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तमसो मा ज्योतिर्गमय

D.A.V. College Trust & Management Society, New Delhi

D. B. F. Dayanand College of Arts and Science, Solapur

NAAC-Reaccredited 'B++' Grade • ISO 9001:2015 Certified

UGC Status as a College With Potential For Excellence (CPE) • Solapur University "Best College Award-2017"

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Date: 22/12/2024

The data for QIM "5.1.3 Capacity building and skills enhancement initiatives taken by the institution include the following

1. Soft skills, 2. Language and communication skills, 3. Life skills (Yoga, physical fitness, health and hygiene), 4. ICT/computing skills"

is on the college website. Kindly access the same for consideration through the following link

<https://dayanandsolapur.org/aqar-2023-24/5.1.3.pdf>

sd/

Principal



D.B.F. Dayanand College of Arts and Science, Solapur.

Affiliated to



**Punyashlok Ahilyadevi Holkar
Solapur University, Solapur.**

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in Testing and Repairs of Electric
Appliances

Name of Course: B.Sc.-III (Sem.-V)/ M.Sc.-II (Sem.-
III)Physics

(Syllabus to be implemented from w.e.f. June 2021)



B.Sc.III (Sem.V) / M.Sc.II (Sem.III) Physics

Certificate Course in Testing and Repairs of Electric Appliances

Structure of the Course:

- Certificate Course in **Testing and Repairs of Electric Appliances** will be implemented for **B.Sc.-III (Sem.-V) / M.Sc.-II (Sem.-III) Physics**.
- There will be one theory paper of **50 marks** and one Practical paper of **50 marks**.
- The theory paper has **40 marks** for University Assessment (UA) examination and **10 marks** for College Assessment (CA) examination.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- At the end of Semester V, the practical examination will be conducted. The weightage of practical is of **30 marks** for University Assessment (UA) practical examination and **20 marks** for project and oral College Assessment (CA) examination.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.Sc.III (Sem.V) /	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
M.Sc.II (Sem.III)	Project & Oral	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**. There will be two practical's each of **3 hr** duration.
- **The Project may be on laboratory works/Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**



D.B.F.Dayanand College of Arts and Science, Solapur

Department of Physics

•Curriculum of Skill Development Certificate course•

Title: Testing and Repairs of Electric Appliances

• Syllabus •

(Total Credits: 02 and Contact Hrs. 30)

Chapter No. & Title	Contents	Contact hours
Ch. 1: Basic Introduction of Electricity	1.1 Safety Rule 1.2 Basic Introduction of Electricity 1.3 Conductors and Insulators 1.4 Types of testing 1.5 Wires and Their Types 1.6 Electrical Quantities and Their Units 1.7 Earthing 1.8 Fuses	08
Ch. 2: Electrical Appliances 1	Working Testing and repairs of 2.1 Laws of Resistance and Resistors 2.2 Electrical Circuits and Ohms Law 2.3 Effects of Electric Currents 2.4 Electric Iron 2.5 Automatic Iron 2.6 Geyser 2.7 Toaster	07
Ch. 3: Electrical Appliances 2	Working, Testing and repairs of 3.1 Magnet and Electromagnet 3.2 Electric Door Bell 3.3 Ceiling fans 3.4 Table fans 3.5 Hair dryer 3.6 Geyser- Instant and Storage Type	08
Ch. 4: Electrical Appliances 3	Study of different parts, fault finding repairs and testing of parts of 4.1 Tungsten Filament Lamp, Mercury and Sodium Vapor Lamps 4.2 Tube light 4.3 Mixer 4.4 Air cooler 4.5 Emergency light 4.6 Fridge	07



**Practical's Paper: Testing and Repairs of Electric Appliances
(Total Credit 1and Contact Hrs. 30)**

1. Prepare a test lamp and testing
2. Wire continuity testing and connection according to color coding.
3. Actual earthing making and testing.
4. Replacement of fuse.
5. Study of electric Iron and automatic iron
6. Checking of different parts of tube light and repairs
7. Study assembly and repairs of hair dryer
8. Checking and repairs of regulator and fan connections
9. Checking and repairs of fan motor winding
10. Testing of capacitor and replacement.
11. Study of different parts of mixer, fault finding and repairs
12. Fault finding repairing and testing of Air Cooler
13. Study of different parts, circuit diagram's, fault finding and repairs of Emergency light.
14. Study of different parts, repairing of toaster
15. Fault Finding, Repairing and Testing of Freeze

**Field work and project: Testing and Repairs of Electric Appliances
(Total Credits: 1)**

The Project may be on laboratory works/Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.

Reference Books

1. Modern Electronic Instrumentation and Measurement	Albert D. Helfrick and William David Cooper
2. Electrical and Electronic Measurements and Instrumentation	A K Sawhney
3. Basic electrical engineering	M. L. Anwani
4. Basic electrical engineering Vol. I, II, III, IV.	P. P. Shah
5. Basic electrical engineering Vol.I,II,III,IV.	B. L. Theraja
6. Electrical Mechanics	V. K. Mehta
7. Subodh Vidyutshatra	Trambak Waghmare

Curriculum skill

1. Supply Testing	8. Regulator Connection
2. Circuit Diagram Checking	9. Repairs of Tube Light
3. Earthing Checking	10. Mixer-Connection Testing
4. Fuse Capacity Checking	11. Learning Earthing
5. Fault Finding of Equipment	12. Fan-Repairs
6. Electric Iron Assembling	13. Air-Cooler Repairs
7. Thermostat Connection	14. Bell connection



Nature of Question Paper
Certificate course in Testing and Repairs of Electric Appliances

Time: 2 hr

Total Marks: 40

-
- Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08
- 1) -----
- a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)
- Q. 2. Answer **any four** of the followings. 08
- i)
ii)
iii)
iv)
v)
- Q. 3. Answer **any two** of the followings. 08
- i)
ii)
iii)
- Q. 4. Write note on **any two** of the following. 08
- i)
ii)
iii)
- Q. 5. Answer **any one** of the followings. 08
- i)
ii)

Head,
Department of Physics



SKILL DEVELOPMENT COURSE

SYLLABUS

Course: Skill Development Course on Alcoholic Beverages Technology

Subject: - Microbiology

Class: - M.Sc. II

Department of Microbiology

D.B.F. Dayanand College of Arts and Science, Solapur

Academic Year-2022-23



Title of the Course: Skill Development Course on Alcoholic Beverages Technology

- **Class: - M.Sc. II**
- **Subject: - Microbiology**

• **Introduction:**

This course provides an overview of Alcoholic beverages and their production through the process of fermentation. The industrial alcoholic beverages field has experienced a burst of innovations encompassing applications of novel technologies for enhancing quality and shelf-life. The course structure is basic science-centric where students learn Fermentation Technology and are taught the necessary fundamental subject for that purpose.

• **Objectives of the course:**

The objectives of Skill Development Course of Alcoholic Beverages Technology for M.Sc. II Microbiology students are:

- 1) To impart knowledge concerning the subject and its practicable applicability.
- 2) To enhance understanding of basic and advanced concepts in industrial microbiology.
- 3) To develop an awareness of various emerging areas of Fermentation Technology.
- 4) To train the students for further studies helping in their bright career in the subject.
- 5) To expose the students to different processes used in industries and research fields.
- 6) To develop their ability to apply the knowledge of microbiology in day-to-day life.
- 7) To prepare the students to accept the challenges in life sciences.
- 8) To make students skilful to work in various industries.

• **Course outcome and Advantages:**

- 1) After completing the course students will be familiarized the with necessary beverages techniques and various tools used in Industrial microbiology.
- 2) Student will have expertise in fermentation technology and will be ready to experiments in the R and D department of specific industry.
- 3) Student will be confident and having advantage and extra skills in there resume for the future career.
- 4) Fermentation Technology has tremendous job potential; students will get various job opportunities for example in winery as Wine maker and quality control officer in pharmaceutical industry.
- 5) The successful students will be able well trained to get various microbiology related job.
- 6) Trained students can opt entrepreneurship in alcohol beverages technology.



Syllabus in details

(Contact Hours: - 65 (Theory 45L + Practical 20L) (Total Marks-100)

Course Structure

Theory Papers I :- Contact Hours 45 L

Practical course I:- Contact hours 20L

Industrial Visit/Project

Examination Pattern- Total 100 Marks

1) Theory -50 Marks

2) Practical -30 Marks

3) Visit/Project- 20 Marks



Theory Course

UNIT I- Scope and classification of alcoholic beverages

08

1. Introduction to beverages, alcoholic beverages
2. Definition of beverages, alcoholic beverages
3. General classification of beverages:
 - A) Natural and synthetic beverages
 - B) Carbonated and Non-carbonated beverages
 - C) Alcoholic and Non-alcoholic beverages
 - D) Hot and Cold beverages
 - E) Stimulating and Non-stimulating beverages
 - F) Other beverages

UNIT II- Production of alcoholic beverages

20

Raw material, microorganisms used production, recovery, packaging and types:

- A) Distilled beverages: Whisky, Brandy and Vodka
- B) Undistilled beverages: Beer, Wine, Spirit

UNIT III – Wine as alcoholic beverage

07

1. Introduction to Enology- Wine, definition, and terminologies.
2. Types of wine
3. Chemical composition of Wine
4. Viticulture: Introduction to viticulture, definition, and terminologies.
5. Wine producing regions of the World and different practices of winemaking and viticulture.

UNIT – IV Health importance and defects of beverages

05

- A) Health importance
- B) Defects of beverages

UNIT – IV Occupations and professions

05

- A) Certification needed for industries
- B) Opportunities in alcoholic beverages.



Practical Course

Alcoholic Beverage Technology

20

1. Screening of microorganisms involved in alcoholic beverage production.
2. Vital staining of yeast cultures with Methylene blue.
3. Preparation and sterilization of Inoculum medium.
4. Preparation and sterilization of Fermentation medium.
5. Production of wine using grapes/ fruits/ jiggery.
6. Determination of total yeast count microscopically during fermentation using cell counting chamber.
7. Estimation of total sugar after fermentation by DNSA method.
8. Estimation of alcohol from fermented broth using $K_2Cr_2O_7$ method.
9. Alcohol determination by specific gravity.
10. Determination of tannins in wine.
11. Principle and working of UV- Vis Spectrophotometer.





