, New Delhi.
3. Coleman.R.M, Lombard.M.F, Sicard.R.E, Rencocca.N.J , “Fundamentals of
4. Immunology” by W.C.Brown Pub,1989
5. S.C. Rastogi, Namita Mendirata, Parag Rastogi Bioinformatics concepts Skills and application, CBS publisher
6. D. Baxevanis and F. Oulette, (2002), "Bioinformatics: A practical guide to the analysis of genes and proteins", Wiley
7. Arthur M. Lesk, (2002), "Introduction to Bioinformatics" Oxford University
8. Alexis Leon and Mathews Leon Introduction to computers with MS –Office 2000 Tata Mcgrow Hill.
9. Bioinformatics - Computational Molecular Biology by Zvia Agur.
10. “Basic Bioinformatics” by Ignacimuthu.
11. An introduction to bioinformatics by vikramsingh, Narosa Publications.

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce & Science College, Shirpur

(Affiliated to the K.B.C. North Maharashtra University, Jalgaon)

STATEMENT OF MARKS

Diploma in Bioinformatics (CGPA Pattern)

Examination held in May 2022

Student Name : Deore Jayesh Sanju

College Name : R. C. Patel Arts Commerce and Science College, Shirpur

Seat Number : 201210

Exam Centre : Shirpur (240051)

Paper Code	Paper Name	AM	Credits (Max.)	Marks Obtained
DBI 101	Basics in Life Sciences	TH	6.0	84
DBI 102	Fundamentals of Bioinformatics	TH	6.0	86
DBI 103	Lab Course	PR	8.0	91

Result: **Pass**

CGPA: **5.65**

Grade: **A**

Co-ordinator

Abbreviations:

AM: Assessment Methods, **P:** Pass, **F:** Fail, **AB:** Absent, **RR:** Result Reserved, **TH:** Theory, **PR:** Practical, **O:** Outstanding Grade

Lecture attendance

Diploma in Bioinformatics

2021-22

Name of Candidate	
Kokarde Yash Sunil	
Deore Jayesh Sanju	
Thorat Janhavi Kailas	
Deore Darshana Raju	

K.B.C. North Maharashtra University, Jalgaon

Ordinance 181

College

R. C. Patel Arts, Commerce and Science College, Shirpur

Name of career oriented course

Advance Diploma in Bioinformatics

Faculty

SCIENCE

Academic year

(2021-22)

North Maharashtra University, Jalgaon
Ordinance 181

College name : **R. C. Patel Arts, Commerce and Science College, Shirpur**

Title of the course : **Advance Diploma in Bioinformatics**

Aims/Objective of the course : **To make students acquainted about methods in Bioinformatics and their applications in life sciences**

Duration of the course : **1 Year**

Fees structure : **Rs. 1000/-**

Course structure : **Paper I: Genetic Engineering & Molecular Biology**

Paper II: Advances of Bioinformatics

Paper III: Lab Course

Eligibility for admission : **Diploma in Bioinformatics**

Skeleton of course:

Sr No	Paper	Name of subject	Theory / Practical	Teaching hours	Maximum marks allotted			Passing			Credit
					External	Internal	Total	External	Internal	Total	
10.	ADBI-101	Molecular Genetics & Bio-Engineering	Theory	90	60	40	100	24	16	40	6
11.	ADBI-102	Advances in Structural Bioinformatics	Theory	90	60	40	100	24	16	40	6
12.	ADBI-101	Lab course	Practical	120	60	40	100	24	16	40	8

Minimum staff : 03

Mode of examination : Internal and external

(Theory and Practical)

ADBI 101: Molecular Genetics and Bio-Engineering

Topics	Lectures allotted (in hrs.)
Unit I: Nucleic acid Chemistry 1.1 Structural aspects – Components of DNA and RNA, 1.2 Nucleosides & Nucleotides (introduction, structure & bonding), 1.3 Double helical structure of DNA (Watson-Crick model), various forms of DNA 1.4 Structure of RNA (Primary, Secondary & Tertiary) 1.5 Central dogma of molecular biology	15
Unit II: Molecular apparatuses 2.1 DNA polymerase 2.2 RNA polymerase and its types 2.3 DNA topology 2.4 Topoisomerase (Types and Mechanism) 2.5 Vectors	20
Unit III: Basics in genetic engineering 3.1 Basic principles of genetic engineering 3.2 Open reading frames 3.3 Restriction enzymes and its types	15
Unit IV:Advances in genetic engineering 4.1 DNA Sequencing Methods (Dideoxynucleotide sequencing 4.2 Chemical degradation method) 4.3 Protein sequencing 4.4 DNA microarrays 4.5 Human genome project 4.6 PCR (Principle and basic protocol variations and applications)	15

4.7 Genomic and cDNA libraries construction and their applications	
Unit V: Analysis of sequence data	
5.1 Identification of gene functions and their products 5.2 Expression signals, SNP and EST 5.3 Protein motifs and domains	15
Unit VI: Analysis of gene expression:	
6.1 Analyzing transcriptions (Northern blots, RT-PCR), 6.2 Translational analysis (western blots, 2D-electrophoresis)	10
Total	**90**

ADBI 102: Advances in Structural Bioinformatics

Topic	Lectures allotted (in hrs.)
Unit 1: Genomics 1.1 Genomics, Concept, approaches and methods 1.2 Genome mapping, determining sequence of a clone 1.3 Human genome project 1.4 Automated DNA sequencing.	12
Unit 2: Proteomics 2.1 Technology for protein expression analysis 2.2 Posttranslational modification 2.3 Protein sorting 2.4 Protein-protein interactions	08
Unit 3: Sequence alignment and algorithms a. Study of similarities b. Sequence alignment methods c. Pairwise sequence alignment d. Needleman-Wunsch algorithm and Smith-Waterman algorithm **e.** Multiple sequence alignment and programs for sequence alignment	14
Unit 4: Protein motifs and domain prediction 4.1 Identification of motifs and domains in multiple sequence alignment 4.2 motif and domain databases using regular expressions 4.3 Protein family databases.	12
Unit 5: Phylogenetic analysis 5.1 Terminologies 5.2 Molecular evolution and Molecular phylogenetics 5.4 Gene phylogeny and secies phylogeny 5.6 Forms of phylogenetic tree.	12
Unit 6: Phylogenetic tree construction 6.1 Distance based methods and character based methods 6.3 Phylogenetic tree evaluation 6.4 Phylogenetic programs – PHYLIP and DAMBE	12
Unit 7: Online Map repositories 7.1 NCBI – Entrez Human genome map viewer 7.2 OMIM – Online Mendelian Inheritance in Man	10
Unit 8: Drug discovery and pharm informatics 8.1 Discovering a drug 8.2 Target identification and validation 8.3 Identifying the lead compound 8.4 Optimization, pharm informatics	10
Total	**90**

ADBI 103: Lab course

Lab work	Periods allotted (in hrs)
Study SPDBV and Rasmol	8
Study of Molecular phylogeny (PHYLIP)	6
Study of ENTREZ search engine	6
Prediction of ORF using ORFfinder	5
Determination of protein properties using NCBI	6
Study of human genome map viewer of NCBI	4
Analysis of protein and nucleic acids sequences	6
Accessing PubMed and PubMed Central	4
Study of Online Mendelian Inheritance in Man	10
Comparing and analyzing sequences using DAMBE.	8
Homology comparing using HomoloGene	10
Design PCR primers using online tools	4
Protein multiple sequence analysis using NCBI-COBALT	8
Studying phylogeny analysis	10
Determine sequence relationship using Needleman-Wunsch algorithm	7

Sequence similarity searching (NCBI BLAST)		12
	Total	**94**

References:

1. Cell biology, genetics, molecular biology, evolution and ecology by P. S. Verma and V. K. Agrawal, S. Chand Publ.
2. Friefielder D, (1993) Microbial Genetics, Jones & Bartlett Publishers, Inc.
3. Arora M. P. Sandhu G.S. "Genetics"
4. Arora M. P. "Biotechnology"
5. Claverie J. M. & Notredame C. "Bioinformatics: A beginner's guide"
6. Bioinformatics - Concepts, Skills, Applications". S.C. Rastogi, Namita Mendiratta, Parag Rastogi.
7. Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins. Andrea's D. Baxevanis, B.F. Francis Ouellette.
8. Biological Sequence Analysis: Probabilistic Models of Proteins and Nucleic Acids. Richard Durbin et al.
9. Computer Methods for Macromolecular Sequence Analysis. Doolittle R.F. (Ed.) (Methods in Enzymology, VOl. 266).
10. Shanmughavel, P. 2005. Principles of Bioinformatics, Pointer Publishers, Jaipur, India.
11. DNA and Protein Sequence Analysis. A Practical approach. Bishop M.J. Rawlings C.J. (Eds.).
12. Introduction to Bioinformatics. Teresa. K. Atwood and David J. Parry-Smith.
13. An introduction to Bioinformatics by vikramsingh, Narosa Publ.
14. Bioinformatics - Computational Molecular Biology by Zvia Agur.
15. Basic Bioinformatics by Ignacimuthu.