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Name of Faculty : Humanities

(Choice Based Credit System)

Name of Course:

Certificate course in Ayurved Paricharak

Sanskrit - B.A.-III (Sem.-V)

(Syllabus w.e.f. June 2021)



SYLLABUS FOR

Name of Course: B.A.-III (Sem.-V) Certificate course in Ayurved Paricharak

Structure of the Course:

- Certificate Course in Ayurved Paricharak will be implemented for **B.A.-III (Sem.-V)**
- There will be one theory paper of **40 marks** and Practical of **60 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination, **10 marks** for internal practical examination and **20 marks** for project .

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.A.-III (Sem.-V) /	Theory	20	40	00	40	1
	Practical	30	30	10	40	2
	Project	10	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**. There will be two practical's each of **3.00 hr** duration.
- Theory paper has **40 marks** for examination.
- There will be **10 marks** for internal practical exam.
- **The Project may be on Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**



Syllabus for Theory Paper

(Total Credits: 01 and Contact Hrs. 20)

Part 1 - आयुर्वेद (Contact Hours 10)

Unit 1 - आयुर्वेद - परिचयः

- आयुर्वेद व्याख्या
- प्रयोजन
- सिद्धान्त
- त्रिदोष
- गुण
- व्याधि
- चिकित्सा
- धातु
- प्रकृति
- चतुष्पाद
- शरीर रचना
- स्नायु रचना
- अस्थि रचना
- अवयव
- ज्ञानेन्द्रिये
- मणका
- संधि

Unit 2 - दिनचर्या, ऋतुचर्या

- उत्थापन
- दंतधावन
- अभ्यंग
- व्यायाम
- ६ ऋतु

Unit 3 - आहार

- मात्रा
- काल
- विषमाशन
- जलपान
- वर्ज्य
- पात्थ्याहार
- अपत्थ्य

Unit 4 - दोषादि विज्ञान

- दोष
- धातु

Unit 5 - पूरक



- योग
- व्यायाम

Part 2 संस्कृत – (Contact Hours 10)

Unit 6 - संवाद कौशल्य

- स्वपरिचयः
- साधुशब्द
- संवाद

Unit 7 - मर्मविज्ञान ग्रंथ अभ्यास

- पारिभाषिक शब्द
- प्रात्यक्षिक

अव्ययानि च Unit 8 - साहित्यम्

- सुभाषितानि
- कथा
- वाक्याभ्यास

Syllabus for Practical Paper

(Total Credits: 02 and Contact Hrs. 40)

- Minimum 10 practicals of 3 hrs duration should be conducted.

Unit 1 - पूर्वकर्माणि

- अभ्यंग
- स्नेहन
- स्वेदन



- षष्ठीशालिपिंडस्वेद

Unit 2 - पंचकर्म

- शिरोधारा
- कटीबस्ति
- मन्याबस्ति
- नेत्रतर्पण
- हृदयबस्ति
- अग्निकर्म
- विद्धकर्म
- क्षारसूत्र
- धूपन
- धूमपान

Unit 3 -

- काढे
- औषधांच्या पुड्या
- मात्रा
- लेप
- अनुपान

Unit 4 - वैद्यालय व्यवस्थापन

- आसन व्यवस्था
- स्वच्छता
- सजावट
- संगीत
- पुष्प रचना
- धूप
- वाचनार्थ
- भित्तिपत्रके, फोटो इ.
- रंग ज्ञान

Unit 5 - वैद्य सहाय्य



- आतुरविवरण पत्रक
- कर्म सहाय्य

Reference Books:

- मर्मविज्ञान – अत्रिदेव विद्यालंकार
- चरकसंहिता – अग्निवेश
- अष्टांगहृदय – वाग्भट

Question Paper Nature
Certificate course in Ayurved Paricharak

Time: 2 hr

Total Marks: 40

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 10

- 1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)
9)
10)

Q. 2. Answer **any four** of the followings. 10

- i)
ii)
iii)
iv)
v)



Q. 3. Answer *any two* of the followings.

10

- i)
- ii)
- iii)

Q. 4. Write note on *any two* of the following.

10

- i)
- ii)
- iii)





D.B.F. Dayanand College of Arts and Science, Solapur.

Affiliated to



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Solapur University, Solapur.**

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in Textile Chemistry

Name of Course: B.Sc.-III (Sem.-V) / M.Sc.-II (Sem.-III)

Chemistry

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR

B.Sc.-III (Sem.-V) / M.Sc.-II (Sem.-III) Chemistry

Certificate Course in Textile Chemistry

Structure of the Course:

- Certificate Course in Textile Chemistry will be implemented for **B.Sc.-III (Sem.-V) / M.Sc.-II (Sem.-III) Chemistry**.
- There will be one theory paper of **50 marks** and Practical of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination and **20 marks** for project and oral internal examination.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.Sc.-III (Sem.-V) /	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
M.Sc.-II (Sem.-III)	Project & Oral	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**. There will be two practical's each of **3.00 hr** duration.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- **The Project may be on laboratory works/Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**



Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 30)

- 1. Textile Fiber** (Contact hrs:05)
 - 1.1 Classification of Fibers, Physical & Chemical properties of Cotton, Wool, Jute and silk.
 - 1.2 Method of manufacturing, physical, chemical, properties and uses of man made fibers, regenerated fibers such as viscose rayon, acetate rayon
 - 1.3 Method of manufacturing, Physical, Chemical properties and uses of man made fibers, Polyester, Nylon 66 Polyacrylonitrilic Polyolefins
- 2. Sizing** (Contact hrs:05)
 - 2.1 Object of Sizing, Sizing ingredients and their functions.
 - 2.2 Chemistry of Sizing ingredients.
 - 2.3 Physical and chemical properties of starch, softener, synthetic adhesives.
 - 2.4 Testing of starches, softeners.
 - 2.5 Sizing of synthetic warp yarn
- 3. Bleaching** (Contact hrs:05)
 - 3.1 Studying of outline of the process of bleaching of cotton and synthetic materials.
 - 3.2 Studying of process like sizing, desizing, scouring, bleaching and souring (Batch and Continuous process)
- 4. Dyeing** (Contact hrs:05)
 - 4.1 Study of dyeing of cellulosic materials with dyes like direct, vat sulphur, reactive, soluble reactive, soluble vat, mineral khaki and aniline back.
 - 4.2 Study of dyeing of synthetic fibers like polyester, nylon and acrylic with suitable class of dyes.
 - 4.3 Brief description of machinery used for dyeing yarn and fabric machines like package dyeing jigger, winch, padding mangle and continuous dyeing tango
- 5. Printing** (Contact hrs:05)
 - 5.1 Study of printing cellulosic fabrics with dyes like direct, reactive vat, soluble vat, azoics and pigment colours
 - 5.2 Study of direct discharge and resist style of printing
 - 5.3 Brief study of flat bed screen printing machine, rotary screen printing machine and roller printing machine
- 6. Fining** (Contact hrs:05)
 - 6.1 Object and classification of finishing processes.
 - 6.2 Finish applied on celliosics and synthetic fabrics with reference to resin finishing, water proofing, soil release.
 - 6.3 Study of water mangling starching, drying, stenering, calendaring, mercerization, shrink resisting treatment, optical brightening treatments.



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

- **Minimum 05 practicals of 3 hrs duration should be conducted.**
1. Identification of textile fibers.
 2. Testing of Starches
 3. Testing of oils and softeners.
 4. Testing of Turkey Red oil.
 5. Viscosity testing of different starches.
 6. Bleaching of cellulosic with different bleaching agent.
 7. Bleaching of Polyester with different bleaching agent.
 8. Dyeing of cellulosic fabric with different classes of dyes like direct, vat, sulphur, indigosol, Azoic reactive etc.
 9. Dyeing of synthetic fabrics with different classes of dyes like disperse, reactive, basic, acid, etc
 10. Testing of colour fastness (washing, light and abrasion) for dyed fabrics and garments.
 11. Testing of shrinkage of fabrics and garments.
 12. Preparation of screen for printing.
 13. Preparation of printing paste of different dyes.
 14. Fixation of print with steaming method.
 15. Other related practical



Reference Books:

- | | | |
|----|--|----------------------------------|
| 1 | Textile Fibers | -Dr. V. A. Shenai |
| 2 | Sizing | -D. B. Ajgaonkar |
| 3 | Bleaching | -Dr. V. A. Shenai |
| 4 | Dyeing | -Dr. V. A. Shenai |
| 5 | Printing | -Dr. V. A. Shenai |
| 6 | An Introduction of Finishing | -J.T.Marsh |
| 7 | Finishing | -Dr. V. A. Shenai |
| 8 | Bleaching | -E. R. Trotman |
| 9 | Textile Science | -J. T. Marsh |
| 10 | Fiber Science & Technology | -S Jayprakash, R. Gopalkrishna |
| 11 | Evaluation & Textile Chemicals | -Dr. V. A. Shenai & R. H. Mehera |
| 12 | Practical Cotton Finishing | -J. H. Edge |
| 13 | Identification of Organic
Compound & Textile Fibers-
Semi Micro Method | -J. G. Vashi |



Question Paper Nature
Certificate course in Textile chemistry

Time: 2 hr

Total Marks: 40

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08

- 1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)

Q. 2. Answer **any four** of the followings. 08

- i)
ii)
iii)
iv)
v)

Q. 3. Answer **any two** of the followings. 08

- i)
ii)
iii)

Q. 4. Write note on **any two** of the following. 08

- i)
ii)
iii)

Q. 5. Answer **any one** of the followings. 08

- i)
ii)





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Affiliated to



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Solapur University, Solapur.**

Name of Faculty: Humanities

(Choice Based Credit System)

Syllabus: Certificate course in वाचिक अभिनय आणि

पथनाट्य:सादरीकरण

Name of Course: B.A.-III (Sem.-V)

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR B.A.-III (Sem.-V) SOCIOLOGY

Certificate Course in वाचिक अभिनय आणि पथनाट्य :सादरीकरण Structure of the Course:

- Certificate Course in will be implemented for **B.A.-III (Sem.-V)** मराठी
- There will be one theory paper of **50 marks** and presentation/performance of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the Project presentation/performance will be conducted. The weightage of writtenscript is of **20marks** for Project presentation/ oral examination. **30 marks** .