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce & Science College, Shirpur

(Affiliated to the K.B.C. North Maharashtra University, Jalgaon)

STATEMENT OF MARKS

Advanced Diploma in Bioinformatics (CGPA Pattern)

Examination held in May 2022

Student Name : Bodani Simran Omprakash

College Name : R. C. Patel Arts Commerce and Science College, Shirpur

Seat Number : 221301

Exam Centre : Shirpur (240051)

Paper Code	Paper Name	AM	Credits (Max.)	Marks Obtained
ADBI 101	Molecular Genetic and Bio-Engineering	TH	6.0	90
ADBI 102	Advances in Structural Bioinformatics	TH	6.0	90
ADBI 103	Lab Course	PR	8.0	89

Result: **Pass**

CGPA: **6.10**

R.C.PATEL ARTS,COMM.AND SCI.COLLEGE SHIRPUR

Grade: **O**

4/21/22

Co-ordinator

Abbreviations:

AM: Assessment Methods, **P:** Pass, **F:** Fail, **AB:** Absent, **RR:** Result Reserved, **TH:** Theory, **PR:** Practical, **O:** Outstanding Grade

Lecture attendance

Advanced diploma in Bioinformatics

2021-22

Name of Candidate	2/06/21	3/06/21	4/06/21	5/06/21	6/06/21	7/06/21	9/06/21	10/06/21	11/06/21	12/06/21	13/06/21	14/06/21	17/06/21	02/07/21	03/07/21	9/07/21	10/07/21	16/07/21	17/07/21	24/07/21	31/07/21	7/08/21	14/08/21	20/08/21	21/08/21	28/08/21	31/09/21	4/09/21	11/09/21	18/09/21	24/09/21	25/09/21	01/10/21	8/10/21	9/10/21	16/10/21	22/10/21	23/10/21	4/11/21	9/11/21	11/11/21	24/11/21	8/01/22	15/01/22	22/01/22	23/01/22	25/01/22	28/01/22
Rodam Simran Omprakash	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Dave Yogita Shivaji	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

K.B.C. North Maharashtra University, Jalgaon

Ordinance 181

R. C. Patel Arts, Commerce and Science College, Shirpur

Name of Career Oriented Course

PG Diploma in Bioinformatics

Faculty

SCIENCE

Academic year

(2021-22)

North Maharashtra University, Jalgaon

Ordinance 181

College name	**:**	R. C. Patel Arts, Science and Commerce College,Shirpur
Title of the course	**:**	Post graduate diploma in Bioinformatics
Aims/Objective of the course	**:**	To make students acquaint about current trends in the field of bioinformatics and its application in lifesciences.
Duration of the course	**:**	1 Year
Fees structure	**:**	Rs. 1500/-
Course structure	**:**	Paper I: Foundations in Life Sciences Paper II: Advances in Bioinformatics Paper III: Lab Course
Eligibility for admission	**:**	B.Sc. (Science) as per ordinance 181

Skeleton of course:

Sr. No.	**Paper**	**Name of subject**	**Theory / Practical**	**Teaching hours**	**Maximum marks allotted**			**Passing**			**Credit**
					External	Internal	Total	External	Internal	Total	
1.	Paper I	Foundations in Life Sciences	Theory	90	60	40	100	24	16	40	6
2.	Paper II	Advances in Bioinformatics	Theory	90	60	40	100	24	16	40	6
3.	Paper III	Lab course	Practical	120	60	40	100	24	16	40	8

PGDBI 101: Foundations in Life Sciences

Topics	Lectures allotted (in hrs.)

Chemistry of Life
• Chemistry of living organisms, atoms, elements, chemical bonds,comparison of enzymatic and non-enzymatic reactions.
• **Study of biomolecules:**
  • **Carbohydrates:** Structure, classification
  • **Proteins:** properties of amino acids and peptides; structural levelsof proteins; phi- and psi- angles in protein conformation.
  • **Enzymes:** EC number, enzyme nomenclature and classification;units of enzyme activity; allosteric enzymes.
	15

Genetics • **Basics concepts of genetics:** Bases, nucleotides, nucleosome,histones, genes, genomes. • **RNA:** Structure, function and types, mRNA splicing • **DNA:** structure of B form of DNA; denaturation, renaturation kinetics,hybridization of DNA, circular and linear DNA. • **Genome mapping and genome sequencing:** Basics and significance	**15**
Immuno-informatics • **Immune system:** Overview, Types: (innate and acquired) • **Antibody:** Structure and function • **MHC**: MHC Peptide interaction, MHC I & II, Polymorphism • **B Cell and T Cell antigens:** Characteristics and Importance • **Immune response:** CMI and humoral immune response • **Bioinformatics in immunology:** Background and significance invaccine development	**15**

Topics	Lectures allotted (in hrs.)
Central Dogma of Molecular biology • Nucleic Acid: Types and Structure • 16S RNA • DNA topology • DNA modifying enzymes • RNA polymerase and its types • Transcription: Mechanism • Translation: Mechanism	**15**
Genomics & Proteomics • Study of organization of genomes, Genome sequencing techniques • The Human Genome Project, Applications of genomics studies • Introduction to proteomics, Metabolic pathways • Post-translational Modification • Protein–Protein Interactions • Applications of proteomics studies	**15**
Molecular Biology techniques • Centrifugation and ultra-centrifugation • Gel electrophoresis • SEM and TEM • TLC, HPTLC • HPLC • pH and pOH	**15**
Total	**90**

PGDBI 102: Advances in Bioinformatics

Topics	Lectures allotted (in hrs.)
Bioinformatics Software • Study of Nucleic acid tools: Crustal W, ORF Finder, tools at NCBI,CFSSP • Study of Protein tools: ExPaSy, tools at EBI, ProtParam, Crustal -Omega	**08**
Biological databases Concept and classification of biological databases • Nucleic acid sequence databases: GenBank, EMBL, DDBJ • Protein sequence databases: SwissProt, PIR, PDB • EXPASY, SRS, ENTREZ	**12**

Sequence alignments
• Concept of single and multiple sequence alignment
• Sequence alignment methods
  • Global and Local Alignment
  • Multiple Sequence Alignment
• Sequence alignment algorithms
  • Smith-Waterman algorithm
  • Needelman-Wunsch Algorithm
• Web-based sequence alignment tools
	15

Homology, phylogeny and evolutionary relationships • Concept of homology, similarity and identity • Phylogeny and evolutionary relationships • Methods of phylogenetic analysis • Phylogenetic trees • Tree-building methods • Use of Phylip and DAMBE in phylogenetic analysis	**10**

Topics	Lectures allotted(in hrs)
Pharma informatics • Drug discovery process • Target identification and validation • Identifying and optimization of lead compound	**12**
Analytical methods of nucleic acid and proteins • Gene prediction strategies • ORF finding methods • Protein function prediction strategies • Secondary structure prediction • 3D structure prediction of proteins	**6**
Genome maps • Types of Genome maps and their uses, • Map elements, • Types of maps: Cytogenetic, Linkage map, Transcript map, Physicalmap, Comparative map, integrated map.	**12**
Map repositories • NCBI – Entrez Human genome map viewer • NCBI – Taxonomy browser • Human genome resources at ornl.gov • OMIM – Online Mendelian Inheritance in Man	**8**
Applications in Genomics and proteomics • Genome mapping and Genome annotation • Protein expression analysis - SAGE • 2D gel electrophoresis	**7**
Total	**90**

PGDBI 103: Lab course

Sr. No.	Lab work	Periods allotted (In hrs.)
1.	Study of online resources using Sequence Retrieval System: ENTREZ	**6**
2.	Study of online protein resources: PDB and PIR.	**4**
3.	Multiple sequence alignment using Clustal Omega.	**8**
4.	Protein sequence download and visualization using RsMol and SPDBV	**4**
5.	Prediction of possible ORF using NCBI ORF finder.	**4**
6.	Calculate physical, chemical parameters for proteins using ProtParam.	**8**
7.	Study of Global and local sequence alignments	**4**
8.	Study of Blast Tool At Ncbi i. Use Blast in to identify the gene, the source organism and analysisof BLAST result. ii. Identification of protein sequence by BLAST p. iii. Finding PCR primers specific for template DNA using NCBI's Primer BLAST.	**8** **8** **6**
9.	Study of services at EBI i. Ensemble ii. EBI metagenomics iii. Gene Wise	**6** **6** **8**
10.	Study of UniProt tool of EBI	**8**
11.	Studying resources for molecular phylogeny. i. Study of MEGA5 software. ii. Study of sequence editor software: BioEdit. iii. Visualizing phylogenetic tree using FigTree / TreeView.	**6** **4** **4**
12.	Studying molecular phylogeny using tool DAMBE.	**8**
13.	Explore study and use proteomics resources available at ExPaSy.	**6**
14.	Predicting possible genes in DNA sequence using NCBI-GLIMMER.	**4**
	Total	**120**

References:

1. Arora M. P. Sandhu G.S. “Genetics”
2. Claverie J. M. & Notredame C. “Bioinformatics: A beginner’s guide”
3. Bioinformatics – Concepts, Skills, Applications”. S.C. Rastogi, Namita Mendiratta,Parag Rastogi.
4. Cell Biology, Genetics, Molecular Biology, Evolution and Ecology by P. S. Verma and V. K. Agrawal, S. Chand Publ.
5. Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins. Andréa’s D. Baxevanis, B.F. Francis Ouellette.
6. Biological Sequence Analysis: Probabilistic Models of Proteins and NucleicAcids. Richard Durbin et al.
7. Computer Methods for Macromolecular Sequence Analysis. Doolittle R.F. (Ed.)(Methods in Enzymology, VOl. 266).
8. Shanmughavel, P. 2005. Principles of Bioinformatics, Pointer Publishers, Jaipur,India.
9. DNA and Protein Sequence Analysis. A Practical approach. Bishop M.J.Rawlings C.J. (Eds.).
10. Introduction to Bioinformatics. Teresa. K. Atwood and David J. Parry-Smith.
11. An introduction to bioinformatics by Vikramsingh, Narosa Publ.
12. Bioinformatics - Computational Molecular Biology by Zvia Agur.
13. Basic bioinformatics by Ignacimuthu.

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce & Science College, Shirpur

(Affiliated to the K.B.C. North Maharashtra University, Jalgaon)

STATEMENT OF MARKS

Post Graduate Diploma in Bioinformatics (CGPA Pattern)

Examination held in May 2022

Student Name : Rawal Nikita Rampalsing

College Name : R. C. Patel Arts Commerce and Science College, Shirpur

Seat Number : 223107

Exam Centre : Shirpur (240051)

Paper Code	Paper Name	AM	Credits (Max.)	Marks Obtained
PGDBI 101	Foundation in Life Sciences	TH	6.0	85
PGDBI 102	Advances in Bioinformatics	TH	6.0	83
PGDBI 103	Lab Course	PR	8.0	88

Result: **Pass**

CGPA: **5.45**

Grade: **A**

R.C.PATEL ARTS,COMM.AND SCI.COLLEGE SHIRPUR

Co-ordinator

Abbreviations:

AM: Assessment Methods, **P:** Pass, **F:** Fail, **AB:** Absent, **RR:** Result Reserved, **TH:** Theory, **PR:** Practical, **O:** Outstanding Grade

Lecture attendance
PG Diploma in Bioinformatics

2021-22

Name of Candidate	7-1-2021	8-1-2021	9-1-2021	10-1-2021	13-1-2021	18-1-2021	20-1-2021	25-1-2021	27-1-2021	30-1-2021	2-8-2021	17-8-2021	17-8-2021	25-8-2021	3-9-2021	1-9-2021	15-9-2021	25-9-2021	6-10-2021	8-10-2021	15-10-2021	20-10-2021	2-11-2021	11-11-2021	22-11-2021	28-11-2021	2-12-2021	7-12-2021	17-12/2021	22-12/2021	3-1-2022	15-1-2022	17-1-2022	27-1-22	30-1-22	5-2-2022	7-2-22	15-2-22	17-2-22	21-2-22	5-3-2022	7-3-2022	12-3-22	21-3-22	27-3-22	29-3-22
Patil Jayashree Ashok	P	A	A	P	P	P	P	A	P	P	P	A	P	P	P	P	A	P	P	P	P	P	P	A	A	P	A	P	P	P	P	A	P	P	P	P	P	P	P	P	A	A	A	P	P	P
Jadhav Dipak Sukhlal	P	A	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Wagh Sachin Nanabhau	A	P	P	P	A	A	A	A	P	P	P	P	P	P	P	A	P	P	P	P	P	A	P	A	P	P	P	P	A	P	P	A	P	P	P	P	P	P	P	P	P	P	A	P	P	P
Mahajan Rohit Vijay	P	P	P	P	A	A	A	P	P	A	P	P	P	P	P	P	A	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	A	A	A	P	P	P	A	A	P
Suryawanshi Jayesh Santosh	P	A	A	P	P	P	A	A	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	A	P	P	P
Patil Jayashree Gulabrao	A	P	P	P	P	P	P	A	A	P	P	P	P	P	P	A	A	P	A	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	A	A	P	P
Rawal Nikita Rampalsing	P	A	A	P	P	P	A	P	A	P	P	P	A	P	P	P	P	P	P	A	P	A	P	P	P	A	P	P	A	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	A
Patale Kalpesha Vasudev	P	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	A	P	P	A	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	A	A	P	P	P	P
Suryawanshi Harshal Sharad	P	P	P	P	A	A	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	A	P	P	P	P	P	A	A	P	P	P	P	P	P	P	P	P	P	P	A	A	A	P	P	P
Borse Kajal Hiralal	P	P	P	P	A	A	P	P	A	A	A	A	P	P	P	P	P	P	A	P	P	A	P	P	P	P	P	A	A	A	A	P	A	P	A	P	P		P	P	P	P	P	P	P	P
Bawa Kalyani Nareshgir	P	P	P	P	P	P	P	A	A	A	A	A	A	P	P	P	P	P	A	P	P	A	A	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	A	P	A	P	A	P

K.B.C. North Maharashtra University, Jalgaon

Ordinance 181

College

R. C. Patel Arts, Commerce and Science College, Shirpur

Name of career oriented course

Post Graduate Diploma in Microbial Biotechnology

Faculty

SCIENCE

Academic year

(2021-22)

North Maharashtra University, Jalgaon
Ordinance 181

College name	:	**R. C. Patel Arts, Science and Commerce College, Shirpur**
Title of the course	:	**Post graduate diploma in Microbial Biotechnology**
Aims/Objective of the course	:	**To make students acquaint about methods and techniques of industrial biotechnology and their applications**
Duration of the course	:	**1 Year**
Fees structure	:	**Rs. 1500/-**
Course structure	:	**Paper I: Essentials in Life Sciences** **Paper II: Advances in Industrial technology** **Paper III: Lab course**
Eligibility for admission	:	**B.Sc. (Science) as per ordinance 181**