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.A.-III	Theory	30	40	10	50	2
(Sem.-V)	Script/Performance	30	00	50	50	2
Total		60	40	60	100	4

- Duration of Fieldwork/Project & Oral examination is of **one day**.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- The Project may be on **performance/presentation of script** for 50 marks. Its report should be submitted at the time of university examination for 02 credits.
- If the course is University Affiliated, then the certificate of completion of course will be issued by University.
- If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.



Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 45)

Unit I वाचिक अभिनय

Contact Hrs. 15

- वाचिक अभिनय -संकल्पना /प्रकार /पूर्वेतीहास
- अभिनय आणि वाचिक अभिनय -साम्यभेद
- वाचिक अभिनय घटक व प्रकार

Unit II पथनाट्य

Contact Hrs 15

- संकल्पना -पूर्वेतीहास /प्रकार-स्वरूप
- पथनाट्य -नाटिका -नाटक -फरक
- पथनाट्य -महाराष्ट्र व भारतीय स्वरूप

Unit III वाचिक अभिनय सादरीकरण

Contact Hrs15

- Aसंहिताची निवड
- Bसाधने
- Cकलावंत आसनव्यवस्था-
- Dध्वनिक्षेपण व्यवस्था

Unit IV पथनाट्यसादरीकरण Contact Hrs 15

- विषयाची निवड
- खुला मंच -जागेची निवड
- विषयानुरूप साधनांची निवड
- आवाज /आवाहन /संघर्ष

Fieldwork/Project

(Total Credits: 02 and Contact Hrs. 15)

Note: - 50 Marks Field Work/ Project Report/



Recommended Readings

1. वाचिक अभिनय : डॉ श्रीराम लागूराजहास प्रकाशन ,पुणे
2. मराठी नाटकांची गंगोत्री :संपा. सरोजिनी शेंडे ,महा. रा. सा . सं . मंडळ ,मुंबई
3. मराठी रंगभूमीचा उषःकाळ ;संपा . माया सरदेसाई ,मराठी विभाग उस्मानीयायूनिवर्सिटी
4. पथनाट्य :सामाजिक प्रबोधनाचे साधनरूप ,राजशेखर शिंदे ,रिसर्च ऑफ रिव्यू ,एप्रिल २०१८

Question Paper Nature

Certificate course in The Problems Of Vidi Workers and Handloom Workers : Sociological Approach

Time: 2 hr

Total Marks: 40

-
- Q. 1. Select the appropriate word. 10
- 1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)
9)
10)
- Q. 2. Answer *any Two* of the followings. 10
- i)
ii)
iii)
iv)
- Q. 3. Long Answer *any one* of the followings. 10
- i)
OR
ii)
- Q. 4. Long Answer *any one* of the followings. 10

Cordinator: Dr. Rajshekhar Shinde
(Associate Professor)



PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR
M.A. Part- II

Subject: ECONOMICS

CERTIFICATE COURSE IN ECONOMICS OF INSURANCE

(With effect from June, 2021)

Total Lectures: 60

Total credits: 04

Marks: 100

PREAMBLE

This course on Economics of insurance attempts to give a fairly comprehensive view of the subject to the postgraduate students in Economics. Insurance is mandatory in the prevailing risky environment. Insurance provides economic protection to the individual and business concern. Insurance gives financial protection to the insured against the unexpected losses. Insurance industry is an important constituent of financial services industry in India. It is a major investment institution and prominent player in the capital market. The insurance sector in India is expanding rapidly. The job opportunities in this sector are increasing. This course will equip the students to make career in insurance sector.

SYLLABUS

1. Introduction to Insurance Economics (15 Lectures)

- 1.1 Definition of insurance, Evolution of insurance, Social vs. private insurance, Role of insurance
- 1.2, Classification of life, health and general insurance policies, Life vs. non-life insurance
- 1.3 Principles of Insurance
- 1.4 Risk and Insurance, Features and Functions of Insurance

2. Life Insurance and General Insurance (15 Lectures)

- 2.1 Life insurance- Definition, Basics of life insurance, Principles of life insurance
- 2.2 Types of Policies for life, policy conditions for life insurance
- 2.3 General Insurance- Definition, types, importance, general insurance and economic development
- 2.4 Policy endorsement conditions, selection of risks, Rating and calculation of premiums

3. Health Insurance (15 Lectures)

- 3.1 Meaning and types of health insurance, Basics of Health Insurance
- 3.2 Products available-Hospitalization reimbursement insurance, Critical illness insurance cover, Specific



disease covers

3.3 Health insurance plans, Group insurance schemes

3.4 Health insurance - Policy procedure, Health insurance - Claim procedure

4. Insurance Market in India (15 Lectures)

4.1 Marketing of insurance in India

4.2 Role and performance of LIC and GIC

4.3 Mechanism of redressal of grievances of policyholders

4.4 Role of Insurance Regulatory Development Authority (IRDA)

References

1. Insurance- Principles And Practice, M.N. Mishra & S.B. Mishra, Sultan Chand Publications.
2. Elements of Insurance – Dr. A. Murthy, Margham Publications.
3. Banking and Insurance – E. Gordon, P.K. Gupta, Himalaya Publishing House.
4. Principle of practice of Insurance – Dr. P. Periasamy, Himalaya publishing House.
5. Insurance Principles and practice – Inderjit Singh, Rakesh katyal and Sanjay arora, Kalyani Publishers.
6. IRDA Annual Report.
7. Bailey, R. (Ed.) Underwriting in Life and Insurance, LOMA, Atlanta, Ga.
8. Bhole, L. M. The Indian Financial System, Tata McGraw Hill, New Delhi.
9. Bickelhaupt, D. L. (1992), General Insurance, Irwin Inc., Burr. Ridge, III.
10. Black, K. Jr. and H. D. Skipper Jr. (2000), Life and Health Insurance, Prentice Hall, Upper Saddle River, New Jersey.
11. Finsinger, J. and M. V. Pauly (Eds.) (1986), The Economics of Insurance Regulation: A Cross National Study, Macmillan, London.
12. Graves, E. E. and L. Hayes (Eds.) (1994), McGill's Life Insurance, The American College Blyn Mawr.

Examination:

Total Marks: 100

Theory Exam: University exam: 80 Marks + Internal Exam/Project work: 20 Marks





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Solapur University, Solapur.**

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in Fermentation Technology

Name of Course: B.Sc.-III (Sem.-V) Microbiology

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR
B.Sc.-III (Sem.-V) Microbiology
Certificate Course in Fermentation Technology

Structure of the Course:

- Certificate Course in Fermentation Technology will be implemented for **B.Sc.-III (Sem.-V) Microbiology**.
- There will be one theory paper of **50 marks** and Practical of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination and **20 marks** for project and oral internal examination.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.Sc.-III (Sem.-V) / M.Sc.-II (Sem.-III)	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
	Project & Oral	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**. There will be two practical's each of **3.00 hr** duration.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- **The Project may be on laboratory works/Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**



Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 30)

1. Unit-I- Fundamentals and basics of fermentation technology (Contact hrs:06)

- 1) Introduction to History and Scope of Fermentation
- 2) Fermenter design and Types
- 3) Sterilization of Fermenter
- 4) Preparation Fermentation Media and Sterilization of Media

Unit-II Downstream Processing and Quality control (Contact hrs:06)

- 1) **Downstream Processing:**
Filtration, Cross flow filtration, Flocculation, Whole broth processing, solvent extraction
- 2) **Quality control in fermentation industry**
Test for Sterility, Pyrogenicity, Allergy, and Carcinogenicity

Unit-III Tools and Techniques in Fermentation Technology (Contact hrs:06)

- 1) Microscopy- Compound microscopy & Electron microscopy
- 2) Chromatography techniques- paper chromatography and thin layer chromatography.
- 3) Instruments- Basic principles & usage-pH meter, Autoclave, Hot air oven, Centrifuge, Seitz filter, Glass distillation, Incubator, colorimeter,

Unit-IV Specific fermentations (Contact hrs:06)

- 1) Production of amino acid- Lysine
- 2) Production of Enzyme -Amylase
- 3) Production of Alcoholic beverages- Wine
- 4) Production of r DNA product-Insulin

Unit-IV Entrepreneurship Development in Fermentation Technology (Contact hrs:06)

- 1) Importance of entrepreneurship
- 2) Concept & role in development in fermentation Technology



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

- **Minimum 05 practicals of 3 hrs duration should be conducted.**

- 1) Preparation of Reagents and Solutions
 - a) 1N NaOH
 - b) 1N HCL
- 2) Preparation of Phosphate buffer
- 3) Estimation of alcohol by using $K_2Cr_2O_7$
- 4) Screening of Amylase producers by Replica plate method
- 5) Preparation of fermentation Media from raw Materials
- 6) Screening of Antibiotic producers by crowded Plate Technique
- 7) Estimation of Citric acid by titration method
- 8) Sterility Testing of Media and Pharmaceutical products
- 9) Production of Wine by *Saccharomyces cerevisiae*
- 10) Production of Citric acid by *Aspergillus niger*



References

1. Principles of fermentation technology – Whitkar and Stanbury
2. Pharmaceutical Microbiology – Huggo
3. Biochemistry – Fox and Nelson
4. Industrial Microbiology – Prescott and Dunn
5. Microbial technology – Pepler
6. Advances in Biotechnology – S.W. Jogdand.
7. Textbook of Biotechnology – R.C. Dubey,
8. Biotechnology – B.D. Singh
9. Industrial Microbiology – Casida
10. Industrial Microbiology by A.H. Patel.
11. Food Microbiology: an Introduction by Adam and Dick
12. Food Microbiology by Frazier



Question Paper Nature
Certificate course in Fermentation Technology

Time: 2 hr

Total Marks: 40

-
- Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08
1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)
- Q. 2. Answer **any four** of the followings. 08
i)
ii)
iii)
iv)
v)
- Q. 3. Answer **any two** of the followings. 08
i)
ii)
iii)
- Q. 4. Write note on **any two** of the following. 08
i)
ii)
iii)
- Q. 5. Answer **any one** of the followings. 08
i)
ii)



Examination Pattern:

Practical Examination

30 Marks

Time 3.00 hrs

-
- Q.1. Proceed following experiment and write results** **15 Marks**
- Q.2. Proceed the following experiment and write results** **10 Marks**
- Q. 3. Oral** **05 Marks**





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Name of Faculty: Humanities

(Choice Based Credit System)

Syllabus: Certificate course in Stock Market

Name of Course: B.A.-III (Sem.-V) / M.A.-II (Sem.-III)

Economics

(Syllabus to be implemented from June 2021)



SYLLABUS FOR

B.A.-III (Sem.-V) / M.A-II (Sem.-III) Economics

Certificate Course in Stock Market

Structure of the Course:

- Certificate Course in Stock Market will be implemented for **B.A.-III (Sem.-V) / M.A.-II (Sem.-III) Economics**
- There will be one theory paper of **50 marks** and Field visit/Project of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the students should submit field work/Project. The weightage of field work/Project is of **30 marks** and **20 marks** for presentation of field work/Project.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.A.-III (Sem.-V) /	Theory	45	40	10	50	3
M.A.-II (Sem.-III)	Field work/Project & Oral	15	30	20	50	1
Total		60	70	30	100	4

- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- **The Project may be based on Field work/Industrial visit for 30 marks. Its report should be submitted at the end of the SEM V for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**



Certificate Course in Stock Market

SYLLABUS

(Total Credits: 04 and Contact Hrs. 60)

1. Concept of capital market and its features

Equity markets. (5 Lectures)

- Common shares
- Preferred shares
- Primary and secondary market
- Long term fixed-income capital markets
- Bonds- Futures
- Link between Savers and Investment Opportunities:
- Deals in Long Term Investment:
- Utilizes Intermediaries:
- Determinants of Capital Formation
- Government Rules and Regulations

2. Role of capital market in Indian economy. (5 Lectures)

- Mobilisation of Savings and Acceleration of Capital Formation
- Ready and Continuous Market
- Technical assistance
- Raising long term capital
- Foreign capital
- Easy liquidity
- Revival of sick units

3. Basics of Stock Market. (5 Lectures)



- Focus on price
- Stay liquid
- Practice before you jump in
- Don't try to out-think the markets

4. Commonsense approach to Investing. (5 Lectures)

- Avoid the herd mentality
- Take informed decision
- Invest in business you understand
- Don't try to time the market
- Follow a disciplined investment approach
- Do not let emotions cloud your judgement
- Create a broad portfolio
- Have realistic expectations
- Invest only your surplus funds
- Monitor rigorously

5. Trading Ideas. (04 Lectures)

6. Reading Technical charts (03 Lectures)

7. Understanding fundamental reports (03 Lectures)

8. Basics of Mutual Fund (5 Lectures)

- NAV
- SIP
- ELSS

9. Basics of commodities Market(5 Lectures)

- Introduction
- Commodity futures
- Dematerialization
- Cash settlement

10. Basics of Currency Market(5 Lectures)



- Introduction
- Yield and Return
- Leveraging Returns
- Carry Trades
- Carry Trade Success
- Getting to Know Interest Rates
- The Bottom Line

Field Visit/ Project Work:

Field visit/Project (15 lectures)

Reference Books:

- 1) Indian Economy – Datt and Sundharam's
- 2) Indian Economy – Ramesh Singh
- 3) Indian Stock Market Basic – Deepak Shinde
- 4) Basic of Indian Stock Market – Angshuman Adhikari
- 5) Capital Market and Financial System in India – Asheesh Pandey
- 6) Capital markets And Securities Laws – CS. Ajay Goel & Sapna Tiwari
- 7) Indian Economy – Mishra & Puri
- 8) Money, Banking, Financial Markets and Institutions – Michael W. Brandl



Question Paper Nature
Certificate course in Stock Market

Time: 2 hr

Total Marks: 40

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08

- 1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)

Q. 2. Answer **any four** of the followings. 08

- i)
ii)
iii)
iv)
v)

Q. 3. Answer **any two** of the followings. 08

- i)
ii)
iii)

Q. 4. Write note on **any two** of the following. 08

- i)
ii)
iii)

Q. 5. Answer **any one** of the followings. 08

- i)
ii)





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Solapur University, Solapur.**

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in Handling of Sophisticated
Instruments

Name of Course: M.Sc.-II (Sem.-III) Chemistry

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR
M.Sc.-II (Sem.-III) Chemistry
Certificate Course in Handling of Sophisticated Instruments
Structure of the Course:

- Certificate Course in Handling of Sophisticated Instruments will be implemented for M.Sc.-II (Sem.-III) Chemistry.
- There will be one theory paper of **50 marks** and Practical of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination and **20 marks** for project and oral internal examination.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
M.Sc.-II (Sem.-III)	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
	Project & Oral	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**. There will be two practical's each of **3.00 hr** duration.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- **The Project may be on laboratory works/Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**



Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 30)

- 1. Introduction to spectroscopy** (Contact hrs:10)
 - 1.1 Characterization of electromagnetic radiation.
 - 1.2 The quantization of energy
 - 1.3 Regions of the spectrum
 - 1.4 Signal to noise ration: resolving power
 - 1.5 The width and intensity of spectral transitions

- 2. UV-Vis spectrophotometer: Techniques and instrumentation** (Contact hrs:10)
 - 2.1 Principle of uv-vis light absorption
 - 2.2 Practical considerations
 - 2.3 Source
 - 2.4 optical path and monochromator
 - 2.5 Detector and sample
 - 2.6 Applications and Spectra analysis

- 3. Infra-red spectrometer: Techniques and Instrumentation** (Contact hrs:10)
 - 3.1 Practical considerations
 - 3.2 Source
 - 3.3 optical path and monochromator
 - 3.4 Detector and sample and sample preparation
 - 3.5 Applications and Spectra analysis



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

- **Minimum 05 practicals of 3 hrs duration should be conducted.**

1. Verification of Beer's-Lambert law
2. Interpretation of uv-vis absorption spectra
3. Analysis of sample uv-vis spectrum
4. Interpretation of IR absorption spectra
5. Identification of compounds using the fingerprint region
6. Analysis of sample IR spectrum
7. Investigation of chemical bond by using IR spectroscopy
8. Spectrophotometric analysis of mixture
9. Identifying compounds using uv-vis spectroscopy.



Reference Books:

- 1) Fundamental of molecular spectroscopy by C. N. Banwell Tata McGrawHill.
- 2) Physical Chemistry by P. W. Atkins,ELBS,1986
- 3) Molecular Structure and Molecular Spectra by G. Herzberg, VanNostrand.
- 4) Molecular Spectroscopy by I. N. Levine, Willeyinterscience.
- 5) Molecular Spectroscopy by G. M. Barrow, McGrawHill.
- 6) Molecular Structure and Spectroscopy, G. Aruldas, Prentice Hall, 2001.
- 7) Modern Spectroscopy, J. M. Hollas, JphnWiley.



Question Paper Nature
Certificate course in Handling of sophisticated Instruments

Time: 2 hr

Total Marks: 40

-
- Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08
1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)
- Q. 2. Answer **any four** of the followings. 08
i)
ii)
iii)
iv)
v)
- Q. 3. Answer **any two** of the followings. 08
i)
ii)
iii)
- Q. 4. Write note on **any two** of the following. 08
i)
ii)
iii)
- Q. 5. Answer **any one** of the followings. 08
i)
ii)





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Name of Faculty: Social Sciences

(Choice Based Credit System)

Syllabus: Certificate course in Heritage Awareness & Tourism

Name of Course: B.A.-III (Sem-V)/M.A.-II (Sem-III) History

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR

B.A.-III (Sem.-V)/ M.A. II (Sem.III) HISTORY

Certificate Course in Heritage Awareness and Tourism

Structure of the Course:

- Certificate Course in Heritage Awareness and Tourism will be implemented for B.A.-III (Sem.-V)/ M.A. II (Sem.III) HISTORY
- There will be one theory paper of 50 marks and Fieldwork/Project of 50 marks.
- The theory paper has 40 marks for university external examination and 10 marks for internal examination.
- At the end of Semester V, the Project presentation will be conducted. The weightage of fieldwork /Project is of 30 marks for Project presentation/ oral examination.20 marks .

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.A.-III (Sem.-V)/M.A. II (Sem.III)	Theory	45	40	10	50	2
	Fieldwork/Project & Oral	15	00	50	50	2
Total		60	40	60	100	4

- Duration of Fieldwork/Project & Oral examination is of **one day**.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- The Project may be on Field work/Museum visit for 50 marks. Its report should be submitted at the time of university examination for 02 credits.
- If the course is University Affiliated, then the certificate of completion of course will be issued by University.
- If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum



Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 45)

Unit I Heritage Monuments

Contact Hrs. 15

- A. Heritage-Definitions
- B. World Heritage Monuments in India
- C. World Heritage Monuments in Maharashtra

Unit II Heritage Preservation and Laws

Contact Hrs. 10

- A. UNESCO
- B. Role of Government and N.G.O.
- C. Heritage and Museum

Unit III Heritage Awareness and Tourism Development

Contact Hrs. 10

- A. Heritage Awareness and Tourism
- B. Purpose and scope of Tourism
- C. New trends in Tourism

Unit IV Tourist Guide

Contact Hrs. 10

- A. Qualification and Qualities of good tourist guide
- B. Role and contributions of Tourist guide
- C. Communication skill of tourist guide.