Skeleton of course:

Sr. No.	Paper	Name of subject	Theory / Practical	Teaching hours	Maximum marks allotted			Passing			Credit
					External	Internal	Total	External	Internal	Total	
13.	Paper I	Essentials in Life Sciences	Theory	90	60	40	100	24	16	40	6
14.	Paper II	Advances in Industrial Technology	Theory	90	60	40	100	24	16	40	6
15.	Paper III	Lab course	Practical	120	60	40	100	24	16	40	8

Minimum staff : 03

Mode of examination : Internal and external

(Theory and Practical)

Detail syllabus : Syllabus copy attached

PGDMBT 101: Essentials in Life Sciences

Topics	Periods allotted
Unit 1: Foundation in Microbiology:	
Microbial cells: Structure and organization, Microbial diversity with representative examples. Microbiology in the environment: water, sewage and air, environmental pollution and biodegradation.	**15**
Unit 2: Microbial physiology and biochemistry:	
Microbial nutrition, Aerobic and anaerobic growth, Factors affecting on growth, growth kinetics, Biomolecules (Carbohydrates, Nucleic acids, Lipids), Glycolysis, Gluconeogenesis.	**10**
Unit 3: Medical microbiology and immunology:	
Introduction to Medical Microbiology, Microbiology in human diseases, Introduction to immune system, Immunity, basic immunological techniques, immunodiagnostic methods with examples of applications, monoclonal antibodies.	**15**
Unit 4: Fundamental of Molecular Biology:	
Structure and properties of DNA/RNA, replication, DNA mutations and repair, transcription, mRNA processing, translation, gene regulation: lac operon.	**15**
Unit 5: Techniques in Molecular Biology:	
Hybridization techniques, DNA Microarray, Nucleic acid blotting techniques (Southern, Northern, Western), Electrophoresis: gel and SDS-PAGE	**15**
Unit 6: Techniques in genetic Engineering:	
Concept & Methods in microbial genetics: mutagenesis and screening, strain improvement, transgenic plants and animals. Principles of cloning, Introduction to cloning vectors, Construction of genomic and cDNA libraries, PCR and DNA-based diagnostic techniques, DNA sequencing, Site directed mutagenesis, Protein structure - function relationship.	**20**
Total	**90**

PGDMBT 102: Advances in Industrial Technology

Topics	Periods Allotted
Unit 1: Bioprocess technology:	
Fundamentals in Bioprocessing, Raw materials for bioprocessing, comparison of chemical and biochemical processing based on energetics and environmental issues. Development of inocula, kinetics of enzymatic and microbial processes, Optimization studies, sterilization of media, air and equipment, modes of cell cultivation, general principles of bioreactor design and their operation.	**15**
Unit 2: Downstream processing:	
Introduction to Downstream processing. Separation and purification techniques, quality assurance testing, representative examples of microbial products, vaccines and vaccine development, immobilization of cells and enzymes: principles, methodology and applications, disintegration of cells, separation of solid and liquid phases, isolation and purification techniques for proteins and other products. eg., precipitation, adsorption, chromatographic separations, bio-affinity based methods.	**30**
Unit 3: Biosafety and environmental monitoring:	
Biosafety: Introduction, Concept, Significance & Technology Environmental monitoring: Introduction, Concept, Significance & Technology Intellectual Property Rights in Biotechnology.	**10**
Unit 4: Quality Control:	
Antimicrobial effectiveness Testing, Pyrogen Test, Sterility Test, Ames test, Microbial Assay (Antibiotic and Vitamins), Phenol Coefficient: (RW Test and Chick Martin Test), Minimum Inhibitory Concentration (MIC) (Tube Dilution and Gradient Plate Method), Kirby-Bauer Antibiotic Sensitivity Test and Synergistic effect of antibiotics, Microbial Limit Test (analysis of water, raw material, finished product, packaging material and Excipients) Environmental monitoring and area monitoring	**25**
Unit 5: Quality Assurance:	
Calibration and Validation, Pharmaceutical audits, GMP and CGMP, FDA, WHO and other agencies Principles of QA, Reporting and documentation, Market surveillance and monitoring.	**10**
Total periods	**90**

PGDMBT 103: Lab course

Lab course	Periods Allotted
1. Microbial Limit Test (analysis of water, raw material, finished product, packaging material, Excipients)	**8**
2. Sterility Test of Pharmaceutical Products	**8**
3. Growth Promotion test of Media	**8**
4. Antibiotic Assay (Turbid metric)	**8**
5. Vitamin Bioassay (Diffusion method)	**8**
6. Kirby-Bauer Antibiotic Sensitivity Test	**6**
7. Phenol Coefficient tests	**4**
8. Environmental monitoring, area monitoring	**12**
9. Minimum Inhibitory Concentration (Tube dilution Method)	**10**
10. Calibration and Validation	**6**
11. Pharmaceutical audits, GMP and CGMP, FDA, WHO and other agencies	**8**
12. Principles of QA	**4**
13. Reporting and documentation	**4**
14. Market surveillance and monitoring.	**6**
15. Project/Industrial training/Field work	**20**
Total	**120**

References:

1. Indian Pharmacoepia, 2010.
2. British Pharmacoepia, 2009.
3. United state Pharmacoepia, 2007.
4. Industrial Microbiology: Whitaker and Hall.
5. Microbial Biotechnology: Moorey Mu Young.
6. Biotechnology: Expanding Horizons: B.D. Singh.
7. Quality assurance in Microbiiology: Ramkaran. M.
8. Biochemistry: Lubert Stryer.
9. Recombinant DNA: J.D. Watson.
10. Gene Biotechnology, S. N. Jogdand
11. Biochemistry, Lodish, IVth Edn.
12. Process Biotechnology fundamentals, IInd Edn, Mukhopadhyay S N (2004)
13. Intellectual property rights on biotechnology, Singh K C. BCIL, New Delhi
14. Biotechnology and genomics, Gupta P K, Rastogi publications, India.

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce & Science College, Shirpur

(Affiliated to the K.B.C. North Maharashtra University, Jalgaon)

STATEMENT OF MARKS

Post Graduate Diploma in Microbial Biotechnology (CGPA Pattern)

Examination held in May 2022

Student Name : Kulkarni Mayuri Mahendra

College Name : R. C. Patel Arts Commerce and Science College, Shirpur

Seat Number : 223211

Exam Centre : Shirpur (240051)

Paper Code	Paper Name	AM	Credits (Max.)	Marks Obtained
PGDMBT 101	Essentials in Life Sciences	TH	6.0	91
PGDMBT 102	Advances in Industrial Technology	TH	6.0	92
PGDMBT 103	Lab Course	PR	8.0	93

Result: **Pass**

CGPA: **6.30**

Grade: **O**

R.C.PATEL ARTS,COMM.AND SCI.COLLEGE SHIRPUR

Co-ordinator

Abbreviations:

AM: Assessment Methods, **P:** Pass, **F:** Fail, **AB:** Absent, **RR:** Result Reserved, **TH:** Theory, **PR:** Practical, **O:** Outstanding Grade

॥ अंतरी पेटवू ज्ञानज्योत ॥

Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

1990
'A' Grade
NAAC Re-Accredited
(3rd Cycle)

Jalgaon (M.S.), INDIA

We, the Board of Deans, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

&

The Principal

R.C. Patel Arts, commerce and science college, shirpur

do, hereby, certify that,

Mr./~~Ms.~~ Shelake Mitesh Arjun

has pursued a course of study approved by the Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon and has passed the requisite examination held in June 2022 *with* A *grade and found duly qualified for the award of*

P. G. Diploma in

Microbial Biotechnology

Which is conferred on him / her on October 1st, 2022

In testimony whereof is set the seal and signatures of authorities.