Fieldwork/Project

(Total Credits: 02 and Contact Hrs. 15)

Note: - 50 Marks Field Work/ Project Report/

Recommended Readings

1. **Mate M.S.** PrachinBhartiya Kala (Marathi) Continental Prakashan, Pune.
2. **Kulkarni M.Y.** PrachinBhartiyaKalavaibhav (Marathi) SanskarBharti, Pune.
3. **Joshi Mahadevshastri** BhartiyaSanskaritiKosh (Marathi), BhartiyaSanskariti KoshMandal, Pune.
4. **Gupta S.P.** Tourism Museums and Monuments of India. Oriental Krishna LalPublishers, Pune.
5. **Bhatiya A.K** Tourism in India-History and Development, Sterling Publication Pvt.Ltd. New Delhi.
6. **Bhatiya A.K.** Tourism Developments, Principals and Practices , Sterling Publication, Pvt. Ltd. New Delhi.
7. **Rowland Benjamin** TheArt and Architecture of India (Buddhist, Hindu, Jain) Penguin Books Ltd.London.
8. **Percy Brown** Indian Architecture (Buddhist and Hindu Period) Part-I, D.B. Taraporwal Sons and Co. Mumbai.
9. **Archeological Remains** Monuments and Muscums (Two Parts) Archeological Survey of India, Delhi.
10. **Krishna K. Kamra&**Basics of Tourism, Kanishka Publishers, Distributors, Mohinder Chand New Delhi.
11. **James W. Morrison** Travel Agent and Tourism.
12. **Krishna Deva** Temples of North India.
13. **Patil Maya** Puratatva: EkParyalochan (SuvidyaPrakashn, solapur)
14. **Patil Maya** MarathwadaytilKahiMandireShilpe Dr. M.J. Patil (in Marathi)



**BA III History Sem. VI
Add-on Course**

Indian History for Competitive Examinations

Credits - Theory:3 Project/Report: 1 Total: 4

Total Periods: 60

Preamble:

Competitive examination has become an essential part of government, semi-government and private sector jobs. Many students study with the dream of achieving success in these various examinations but most of the students do not get proper guidance. Easy study techniques and the ability to give accurate answers are not mastered. The result is failure in competitive examinations. The study units of Indian history of many competitive examinations have been placed at different levels in compulsory and optional form. Students will be able to better prepare for the history study units for various competitive examinations if develop skills like examination scope, nature of questions, suitable study methods for correct answers, selfstudy techniques, availability of reference books and their use as per the scope of the examination. Since this paper is to be studied in the final semester of the final year of graduation, they will acquire important skills at the right time. This skill oriented subject will be used by the students to get appointments through various competitive examinations, to work in competitive exam. Centers as well as private guides and to give lectures and speeches using lecture series, ceremonies and social media.

Objectives:

1. To aware the students about various competitive examinations
2. To facilitate the students to take up the challenges of appearing for competitive examinations.
3. To get the information about the exams conducted for the entry into jobs
4. To explain the various important events in Indian history.
5. To develop self study techniques of history subject useful for competitive examinations.

Learning Outcomes:

1. Understand various opportunities in competitive examinations.
2. Students will be aware of the competitive examinations
3. History knowledge Utilize for professional jobs.
4. Skills Will be develop for self study of history units suitable for various competitive examinations.
5. Students knows History subject importance UPSC, MPSC, Staff selection Bank, Railway, Army, Police, Post office etc. Examination.





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Name of Faculty: Social Sciences

(Choice Based Credit System)

Syllabus: Certificate course in Museum Management

Name of Course: B.A.-III (Sem.-V)

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR

B.A.-III (Sem.-V) Ancient Indian History and Culture (AIHC)

Certificate Course in Museum Management

Structure of the Course:

- Certificate Course in Museum Management will be implemented for **B.A.-III (Sem.-V) Ancient Indian History and Culture(AIHC)**
- There will be one theory paper of **50 marks** and Fieldwork/Project of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the Project presentation will be conducted. The weightage of fieldwork /Project is of **30 marks** for Project presentation/ oral examination.**20 marks** .

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.A.-III (Sem.-V)	Theory	45	40	10	50	2
	Fieldwork/Project & Oral	15	00	50	50	2
Total		60	40	60	100	4

- Duration of Fieldwork/Project & Oral examination is of **one day**.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- The Project may be on Field work/Museum visit for 50 marks. Its report should be submitted at the time of university examination for 02 credits.
- If the course is University Affiliated, then the certificate of completion of course will be issued by University.
- If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.



Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 45)

Unit I Introduction to Museum and Museology . **Contact Hrs. 15**

- A. Definition and Scope of Museology
- B. Museum – 1) National Museum, New Delhi

2) Chhatrapati Shivaji Maharaj Museum, Mumbai

Unit II Museum Management **Contact Hrs. 10**

- A. Staff, security and finance
- B. Preservation and conservation of museum objects.

Unit III Types of Museum and Exhibitions **Contact Hrs. 10**

Unit IV Methods of Acquisition of objects for Museum. **Contact Hrs. 10**

Fieldwork/Project

(Total Credits: 02 and Contact Hrs. 15)

Note: - 50 Marks Field Work/ Project Report/

Recommended Readings

1. **Shobita Punja**:- Museums of India, Guide Book Company Ltd; Hongkong.
2. **National Museum** : A Brief Guide to the National Museum National Museum, New Delhi.
3. **Gupta S.D. Krishna Lal**:- Tourism, Museum and Monuments in India, Orient Publishers, Delhi.
4. **Bedekar V.H.** :- So you want Good Museum Exhibitions, Dept. of Museology, M.S. University, Baroda.
5. **Deo.S.B.**:- Museum and Protection of Monuments and Antiquities in India, Sundeep Prakashan, New Delhi-1981.



6. **Bakshi, Smitaj and vinod P. Dwivedi**:- Modern Museum organization and practice in India, Abhinav Publications, New Delhi.

7. **Published by**

The Director General

Archaeological Survey of India, New Delhi, 1996 :- Archaeological Remains Monuments and

Museums.

8. **Burcaw, of Ellis** :- Introduction to Museum work 2nd ed (American Association for State and

Local History, Nashville, 1983)

9. **Dwivedi, V.P.** :- Museums and Museology, New Horizons,

(Agam Kala Prakashan, Delhi, 1980).





D.B.F. Dayanand College of Arts and Science, Solapur.

Affiliated to



**Punyashlok Ahilyadevi Holkar
Solapur University, Solapur.**

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in Plant Biotechnology

Name of Course: B.Sc.-III (Sem.-V) **BOTANY**

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR B.Sc.-III (Sem.-V) / M.Sc.-II (Sem.-III) Botany Certificate Course Plant Biotechnology

Structure of the Course:

- Certificate Course in **Plant Biotechnology** will be implemented for **B.Sc.-III (Sem.-V) Botany**.
- There will be one theory paper of **50 marks** and Practical of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination and **20 marks** for project/field visit / Industrial visit and oral internal examination.

Class Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.Sc.-III (Sem.-V) / M.Sc.-II (Sem.-III)	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
	Project & field visit / Industrial visit field visit / Industrial visit Oral	15	00	20	20	1
	Total	60	70	30	100	4

- Duration of practical examination is of **one day**. There will be two practical's each of **3.00 hr** duration.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.



- **The Project may be on laboratory works/Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**

Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 30)

Course objectives:

1. This skill development course creates ample avenues for undergraduate and postgraduate students in both the field of research and placements in research and developments and also in biotechnology based companies.
2. The students will be technically trained with good practical exposure to perform plant culture, which is the at most required in this field of science, skilled candidates are absorbed in well established and commercial tissue culture units.
3. This area can be taken up as micro propagation business with smaller investment by entrepreneurs.
4. Many Central and State Government departments to name a few: The Department of Agriculture and Cooperation, National Horticulture Board (NHB) under the Ministry of Agriculture, Agricultural and Processed food products Export Development Authority (APEDA) under the Ministry of Commerce and Industry etc., are promoting by providing various schemes and subsidies along with incentives to strengthen this stupendous discipline.



Syllabus of Plant Biotechnology

30 L

Unit 1: Introduction to Plant Tissue Culture

5L

- 1.1. Aims & objectives of Tissue culture
- 1.2. Laboratory design
- 1.3. Conditions required to develop tissue culture laboratory
- 1.4. Scope of tissue culture

Unit 2: Sterilization techniques in Tissue culture

5L

- 2.1. Sterilization of glassware's
- 2.2. Sterilization of media
- 2.3. Sterilization of explants
- 2.4. Maintaining of aseptic conditions in tissue culture laboratory

Unit 3: Media in tissue culture

5L

- 3.1. Media composition
- 3.2. Different types of media used in tissue culture

Unit 4: Culture

10L

- 4.1. Process, advantages, factors affecting Micro propagation
- 4.2. Process, advantages, factors affecting Shoot tip culture
- 4.3. Process, advantages, factors affecting embryo, anther culture
- 4.4. Synthetic seed

Unit 5: Industrial Tissue culture

5L

- 5.1. Secondary metabolite production
- 5.2. Types of Bioreactors
- 5.3. Method of hardening
- 5.4. Maintenance of harden plants in green house
- 5.5. Plant tissue culture industries in India



Practical's in Plant Biotechnology

1. Study of Plant tissue culture laboratory design
2. Preparation of MS media
3. Establishment of suspension cultures
4. Study of sterilization techniques in tissue culture
5. Explant preparation, inoculation and initiation of tissue culture
6. Study of Embryo culture
7. Study of Shoot tip culture
8. Study of anther culture
9. Preparation of synthetic seeds
10. Visit to commercial tissue culture laboratory
11. Micropropagation
12. Protoplast Isolation
13. Ovary culture
14. Ovule culture
15. Field visit / Industrial visit

Suggested Readings

1. Bhojwani, S. S. and Razdan, M. K., (1996). Plant Tissue Culture: Theory and Practice. Elsevier Science Amsterdam. The Netherlands.
2. Glick, B. R., Pasternak, J. J. (2003). Molecular Biotechnology- Principles and Applications of recombinant DNA. ASM Press, Washington.
3. Bhojwani, S. S. and Bhatnagar, S. P. (2011). The Embryology of Angiosperms. Vikas Publication House Pvt. Ltd., New Delhi. 5th edition.
4. Snustad, D. P. and Simmons, M. J. (2010). Principles of Genetics. John Wiley and Sons, U. K. 5th edition.
5. Stewart, C. N. Jr. (2008). Plant Biotechnology & Genetics: Principles, Techniques and Applications. John Wiley & Sons Inc. U. S. A.



Question Paper Nature
Certificate course in Textile chemistry

Time: 2 hr

Total Marks: 40

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08

- 1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)

Q. 2. Answer **any four** of the followings. 08

- i)
ii)
iii)
iv)
v)

Q. 3. Answer **any two** of the followings. 08

- i)
ii)
iii)

Q. 4. Write note on **any two** of the following. 08

- i)
ii)
iii)

Q. 5. Answer **any one** of the followings. 08

- i)
ii)





D.B.F. Dayanand College of Arts and Science, Solapur.