Principal

R.C. Patel Arts, Comm. & Sci. College Shirpur

Dean

D Nº 000751

R.C.Patel Art's, Commerce & science College, Shirpur

ADC- 101- Polymers in Textile Industries

Paper- I THEORY

Contact Hrs- 90

1. **Fiber:** **(10Hrs)**

Fiber forming polymers and their requirement, chemistry of natural & synthetic fibrous polymer classification, requirements for fiber forming polymers, essential & desirable properties of textile fibers, essential properties, classification of fibers .

2. **Measurement of physical characteristics of cotton :** **(20 Hrs)**

viz. length, fineness, maturity, bundle strength, colour and foreign matter including principle, construction, operation, and calibration of the equipment in common use.

3. **Mechanical properties of fibres** **(20 Hrs)**

relation between structure and mechanical properties of fibres, Measurement of physical properties of man-made fibres i.e. length, denier, strength, elongation, modulus, work of rupture, crimp, spin finish, fibre quality index etc.

4. **Non-fibrous Polymers:** **(20 Hrs)**

Introduction, chemistry of Gum, Starch, Proteins, enzymes.

5. **Green chemistry:** **(10 Hrs)**

Introduction, importance & need, environmentally benign approaches in chemistry.

6. Preparation of Textile Industrial visit report. **(10 Hrs)**

REFERENCE BOOKS:

1. Polymer science- V. R. Gowarikar
2. Physical chemistry by Atkins.
3. Technology & Dyeing by Shenai.
4. Textbook of Polymer Science, Bill Meyer F.W., John Wiley and Sons, New York, 3rd Edition, 1984.

R. C. Patel Art's, Commerce & science College, Shirpur

ADC- 102- Chemistry in Textile Industries

Paper- I I THEORY

Contact Hrs- 90

1. **Surface active agents-** **(20 Hrs)**

   Definition, surface activity, wetting, leveling & dispersing, types, characteristics & textile application, theory of degeneracy.

2. **Oils:** **(20 Hrs)**

   Classification, sulphation, Saponification reaction, mineral oils, waxes, furnace gaseous fuels from petroleum & coal, LPG & CNG.

3. **Chemistry of Dyes & Colour Chemistry**: **(15 Hrs)**

   Fractional distillation of coal tar and its products, and their use in textile industry (3), Isolation of Xylene, Benzene, Toluene, Naphthalene and Anthracene,

4. **Unit organic process/operation**: **(20 Hrs)**

   sulphonation, nitration, amination and hydroxy compound

5. **Preparation of Textile visit report:** **(15 Hrs)**

TEXT/REFERENCE BOOKS:

1. Textile Fibres, Shenai V.A., Vol-1, Sevak Publications, Bombay, 3rd edition, 1991.
2. Textbook of chemistry for PUC (Vol- I & II)
3. Dyeing & chemical technology of Textile fibres- E. R. Trotman
4. Physical chemistry by Atkins.
5. Analysis of Chemicals- N. F. Desai.

R.C.Patel Art's, Commerce & science College, Shirpur

ADC- 103- Practical Course

Paper- III **LAB COURSE**

1. Dyeing of cotton hand with hot brand reactive dye.
2. Dyeing of cotton hand with vinyl sulphone reactive dye.
3. Dyeing of cotton hand with vat colors.
4. Dyeing of cotton hand with sulphur black.
5. Dyeing of cotton hand with naphthol color.
6. Determination of strength of formaldehyde solution.
7. Binary organic mixture.
8. Binary organic mixture.
9. Binary organic mixture.
10. Working on Microsoft Word.
11. Working on Chemdraw .
12. Working on Structure Analysis.
13. Introduction of Internet
14. To determine % of Acetic acid.
15. To determine solid content of dye fixing agents.
16. To determine solid & active content of softeners.

For office use only Application for the course – ADC Acad. Year: 2021-22

R. C. Patel Educational Trust's

R.C. Patel Arts, Commerce and Science College

Shirpur, Dist – Dhule, M.S. 425 405
(NAAC Accredited Institute)

To,
The Principal
R. C. Patel Arts, Commerce and Science College,
Shirpur

Sir,

I wish to get admitted to as a student for the Advanced Diploma Course in Textile Chemistry

Lambole pinal Mahendra
(Name and Signature of Candidate)

PARTICULARS OF CANDIDATE

1. Name in full (Surname first) : Lambole (Surname) pinal (Name) Mahendra. (Father's/Husband's Name)
2. Address for correspondence : Nimzari
3. Email Id : lambole12pinal@gmail.com
4. Ph.No./Mobile No. : 9022191836
5. Father's/Husband's name with address : Lambole mahendra Nana.
6. Sex (Male/Female) : Female
7. Nationality : Indian
8. Date of birth (dd/mm/yyyy) : 12/10/1998
9. Put the tick (✓) mark(s) in the appropriate box(es) applicable in your case.

SC	ST	DT	NT-1	NT-2	NT-3	SBC	OBC	OPEN	P.H.	D.S.P
							✓			

P.H. : Physically handicapped ; D.S.P. : Ward of Defense Service Person

List of Admitted Students for **"Advanced Diploma Course in Textile Chemistry"**

For the Academic Year 2021 -22

Name of College: R. C. P. A.C. S. College, Shirpur

Name of Career Oriented Course: Advanced Diploma Course in Textile Chemistry

Academic Year: 2021- 2022

Intake Capacity: 60

Sr. No.	Name of Student	Gender	Category	Education Qualification	Year of passing	Presently admitted	Remark (if any)
1.	Chaudhari Sunaina Ramkrushna	Female	OBC	DTC*	2021	T. Y. B. Sc.	
2.	Lambole Pinal Mahendra	Female	ST	DTC*	2021	T. Y. B. Sc.	
3.	Maniyar Firozkhan Sikandarkhan	Male	Open	DTC*	2021	T. Y. B. Sc.	
4.	Patil Dipraj Vishwas	Male	OBC	DTC*	2021	T. Y. B. Sc.	
5.	Patil Tejas Uddhav	Male	OBC	DTC*	2021	T. Y. B. Sc.	
6.	Rajput Priyanka Komalsing	Female	OBC	DTC*	2021	T. Y. B. Sc.	
7.	Patil Gaurav Dilip	Male	OBC	DTC*	2021	T. Y. B. Sc.	

*DTC = Diploma Course in Textile Chemistry

Certificate

This is to certify that the document regarding educational qualifications of the above students have been verified and found correct. The students mentioned in the list are eligible for the admission to the above mentioned course as per University Ordinance-181.

Co-ordinator

Mr. Kantilal A. Pawara

Principal

Dr. D. R. Patil

R. C. Patel. A. C. S. College, Shirpur

Advanced Diploma Course in Textile Chemistry 2021-2022

Attendance shit

Sr. No	Name of Students	5/11/22	6/11/22	7/11/22	8/11/22	12/11/22	13/11/22	14/11/22	17/11/22	19/11/22	20/11/22	21/11/22	22/11/22	22/11/22	28/11/22	29/11/22
	Chaudhari Sunaina Ramkrushna	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
	Lambole Pinal Mahendra	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
	Maniyar Firozkhan Sikandarkhan	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
	Patil Dipraj Vishwas	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
	Patil Tejas Uddhav	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
	Rajput Priyanka Komalsing	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
	Patil Gaurav Dilip	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p

Sr.No.	Name of Students	2/12/22	5/12/22	6/12/22	9/12/22	10/12/22	11/12/22	12/12/22	16/12/22	19/12/22	18/12/22	19/12/22	23/12/22	24/12/22	25/12/22
1.	Chaudhari Sunaina Ramkrushna	p	p	p	p	p	p	p	p	p	p	p	p	p	p
2.	Lambole Pinal Mahendra	p	p	p	p	p	p	p	p	p	p	p	p	p	p
3.	Maniyar Firozkhan Sikandarkhan	p	p	p	p	p	p	p	p	p	p	p	p	p	p
4.	Patil Dipraj Vishwas	p	p	p	p	p	p	p	p	p	p	p	p	p	p
5.	Patil Tejas Uddhav	p	p	p	p	p	p	p	p	p	p	p	p	p	p
6.	Rajput Priyanka Komalsing	p	p	p	p	p	p	p	p	p	p	p	p	p	p
7.	Patil Gaurav Dilip	p	p	p	p	p	p	p	p	p	p	p	p	p	p