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**Punyashlok Ahilyadevi Holkar
Solapur University, Solapur.**

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in Solar Photovoltaics

Name of Course: B.Sc.-III (Sem.-V)/ M.Sc.-II (Sem.-
III)Physics

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR

B.Sc.-III (Sem.-V)/ M.Sc.-II (Sem.-III) Physics

Certificate Course in Solar Photovoltaics

Structure of the Course:

- Certificate Course in Solar Photovoltaics will be implemented for **B.Sc.-III (Sem.-V) / M.Sc.-II (Sem.-III) Physics**.
- There will be one theory paper of **50 marks** and Practical of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination and **20 marks** for project and oral internal examination.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.Sc.-III (Sem.-V) /	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
M.Sc.-II (Sem.-III)	Project & Oral	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**. There will be two practical's each of **3.00 hr** duration.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- **The Project may be on laboratory works/Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum**



Syllabus for Theory Paper

(Total Credits:02 and Contact Hrs.30)

1. Solar Energy (06)

Introduction to Solar Energy, Solar Radiation, Atmospheric Effects on Solar Radiation, Effect of Location on Time, Sun-Earth Angular Relations, Solar Radiation Measurements

2. Fundamentals of semiconductors (06)

Introduction to Band Theory, Semiconductor Basics, Electrical Properties of Semiconductors, Carrier Transport, Carrier Transport, Generation and Recombination, Recombination-Generation statistics

3. P-N Junction (04)

P-N Junction basics, P-N Junction Characteristics, P-N Junction: Effect of Bias, P-N Junction Analysis (Dark), P-N Junction Analysis (Light), Solar Cell Device Parameters

4. Generation I and Generation II Technologies (08)

Solar PV Technologies: Introduction, Manufacturing of Si, Generation-I Technologies: Mono Silicon Solar Cells, GaAs Solar Cells, Generation II Technologies: a-Si Solar Cells, CdTe Solar Cells, CIGS Solar Cells, CIGS and Multijunction Solar Cells,

5. Generation III Technologies (06)

Generation III Technologies: Organic Solar Cells, Organic and Dye Sensitized Solar Cells, Perovskite and CZTS Solar Cells



Question Paper Nature
Certificate course in Solar Photovoltaics

Time: 2 hr

Total Marks: 40

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08

- 1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)

Q. 2. Answer **any four** of the followings. 08

- i)
ii)
iii)
iv)
v)

Q. 3. Answer **any two** of the followings. 08

- i)
ii)
iii)

Q. 4. Write note on **any two** of the following. 08

- i)
ii)
iii)

Q. 5. Answer **any one** of the followings. 08

- i)
ii)

Head,
Department of Physics



Add On Course

Name of the add on course

Skill Based Course

SURVEY AND PUBLIC OPINION

Lecture 45- Study Tour/Field Visit-15

Credits – 4

Course Objective / Outcome:

This course will introduce the students to the principles and practices of public opinion in the context of Indian democracy. It will familiarize the students with how to conceptualize and measure public opinion using quantitative methods. It will develop basic skills relating to the data collection, data analysis and data utilization.

Unit I

Public Opinion: Meaning and Features. Public Opinion and Democracy

Unit II

Representation and Sampling a) Sample- Meaning and Use, Types of Samples

Unit III

Understanding Interview techniques and Questionnaire

Unit IV

Quantitative Data: Meaning, Analysis and Interpretation

Reference Books:

- 1) Gallup G., (1948) A Guide to Public Opinion Polls, Princeton: Princeton University Press
Kalton, (1983) Introduction to Survey Sampling Beverly Hills, Sage Publication.
- 2) Lokniti Team, (2004) 'National Election Study 2004', Economic and Political Weekly, Vol. XXXIX (51).
- 3) Karandikar R., C. Pyne and Y Yadav, (2002) 'Predicting the 1998 Indian Parliamentary Elections', Electoral Studies, Vol. 21
- 4) Erikson R. and K.Tedin, (2011), American Public Opinion, 8th edition, New York, Pearson Longman Publishers.





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तमसो मा ज्योतिर्गमय

Department of Zoology

CERTIFICATE COURSE IN VERMITECHNOLOGY

Co-ordinator: Prof. L.C. Mushan

Class: B.Sc. III Zoology 2022-23

Aims& Objective:

1. To acquire knowledge of basic concepts in Vermicomposting , help to maintain the environment pollution free and will get the knowledge of biodiversity of local earthworms
2. To understand the organic solid waste management.
3. Students will be able to compost in a limited space and describe the decomposing process.
4. The interested students will get the knowledge of composting and will get the employment towards organic farming.

Name of the course: Certificate Course in Vermicomposting technology

Level: Certificate

Stream: Science or any stream

Duration: 3.5months i.e.105 days

Language: English

Academic calendar for the course: Five days in a week (4days theory periods & 1day practical)

Available infrastructure: Well-equipped laboratory, vrmicomposting unit

Teaching Staff: Qualified, Experienced Guest Lecturers & eminent professors will be invited.

Non-teaching staff: 1lab assistant and 2 lab attendants.

Examination structure and schedule:

At the end of course the examination will be conducted. Its notice and time table will be displayed for communication to the students at least before 15 days of the date of examination.

1. Course VT-01Theory paper (objective/short answer type) = 50marks, Two hours duration.



Unit I 6 hrs.

Solid waste management, Organic solid waste management by vermicomposting. Introduction to vermiculture. Definition, meaning, history, economic important, Their value in maintenance of soil structure.

Classification and study of different species of earth worms. Morphology, anatomy and Physiology of earthworms.

Unit II 6 hrs.

Types of Vermicomposting – Role of earth worms in soil fertility vermiculture , vermi-cast – vermi-technology and applications – Physical, chemical and biological properties of vermi-compost.

Unit III 6 hrs.

Raw materials for composting – requirements and methods of vermicomposting. Maintenance of composting – Collection of vermicomposting – Efficiency of vermicomposting – General problems in production of vermi-composting.

Unit IV 6 hrs.

Small Scale or indoor vermicomposting – large scale or outdoor vermicomposting. Effects of vermicompost on soil properties. Vermicomposting – quality and economics. Prospects of vermi-culture as self-employment venture.

Unit V 6 hrs.

Advantage of vermicomposting – Applications of vermicomposting, vermiwash Vermicomposting of Agricultural and Urban Solid Wastes – Recycling of wastes through vermicomposting.



Outcome of course

- I. Students can construct their own compost farm & thereby can get monthly income of Rs. 7000-8000.
- II. Students/ farmers by using vermicomposting in their field can increase the crop yield.
- III. Students residing in cities can produce vermicomposting in small scale for garden/household plants.
- IV. They can get the jobs in educational institutes as vermicomposting/vermiculture technician.
- V. The candidate can generate income by supplying vermiwash, and vermicomposting.
- VI. By developing and propagating vermicomposting technology he/she will directly or indirectly help to prevent environmental pollution, by using vermicomposting in the field and thereby increasing crop yield he will help to solve food problems.
- VII. It will lead towards organic farming and healthy food.
- VIII. In today's world, recycling of garbage has become necessary in order to sustain our health and environment. So let's join for Three R's of Recycling Reduce, Reuse, Recycle, i.e. certificate course in vermicomposting technology.





D.B.F. Dayanand College of Arts and Science, Solapur.

Mahatma Anand Swami Skill Development Centre

Department of Microbiology

Name of Course: Certificate course in “Advanced Industrial Microbiology”

Duration of the Course: 6 Months

Total Credits: 2

SYLLABUS FOR
Certificate course in “Advanced Industrial Microbiology”

Structure of the Course:

- Skill Development Course in Advanced Industrial Microbiology will be implemented for **B.Sc. -I**.
- There will be one theory paper of **30 marks** and Practical of **20 marks**.

Class	Paper	Total Lectures	Examination Marks	Total Credits
B.Sc.-I	Theory	15	30	1
	Practical	10	10	0.5
	Project & Oral	05	10	0.5
Total		30	50	2

- Practical examination is 10 marks and Duration of exam is **1.00 hr**.
- Theory paper has **30 marks** for examination.
- The Project may be on laboratory works/Field work/Industrial visit for 10 marks.
- The course is College Affiliated; the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.



Objective of the course

- The main goal is to create opportunities, space and scope for the development of the talents of the students.
- To train the students for their future career in the industry and also to identify new sectors for skills.
- As well develop their skills in the industrial microbiology for their higher education like Ph.D. or Research and development sections of pharmaceuticals and other related companies.

Outcome of the course

- Student will have expertise in advanced industrial microbiology and will be ready to experiments in the R and D department of specific industry.
- Student will be confident and having advantage and extra skills in there resume for the future career.



Syllabus for Theory Paper

Advanced Industrial Microbiology

Contact Hours- 20

Unit-I Fundamental and Applied Industrial Microbiology

(10)

A.

Fundamentals basics

of Industrial Microbiology

- 1) Scope of Industrial Microbiology
- 2) Basic concepts of Fermentations
- 3) Fermentation Media
- 4) Design and types of typical bioreactor

B. Applied Industrial Microbiology

- 1) Screening: Primary and Secondary
- 2) Strain improvement
- 3) Preservation of industrially important microorganisms
- 4) Inoculum Development

Unit-II Microbial assay and Techniques in Industrial Microbiology

(10)

- 1) Microbial Assay: i) Diffusion Assay,
ii) Turbidometric assay
- 2) Downstream processes
 - a) Filtration
 - b) Centrifugation
 - c) Flocculation
 - d) Crystallization
 - e) Solvent extraction
 - f) Chromatography

Syllabus for Practical Paper

Practical course

Contact Hours-10

- 1) Preparation of media for industrial production products.
- 2) Preparation of phosphate buffer.
- 3) Estimation of alcohol by using $K_2Cr_2O_7$.
- 4) Screening of amylase producers by replica plate method.
- 5) Amylase assay (Iodometric assay).
- 6) Separation of amino acids and sugars by paper chromatographic technique.



Reference Books:

1. Patel, A.H. (1984). Industrial Microbiology, Mac Milan India Ltd.,Hyderabad.
2. Cassida, L.E. (1968). Industrial Microbiology, Wiley Eastern Ltd. & New Age International Ltd., New Delhi.
3. Prescott & Dunn, IndustrialMicrobiology
4. Purohit, Microbiology- Fundamentals and Applications, sixthedition
5. Stanbury PF, Whitaker A and Hall SJ. (2006). Principles of Fermentation Technology. 2nd edition, Elsevier Science Ltd.



Question Paper Nature
Certificate course in Advanced Industrial Microbiology

Time: 1hr

Total Marks: 30

Q.1. Choose the **most correct** alternative for the following and write the sentence. 10

- 1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)
9)
10)

Q.2. Answer **any three** of the followings. 06

- i)
ii)
iii)
iv)

Q.3. Answer **any two** of the followings. 08

- i)
ii)
iii)

Q.4. Answer **any one** of the followings. 06

- i)
ii)





D.B.F. Dayanand College of Arts and Science, Solapur.

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**Punyashlok Ahilyadevi Holkar
Solapur University, Solapur.**

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in Disaster Management

Name of Course: B.A.-III (Sem.-V)

Geography

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR B.A.-III (Sem.-V)

Certificate Course in Disaster Management

Structure of the Course:

- Certificate Course in Disaster Management will be implemented for **B.A.-III (Sem.-V) Geography**.
- There will be one theory paper of **50 marks** and Practical of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination and **20 marks** for project and oral internal examination.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.A.-III (Sem.-V)	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
	Project & Oral	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**. There will be two practical's each of **3.00 hr** duration.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- **The Project may be on Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**



Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 30)

Unit I : Introduction on Disaster (Contact hrs:07)

Different Types of Disaster :

- A) Natural Disaster: such as Flood, Cyclone, Earthquakes, Landslides etc.
 - B) Man-made Disaster: such as Fire, Industrial Pollution, Nuclear Disaster, Biological Disasters, Accidents (Air, Sea, Rail & Road), Structural failures(Building and Bridge), War & Terrorism etc.
- Causes, effects and practical examples for all disasters.

Unit II : Risk and Vulnerability Analysis (Contact hrs:07)

- A. Risk : Its concept and analysis
- B. Risk Reduction
- C. Vulnerability : Its concept and analysis
- D. Strategic Development for Vulnerability Reduction

Unit III : Disaster Preparedness (Contact hrs:07)

- Preparedness-**
- 1. Disaster Preparedness: Concept and Nature
 - 2. Disaster Preparedness Plan
 - 3. Prediction, Early Warnings and Safety Measures of Disaster.
 - 4. Role of Information, Education, Communication, and Training
 - 5. Role of Government, International and NGO Bodies.
 - 6. Role of Youth and Society.

Unit IV :Disaster Response (Contact hrs:09)

- A. Disaster Response : Introduction
- B. Disaster Response Plan
- C. Communication, Participation, and Activation of Emergency Preparedness Plan
- D. Search, Rescue, Evacuation and Logistic Management
- E. Role of Government, International and NGO Bodies
- F. Psychological Response and Management (Trauma, Stress, Rumor and Panic)
- G. Relief and Recovery



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

- **Minimum 05 practicals of 3 hrs duration should be conducted.**

1. Flood,
2. Cyclone,
3. Earthquakes
4. Landslides
5. Fire
6. Industrial Pollution,
7. Nuclear Disaster,
8. Biological Disasters,
9. Accidents (Air, Sea, Rail & Road),
10. Structural failures(Building and Bridge),
11. War & Terrorism etc.
12. Disaster Preparedness Plan
13. Emergency Preparedness Plan
14. Risk Reduction

PROJECT WORK

Project Work: (Field Work, Case Studies) The project /fieldwork is meant for students to understand vulnerabilities and to work on reducing disaster risks and to build a culture of safety. Projects are conceived creatively based on the geographic location and hazard profile of given region

A few ideas or suggestions on topics for projects for Student work could be as follows.

1. Development Disaster preparedness plans
2. Monitoring and evaluation plan for disaster response
3. Low cost Home based water purification methods
4. Planning Nutrition intervention programmes
5. Preparedness plans for public health response.
6. Safety tips before during and after earthquake, cyclone, floods and fire accidents.
7. Mapping Disaster prone areas,
8. Mapping vulnerability of people (specific groups) and resources.
9. Mock Drills
10. First Aid Training
11. Major disasters in India
12. Disaster Management in India
13. Disasters in India – An overview Institutional Framework
14. Flood affected areas and damages in India
15. Tropical cyclones
16. Heat waves in India
17. Earth quakes in India



18. Industrial and Chemical Disasters
19. Historical Tsunamis in India
20. Nuclear emergence
21. Local Traffic accidents in India
22. Major disease outbreak
23. Precaution, mitigation of disaster in India
24. Bhopal gas tragedy
25. Kutch earth quake
26. Tsunami (2004)
27. Kosi Calamity 2008
28. Mayapuri radiation exposure Delhi (2010)
29. Mock exercises
30. First aid
31. Any Subject related to disaster



Reference Books:

Disaster Management Guidelines. GOI-UNDP Disaster Risk Reduction Programme (2009-2012).

1. Disaster Medical Systems Guidelines. Emergency Medical Services Authority, State of California, EMSA no.214, June 2003
2. Guerisse P. 2005 Basic Principles of Disaster Medical Management. Act Anaesth. Belg;56:395-401
3. Aim and Scope of Disaster Management. Study Guide prepared by Sharman and Hansen. UW-DMC, University of Washington.
4. Sphere Project (2011). Humanitarian Charter and Minimum Standards in Disaster Response. Geneva: Sphere Project. <http://www.sphereproject.org/handbook/>
5. Geneva: Sphere Project. <http://www.sphereproject.org/handbook/>
6. Satapathy S. (2009) Psychosocial care in Disaster management, A training of trainers manual (ToT), NIDM publication.
7. Prewitt Diaz, J.O (2004). The cycle of disasters: from Disaster Mental Health to Psychosocial Care. Disaster Mental Health in India, Eds: Prewitt Diaz, Murthy, Lakshmi Narayanan, Indian Red Cross Society Publication.
8. Sekar, K (2006). Psychosocial Support in Tsunami Disaster: NIMHANS responses. Disaster and Development, 1.1, pgs 141-154.
9. Inter Agency Standing Committee (IASC) (Feb. 2007). IASC Guidelines on Mental Health and Psychosocial Support in Emergency Settings. Geneva: IASC.
10. Alexander David, 2000 Introduction in 'Confronting Catastrophe', Oxford University Press.
11. Andharia J. 2008 Vulnerability in Disaster Discourse, JTCDM, Tata Institute of Social Sciences Working Paper no. 8,
12. Blaikie, P, Cannon T, Davis I, Wisner B 1997. At Risk Natural Hazards, Peoples' Vulnerability and Disasters, Routledge.
13. Coppola P Damon, 2007. Introduction to International Disaster Management, Carter, Nick 1991. Disaster Management: A Disaster Manager's Handbook. Asian Development Bank, Manil



Question Paper Nature
Certificate course in Disaster Management

Time: 2 hr

Total Marks: 40

-
- Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08
1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)
- Q. 2. Answer **any four** of the followings. 08
i)
ii)
iii)
iv)
v)
- Q. 3. Answer **any two** of the followings. 08
i)
ii)
iii)
- Q. 4. Write note on **any two** of the following. 08
i)
ii)
iii)
- Q. 5. Answer **any one** of the followings. 08
i)
ii)



D. B. F. Dayanand College of Arts & Science, Solapur

Mahatma Anand Swami Skill Development Centre

Academic Year: 2023-24

B.Sc.-I Skill Development Course

Foundation Course in Basic Science

Duration: 6 Months

Credits: 2

-
- 1) Communication Skill (06)**
- 1.1 Introducing yourself
 - 1.2 Joining a formal meeting and Entering in an office.
 - 1.3 Writing an application
 - 1.4 Writing a letter
- 2) Financial Literacy and Digital Banking (06)**
- A) Basics of Financial Literacy**
- 2.1 Types of Bank deposits.
 - 2.2 Need for investment, Short & Long Term Options for investment, Common sense approach to investment.
 - 2.3 Commodity market, currency market and stock market.
 - 2.4 Primary market vs. Secondary market, Equity, IPO.
- B) Mutual Fund and other instruments**
- 2.5 Meaning of Mutual fund, Types of Mutual funds, NAV, SIP, NFO..
 - 2.6 Market capitalization, Large Cap, Mid Cap and Small Cap stocks
 - 2.7 National Pension Scheme, Gold bonds, Government bonds, Unit Linked Insurance Plans (ULIPs), ELSS.
 - 2.8 Role of SEBI.
- 3) Basics in Mathematics (04)**
- 3.1 Plotting a point, drawing graphs
 - 3.2 Addition, subtraction, multiplication and division of fractions
 - 3.3 Finding roots of quadratic equations
 - 3.4 Calculating percentage
 - 3.5 Calculating area of triangle, circle, square and rectangle
 - 3.6 Calculating slope of a line
 - 3.7 Examples on laws of logarithm and laws of indices
- 4) Basic in Life Science (08)**
- 4.1 Nutrition, Balanced diet, Essential Proteins, Carbohydrates, Lipids etc.
 - 4.2 Diseases and their causes.
 - 4.3 Natural sources of vitamins and effects of their deficiency.
 - 4.5 Definition of sterilization, disinfection, antiseptics, germicide, microbiostasis and



sanitization. Examples of sterilizing and disinfecting agents.

4.6 Introduction & Objectives of Nursery management, vegetative propagation, methods and techniques of division - stolons, bulbs, tubers, cutting, layering, grafting.

4.7 Medicinal Plants: Morphology, Parts used & uses of *Azadirachta indica*, *Phyllanthus emblica*, *Adenostoma digitata*, *Asparagus racemosus*, *Tinospora cordifolia*.

5) Laboratory Safety

(06)

5.1 General Instructions

5.2 Electrical/Electronic Equipments Safety

5.3 Chemical Safety

5.4 Heating Safety

5.6 Glassware Safety

Reference Books:

1. Basic of Indian Stock Market – Angshuman Adhikari
2. Capital Market and Financial System in India – Asheesh Pandey
3. Capital markets And Securities Laws – CS. Ajay Goel & Sapna Tiwari
4. Text book of Microbiology by Pelczar
5. Text book of Medical Microbiology by Anantnarayan





D.B.F. Dayanand College of Arts and Science, Solapur

Mahatma Anand Swami Skill Development Centre

Department of Physics

M. Sc. I

**Name of Course: Certificate course in “Foundation of Competitive Exams
in Physics”**

Duration of the Course: 6 Months

Total Credits: 2

Structure of the Course

- Skill Development Course in Foundation of Competitive Exams in Physics will be implemented for M.Sc. I.
- There will be one theory paper of 50 marks.