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce & Science College, Shirpur

(Affiliated to the K.B.C. North Maharashtra University, Jalgaon)

STATEMENT OF MARKS

Advance Diploma in Textile Chemistry

Examination Held in May -2022

Student Name: **Patil Dipraj Vishwas**

College Name: **R.C.Patel Arts Commerce and Science College, Shirpur**

Seat Number: **ADC -04**

Paper Code	Paper Name	AM	Credit (Max.)	Marks Obtained
ADC-101	Polymers in Textile industries	TH	6	90
ADC-102	Chemistry in Textile industries	TH	6	92
ADC-103	Lab Course	PR	8	92

Result: **Pass** CGPA: **6.10** Grade: **O**

R.C.PATEL ARTS,COMM.AND SCI.COLLEGE SHIRPUR

Co-ordinator

Abbreviations:

AM: Assessment Methods, **P:** Pass, **F:** Fail, **AB:** Absent, **RR:** Result Reserved, **TH:** Theory, **PR:** Practical, **O:** Outstanding Grade

॥ अंतरी पेटवू ज्ञानज्योत ॥

Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

1990
'A' Grade
NAAC Re-Accredited
(3rd Cycle)

Jalgaon (M.S.), INDIA

We, the Board of Deans, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

&

The Principal

R.C. patel A.C.S. College, shirpur.

do, hereby, certify that,

Mr./Ms. Patil Prashant krishna.

has pursued a course of study approved by the Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon and has passed the requisite examination held in Oct - 2021 with A grade and found duly qualified for the award of

Advanced Diploma in

Textile Chemistry

Which is conferred on him / her on ~~October~~ Dec 1st, 2021

In testimony whereof is set the seal and signatures of authorities.

Principal.

R.C. Patel Arts, Comm. & Sci. College Shirpur Dist. Dhule

Dean

C Nº 000145

K.B.C. North Maharashtra University, Jalgaon

Ordinance 181

College

R. C. Patel Arts, Commerce and Science College, Shirpur

Certificate course in

Commerce for Textile Industry

Faculty

SCIENCE

Academic year

(2021-22)

Syllabus

Level of diploma	Graduate diploma
Eligibility	As per ordinance 181
Duration	1 Year
Total Credits	20 Credits

Course Structure

Paper No.	Old Subject Name	New Subject Name	Credits
CT 101	**Fundamental of Computer**	**Basics of Computer**	6 Credits
CT 102	**Communicative English**	**Business Communication**	6 Credits
CT 103	**Industrial visit Project viva**	**Project**	8 Credits

CT101 – Basic Computing

Topics	Lectures Allotted (in hrs.)
1.Introduction to computer system Definition of computer, History of computers Block Diagram of Computer, Types of computer, Neumann machine Input Devices: Keyboard, Mouse, Scanner 1.4 Output Devices: Monitor, Printer, Plotter Memory: Primary Memory, RAM, ROM, EPROM, PROM, Secondary Memory, Hard Disk, Pen Drive Definition: Data, Information, Algorithm, Flowchart, Program, Hardware, And Software: System Software, Application, Software, Firmware, Interpreter, compiler Programming Languages: High level, Middle Level, Low Level	**22**
2.Introduction CPU parts Motherboard, SMPS,USB device	**10**
3.Operating system WINDOWS 7, Ubuntu, Linux	**8**
4.Internet and networking LAN, WAN, MAN, WWW and MODEM	**10**
5.Applications Word Processor, spreadsheets, database management software, Multimedia development software (Internet)	**10**
6.Introduction to flow chart, Define symbols of flowchart, Examples	**10**
7. Computer Virus Computer Virus: Indication of virus infection Types of Viruses: Boot Sector Virus, Programs Virus, Macro Virus, Multipartite Virus, Polymorphic Virus, Worms, Malware: Spyware, Adware, Anti-Virus Computer Ethics: Hacking, Software Piracy, Spamming, Phishing	**10**
8.Windows Operating Environment Features of MS – Windows, Control Panel, Taskbar, Desktop, Windows Application, Icons, Windows Accessories, Notepad, Paintbrush.	**10**
Total	**90**

CT 103: Project

(Total lecture allotted 120)

Visit and Study any corporate office/department (textile industry) and Preparestudy report on it. Group size is maximum 2 students

Note-The student has to write a report based on the actual work undertaken during the industrial visit at the specific selected enterprise/ organization or sub system and get it certified by the concerned teacher that the Project report has been satisfactorily completed and submit TWO typed copies of the same to the co-coordinator of the certificate course.

Suggested Reading

1. Fundamentals of computers :V. Raja Raman
2. Computer Fundaments: P.K. Sinha
3. Computer Fundamentals (Architecture and Organization) -B. Ram
4. Microsoft Office 2000 – Vipra Computers
5. Digital Fundamentals - Floyd
6. Digital Principles and Applications - A. P. Malvina & D.P.Leach (TMH)
7. Communication skills : C. B. Gupta
8. Business English :Department of English University of Delhi

List of Admitted Students for **"Certificate Course in Commerce for Textile Industry"**

For the Academic Year 2021-22

Name of College: **R. C. Patel Arts Commerce and Science College, Shirpur**
Name of Career oriented Course: **Certificate Course in Commerce for Textile Industry**
Academic Year: **2021-2022**
Intake Capacity: **60**

R.C.PATEL ARTS,COMM.AND SCIS.COLLEGE * SHIRPUR *

Sr. No.	Name of Student	Gender	Category	Education Qualification	Year of passing	Presently admitted	Remark (if any)
1.	Dhole Pradip Prakash	Male	OBC	12th Sci.	2021	F.Y. BSc	
2.	Shirsath Rohit Kishor	Male	OBC	12th Sci.	2021	F.Y. BSc	
3.	Shirsath Uday Shyam	Male	OBC	12th Sci.	2021	F.Y. BSc	
4.	Bhavsar Lalit Mahendra	Male	OBC	12th Sci.	2021	F.Y. BSc	
5.	Girase Swapnil Bhagvansing	Male	OBC	12th Sci.	2021	F.Y. BSc	
6.	Mahajan Maheshwari Shamkant	Female	OBC	12th Sci.	2021	F.Y. BSc	
7.	Mahajan Pallavi Namdev	Female	OBC	12th Sci.	2021	F.Y. BSc	
8.	Girase Sunaina Ajitsing	Female	OBC	12th Sci.	2021	F.Y. BSc	
9.	Koli Dipali Ramchandra	Female	SBC	12th Sci.	2021	F.Y. BSc	

	Mali Ashwini Prakash	Female	OBC	12th Sci.	2021	F.Y. BSc	
11.	Pawar Sachin Adhar	Male	OBC	12th Sci.	2021	F.Y. BSc	
12.	Marathe Akshay Bhausaheb	Male	OBC	12th Sci.	2021	F.Y. BSc	
13.	Rajput Prachi Dilipsing	Female	Open	12th Sci.	2021	F.Y. BSc	
14.	Mali Jayshree Shailendra	Female	OBC	12th Sci.	2021	F.Y. BSc	
15.	Mali Punam Tukaram	Female	OBC	12th Sci.	2021	F.Y. BSc	
16.	Mali Namrata Namdeo	Female	OBC	12th Sci.	2021	F.Y. BSc	
17.	Patil Sneha Sanjay	Female	OBC	12th Sci.	2021	F.Y. BSc	
18.	Patil Mohini Vishvas	Female	OBC	12th Sci.	2021	F.Y. BSc	
19.	Thakare Priyanka Mahendra	Female	OBC	12th Sci.	2021	F.Y. BSc	
20.	Patil Tejuswani Ravindra	Female	OBC	12th Sci.	2021	F.Y. BSc	

	Pawar Rohit Ashok	Male	OBC	12th Sci.	2021	F.Y. BSc	
22.	Koli Sanjana Prakash	Female	SBC	12th Sci.	2021	F.Y. BSc	
23.	Khaire Roshni Chandrakant	Female	SC	12th Sci.	2021	F.Y. BSc	
24.	Patil Vaibhavi Sunil	Female	OBC	12th Sci.	2021	F.Y. BSc	
25.	Badgujar Ashwini Shailendra	Female	OBC	12th Sci.	2021	F.Y. BSc	
26.	Patil Aakansha Vijay	Female	OBC	12th Sci.	2021	F.Y. BSc	
27.	Shinde Mrunal Sunil	Female	OBC	12th Sci.	2021	F.Y. BSc	
28.	Chaudhari Tejashri Shantaram	Female	OBC	12th Sci.	2021	F.Y. BSc	
29.	Patil Roshni Aaba	Female	OBC	12th Sci.	2021	F.Y. BSc	

Certificate

This is to certify that the document regarding educational qualifications of the above students have been verified and found correct. The students mentioned in the list are eligible for the admission to the above mentioned course as per University Ordinance-181.

28/9/21

Coordinator

Mr.Bhanudas Suresh Panchabhai

(9420404579)

Principal

Dr. D. R. Patil

R.C.PATEL ARTS,COMM.AND SCI.COLLEGE * SHIRPUR *

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce & Science College, Shirpur

(Affiliated to the K.B.C. North Maharashtra University, Jalgaon)

STATEMENT OF MARKS

Certificate in Commerce for Textile Industry (CGPA Pattern)

Examination held in May 2022

Student Name : Patil Krunal Santosh

College Name : R. C. Patel Arts Commerce and Science College, Shirpur

Seat Number : 902222

Exam Centre : Shirpur (240051)

Paper Code	Paper Name	AM	Credits (Max.)	Marks Obtained
CCCTI 101	Basics of Computer	TH	6.0	84
CCCTI 102	Communication English	TH	6.0	86
CCCTI 103	Lab Course	PR	8.0	91

Result: **Pass** CGPA: **5.45** Grade: **A**

R.C.PATEL ARTS,COMM.AND SCI.COLLEGE SHIRPUR

Co-ordinator

Abbreviations:

AM: Assessment Methods, **P:** Pass, **F:** Fail, **AB:** Absent, **RR:** Result Reserved, **TH:** Theory, **PR:** Practical, **O:** Outstanding Grade

R.C.Patel Arts, Commerce & Science College, Shirpur

Department of History

Certificate Course on Cultural Heritage of India

2021-2022

Aim

- ✓ Cultural Heritage is a concept which offers a bridge between the past and the future with the application of particular approaches in the present. Due to its attached values for these groups or societies, cultural heritage is maintained in the present and bestowed for the benefit of future generations.

Course Objective

- ✓ To introduce the Cultural heritage of India
- ✓ Aware the importance and legacy of caves, forts, Fairs and festivals.
- ✓ To develop the interest and skill of tourism among the Student.

Course Outcomes

- ✓ Understand the Concept of Cultural Heritage of India.
- ✓ Study the various Cultural factors which influence the rich flow of Indian Culture.
- ✓ Appreciate & Adequate the rich Cultural heritage of India.

Duration of the course

- ✓ One week

Timing of the course

- ✓ Two Houses a day.

Eligibility Criteria

- ✓ For BA/B.Sc./B.Com Student.

Criteria for completion

- ✓ The student must have attended at least 80% of the lectures and completed all assignment

Syllabus

Cultural Heritage of India

Total period:- 15 **Credits:-02**

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1 Culture Heritage: An Introduction

a Definition and meaning of culture and heritage
b Geographical features of India
c Social Consequences of Saint of India
d Characteristics of Indian Culture -
Continuity and Change, Variety and Unity, Secular Outlook. Universalism, Materialistic and Spiritualistic

2 Cultural Heritage of India

a Caves and forts in India –

Karle Caves, Bhaje Caves, Pandava Caves, Pitalkhore Caves, Kanheri Caves Raigad, Pratapgad, Sinhagad, Shivneri, Daulatabad, Janjira

b India – Festivals and Pilgrimages

Gudi Padwa, Pola, Dussehra, Diwali, Holi, Rath Festival, Navratri Festival, Bhaldev, Gulabai Festival, Kanbai Festival, Shiv Jayanti Festival, Ganesh Festival, Jyotirlinga, Ashtavinayak, Shaktipeetha, Pandharpur

c World Heritage Sites in India

Ellora Caves, Elephanta Caves, Ajanta Caves, Victorian and Art Deco Ensemble of Mumbai, Chhatrapati Shivaji Maharaj Terminus

d Tour Report

Reference Book

- Pathak, A.S. (Edi 2009) Maharashtra: Land and its People, Gazetteers Department, Government of Maharashtra, Mumbai
- Karve Iravati (1951) Marathi Lokanchi Sanskruti, Deshmukh & Company, Pune
- The Cultural Heritage of India, Ramkrishana Mission Institute of Culture (9 Vol)

Admission Form

R.C.Patel Educational Trust's

R.C.Patel Arts Commerce and Science College Shirpur, Dist-Dhule,M.S. 425405

To,
The Principal
R.C.Patel Arts, Commerce and Science College, Shirpur

Sir,

I wish to get admitted to as Students for the -

Certificate Course on Cultural Heritage of India

PERTICULAR OF CANDIDATE

1	Name in Full (Surname First)	:	Pinjari Arbaj Ashphak
2	Father/Husband Name	:	Pinjari Ashphak Aasif
3	Mother Name	:	Pinjasi Suhana Ashphak
4	Address for Correspondence	:	Shirpur
5	Mob. No.	:	8421288786
6	Email Id	:	azpinjari786@gmail.com
7	Date of Birth	:	17/9/2002
8	Place of Birth	:	Shirpur
9	Category	:	Open
10	Family Annual Income	:	50,000/-
11	Last qualified examination	:	FYBA
12	Marks obtained (out of total marks)	:	1127/1200

I hereby declare that all statements made in this application to the best of my knowledge and beliefs are true, complete and correct. I understand that in the event of any information being found fouls of incorrect, my admission is able to be cancelled.

Date 1/1/2022 Signature - Pinjari

Place Shirpur Name of Student - Pinjari Arbaj Ashphak

Year of Course 2021-2022

Course Name: - Certificate Course on Cultural Heritage of India

Student Attendance with Signature

Sr. No	Student Name	Signature of Beneficial Student						
		3/1/2022	4/1/2022	5/1/2022	6/1/2022	7/1/2022	8/1/2022	10/1/2022
1	Bhil dipak Rapu							
2	Pawara Rakesh Radheshyam							
3	Valvi Sachin mangesh							
4	Paradke Yogesh fulaji							
5	Pawara Mukesh Gendaram							
6	Pawara vikas Dekala							
7	Pawara Nileshamashya							
8	Mali Ashvini Raju							
9	Pawar vidya Raju							
10	koli Nandinee Sunil							
11	Pawar chaitaliHari							
12	Dhobi Nandanabai Dipak							
13	Pinjari Arbaj Ashphak							
14	Aagale Nandini shashi							
15	More Punita Manoj							
16	pawara Jaya Bhagiram							
17	Decre sapna sanjay							
18	Shirsale Urvashi Sanjay							
19	Bhoi Jyoti Dipak							
20	Sahare Amrapali R.							
21	Kapade Nandini D.							
22	Saner Rajashri S.							
23	pawara Kavita G.							
24	Bagle Nandani Nana							
25	Bhil Vishanu Onkar							

Dr. R.A.Chaudhari
(Co-ordinator)

Dr. D.R.Patil
(Principal)

R.C.Patel Educational Trust's

R.C.Patel Arts Commerce and Science College Shirpur, Dist-Dhule,M.S. 425405

Cultural Heritage of India

Tour Report - Toranmal Hill Station

Visits are always beautiful and fill a person's mind with joy and enthusiasm. But if that visit is educational, learning based, that provides us invaluable knowledge as well.

On 29 January 2022, the Department of History organized an educational tour to Toranmal, a hill station in Nandurbar District, Maharashtra State. Located about 110 km from Shirpur town, Toranmal is a major tourist destination in Khandesh, surrounded by natural beauty.

Toranmal is a Hill Station in the municipal council of the Nandurbar district in the Indian state of Maharashtra. One can reach through Shahada. It is a hill station located in the Satpura Range. Its Gorakhnath Temple is the site of a Yatra attended by thousands of devotees on Mahashivratri. On that occasion pilgrims walk barefoot for days from surrounding areas in the Nandurbar district but also from Maharashtra, Madhya Pradesh and Gujarat. Toranmal is the prominent hill station of Khandesh region.

Toranmal is located between latitude 21 degrees, 54 minutes N, and longitude 74 degrees, 27 minutes E and 74 degrees, 30 minutes E, at the height of 1,150 metres (3,770 ft) above mean sea level.

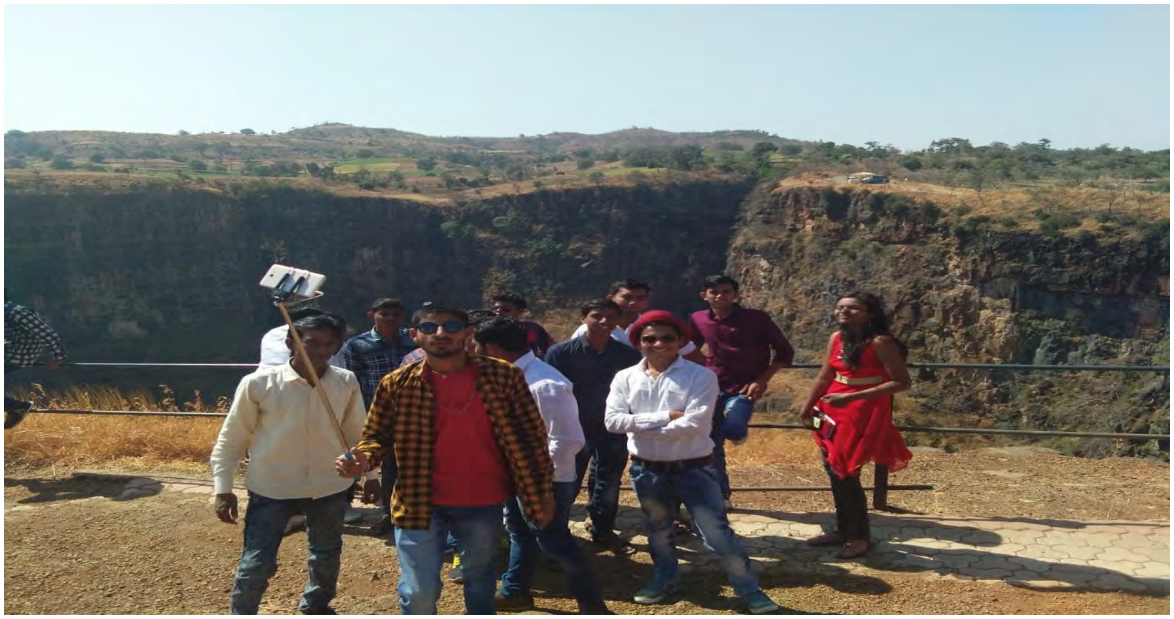
Visiting Toranmal Wildlife Sanctuary in the months of January, February, October, November, or December is an excellent idea due to the favorable weather. Every year, folks from the states of Maharashtra, Madhya Pradesh, and Gujarat come together to witness the grand celebrations at the Gorakhnath temple during the occasion of Maha Shivratri.

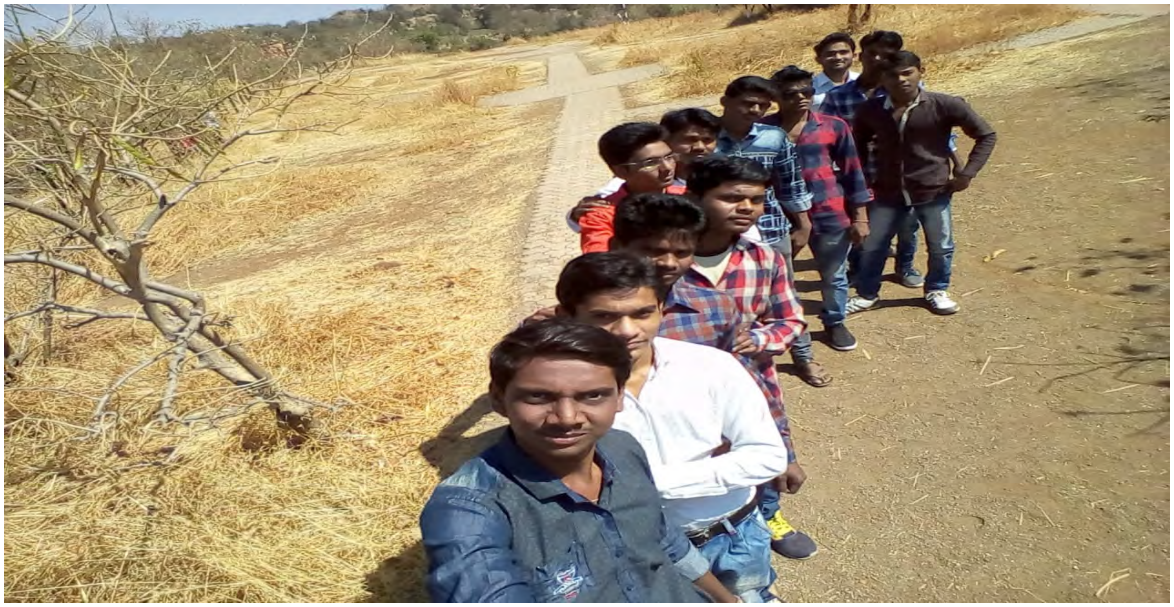
Throughout the day, photographs were taken by visiting beautiful places surrounded by Toranmal. This visit gave information about the geographical, social and folk culture of Toranmal area.

Signature - Pinjari

Name of Student - Pinjari Arbaj Ashphak

Toranmal Dist Nandurbar





R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce & Science College, Shirpur

(Affiliated to the K.B.C. North Maharashtra University, Jalgaon)

STATEMENT OF MARKS

Certificate Course Name - Cultural Heritage in India

Examination held in - May 2022

Student Name : Pinjari Arbaz Ashapak

College Name : R. C. Patel Arts Commerce and Science College, Shirpur

Seat Number : 202113

Exam Centre : Shirpur (240051)

Paper Code	Paper Name	AM	Marks (Max.)	Total Marks
CCCHI 101	Cultural Heritage in India	TH	50	42
CCCHI 102	Field Work	FW	50	49

Result: **Pass**

Marks: **91**

Grade: **O**

R.C.PATEL ARTS,COMM.AND SCI.COLLEGE SHIRPUR

Co-ordinator

Abbreviations:

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सा विद्या या विमुक्तये

R. C. Patel Arts, Commerce and Science College
Shirpur, 425405

Affiliated to KBC North Maharashtra University, Jalgaon (M.S.), India

R.C.PATEL EDUCATIONAL TRUST

CERTIFICATE

The Principal of R. C. Patel Arts, Commerce and Science College, Shirpur (M.S.) do hereby certify that, Mr. /Ms. Pinjari Arbaz Ashapak has pursued a Certificate course and passed the requisite examination held in May -2022 with O grade and found duly qualified. This certificate is awarded for successful completion of

Certificate Course

Cultural Heritage in India

Seal

Course Co-ordinator | Co-ordinator | Principal

Certificate No.: CC-01/202113/2022/A