Class	Paper	Total Lectures	Examination Marks	Total Credits
M.Sc. I	Theory	30	50	2

- Theory paper has **50 marks** for examination.
- The course is College Affiliated; the certificate of completion of course will be issued by college.



Course Objective:

- To provide fundamental awareness and knowledge of the key concepts for competitive exams.
- To equip students with a strong foundation in the various competitive examinations in physics.
- To empower students to approach competitive exams in Physics with confidence and competence.
- To instill problem-solving skills and critical thinking abilities required for excelling in competitive exams.
- To foster an understanding of the application of physics concepts in real-world scenarios.

Course Outcome:

Upon the completion of this course,

- Students will be adept at solving complex problems encountered in competitive exams.
- Students will acquire the necessary skills to analyze and answer questions in competitive exams.
- Students will develop a strategic approach to tackle general aptitude sections in various competitive exams.
- Students will be well-prepared and confident to excel in competitive exams requiring knowledge of physics.

Syllabus

(Total Credits: 02 and Contact Hrs. 30)

Unit-I Teaching Aptitude

- Teaching: Concept, Objectives, Levels of teaching (Memory, Understanding and Reflective), Characteristics and basic requirements.
- Learner's characteristics: Characteristics of adolescent and adult learners (Academic, Social, Emotional and Cognitive), Individual differences.
- Factors affecting teaching related to: Teacher, Learner, Support material, Instructional facilities, Learning environment and Institution.
- Methods of teaching in Institutions of higher learning: Teacher centered vs. Learner centered methods; Off-line vs. On-line methods (Swayam, Swayam Prabha, MOOCs etc.).
- Teaching Support System: Traditional, Modern and ICT based.



- Evaluation Systems: Elements and Types of evaluation, Evaluation in Choice Based Credit System in Higher education, Computer based testing, Innovations in evaluation systems.

Unit-II Research Aptitude

- Research: Meaning, Types, and Characteristics, Positivism and Post- positivistic approach to research.
- Methods of Research: Experimental, Descriptive, Historical, Qualitative and Quantitative methods.
- Steps of Research.
- Thesis and Article writing: Format and styles of referencing. □ Application of ICT in research.
- Research ethics.

Unit-III Comprehension

- A passage of text be given. Questions be asked from the passage to be answered.

Unit-IV Mathematical Reasoning and Aptitude

- Types of reasoning.
- Number series, Letter series, Codes and Relationships.
- Mathematical Aptitude (Fraction, Time & Distance, Ratio, Proportion and Percentage, Profit and Loss, Interest and Discounting, Averages etc.).

Unit-V Logical Reasoning

- Understanding the structure of arguments: argument forms, structure of categorical propositions, Mood and Figure, Formal and Informal fallacies, Uses of language, Connotations and denotations of terms, Classical square of opposition.
- Evaluating and distinguishing deductive and inductive reasoning.
- Analogies.
- Venn diagram: Simple and multiple use for establishing validity of arguments.
- Indian Logic: Means of knowledge.

Unit-VI Information and Communication Technology (ICT)

- ICT: General abbreviations and terminology.
- Basics of Internet, Intranet, E-mail, Audio and Video-conferencing.
- Digital initiatives in higher education.



- ICT and Governance.

Reference Books:

1. Dnyandeep SET/NET/JRF Anivarya Paper 1 Sampurna Margadarshak (Marathi) - Shashikant Shinde.
2. NTA UGC - NET/ SET/ JRF - Paper 1: Teaching and Research Aptitude - K V S Madaan.
3. Oxford NTA UGC Paper I for NET/ SET/ JRF - Harpreet Kaur.
4. Trueman's UGC NET/SET General Paper I - Teaching & Research Aptitude - Sajit Kumar.
5. UGC NET/JRF/SLET General Paper - 1 Teaching & Research Aptitude.

Question Paper Nature

Certificate course in Foundation of Competitive Exams in Physics

Time: 1 hr

Total Marks: 50

Q. Choose the **correct** alternative. (Each 2 marks)

1) -----

a) b) c) d)

2)

3)

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25)





D.B.F. Dayanand College of Arts and Science, Solapur.

Mahatma Anand Swami Skill Development Centre

Department of Botany

Name of Course: Certificate course in “Green House Technology & Hydroponics”

Duration of the Course: 6 Months

Total Credits: 2

SYLLABUS FOR

Certificate course in “Green House Technology & Hydroponics”

Structure of the Course:

- Skill Development Course in Hardware and Networking will be implemented for **M.Sc-I**.
- There will be one theory paper of **30 marks** and Practical of **20 marks**.

Class	Paper	Total Lectures	Examination Marks	Total Credits
M.Sc-I	Theory	15	30	1
	Practical	10	10	0.5
	Project & Oral	05	10	0.5
Total		30	50	2

- Practical examination is 10 marks and Duration of exam is **one hour**
- Theory paper has **30 marks** for examination.
- The Project may be On Green house Technology & Hydroponics techniques/Field work for 10 marks.
- The course is College Affiliated; the certificate of completion of course will be issued by college and submitted to university for fulfillment of curriculum.



Course Objectives:

1. To enable students for pursuing respectable career through Self-Employment.
2. Executive Employment, Entrepreneurship, Professional Career in the field of service sectors such as High –Tech Farming, Marketing.
3. To develop inter-twining competence in the field of Agriculture, Floriculture industries.
4. To develop the skilled to manage protective cultivation technology, hydroponics, construction of polyhouse.
5. To trained future industry professionals.

Course Outcomes:

1. Students get information about Greenhouse technology and Hydroponics and their application in different field and in farming business.
2. Students will be able to learn skills to manage protective cultivation technology, hydroponics, construction of polyhouse
3. To impart comprehensive knowledge with extra emphasis on practice.
4. Students will develop abilities in farming business.

Syllabus for Theory Paper (Total Credits: 01 and Contact Hrs.15)

Introduction to greenhouse:

Definition, concept, importance and scope

Greenhouse technology:

Operation, maintenance and management: light, temperature, humidity, pest
And disease control, Advantages Applications in agriculture

Structure and Construction of a Green House

Location, frame work for various types of green house, covering material, construction of typical glass house/poly house/ net house, construction of pipe framed greenhouse, Construction of floors and Layout, Design and development of low cost green house structures.

Green House Media and Nutrition Preparation of soil for planting Plant nutrition

Fertilizers, Nutrient deficiencies and toxicities, Carbon dioxide Water quality, Water sanitation,
Methods of irrigation: irrigation, Rules of watering, Hand watering, Perimeter watering,
Overhead sprinklers, Boom watering, Drip irrigation, Micro irrigation Fertigation,
,Humidification

Hydroponics

Methods of soil-less cultivation, media, Nutrient film technique (NFT), Advantages and disadvantages of hydroponics, Applications of hydroponics in Agriculture.



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs.15)

Minimum 5 practical's of 3 hours duration should be conducted.

1. Study of different types of greenhouses (any two)
2. Study of components of greenhouse, their fabrication, erection and construction details.
3. Study of Greenhouse cooling, heating and ventilation system
4. Study of horticultural equipment in greenhouse cultivation.
5. Study of Preparation of beds and planting methods in greenhouse.
6. Green house design and sketching
7. Study of different materials required for fabrication of green house.
8. Study of growing media for hydroponics systems
9. Study of suitable conditions for hydroponics
10. Field visits to Green Houses and writing of a report on the same

Reference Books:

1. **Nelson P.V.** 2011 Greenhouse, Operation and Management. Pearson publication
2. **Prasad Kumar** Greenhouse Management for Horticultural crops. Agrobios Publications
3. **U.R. Patel, G.A.Gadhiya & P.M. Chuhan** 2017 Fundamentals of Green house Technology, Notion Press
4. **Benedikt Hasek** 2018, Greenhouse Technology (Agricultural Sciences), Scitus Academics LLC
5. **Arupratan Ghosh** 2020, Green House Technology Principal & Practices, CRS Press



Question Paper Nature

Certificate course in Green House Technology & Hydroponics

Time: 1 hour

Total Marks: 30

Q.1. Choose the **most correct** alternative for the following and rewrite the sentence

1. 06

a) b) c) d)

2.

3.

4.

5.

6.

Q.2. Answer **any three** of the followings. 06

i)

ii)

iii)

iv)

Q.3. Answer **any two** of the followings. 06

i)

ii)

iii)

Q.4. Write a note on **any two** of the following. 06

i)

ii)

iii)

Q.5. Answer **any one** of the followings. 06

i)

ii)





D.B.F. Dayanand College of Arts and Science, Solapur.

Mahatma Anand Swami Skill Development Centre

Department of Botany

Name of Course: Certificate course in "Horticulture Techniques

Duration of the Course: 6 Months

Total Credits:2

SYLLABUS FOR

Certificate course in "Horticulture Techniques"

Structure of the Course:

- Skill Development Course in Hardware and Networking will be implemented for **B.Sc.- II**.
- There will be one theory paper of **30 marks** and Practical of **20 marks**.

Class	Paper	Total Lectures	Examination Marks	Total Credits
B.Sc-II	Theory	15	30	1
	Practical	10	10	0.5
	Project & Oral	05	10	0.5
Total		30	50	2

- Practical examination is 10 marks and Duration of exam is **one hour**
- Theory paper has **30 marks** for examination.
- The Project may be on Horticultural techniques/Field work for 10 marks.
- The course is College Affiliated; the certificate of completion of course will be issued by college and submitted to university for fulfillment of curriculum.



Course Objectives:

1. To study techniques in horticulture technology
2. To study disease management in horticulture crops
3. To study the flower cultivation methods , arrangement and their marketing
4. To study fruit cultivation, preservation technology
5. To study harvesting methods, skills in horticulture crops

Course Outcomes:

1. Students will understand the different techniques used in horticulture
2. Students will become aware about different diseases and their control measures
3. Students will learn the different cultivation methods arrangements and marketing of Flowers
4. Students will learn the various methods of cultivation and preservation technologies of fruits
6. Students will learn the harvesting methods of different economically important horticultural crops along with its skill.

Syllabus for Theory Paper (Total Credits: 01 and Contact Hrs.15)

A) Importance and divisions of Horticulture

Introduction and importance of horticulture

Scope for horticulture in India

Divisions of Horticulture – Pomology, Olericulture, Floriculture, Landscape gardening,

B) Horticultural Produce and Management of Pest and diseases

Methods of detection and diagnosis of insect pest and diseases

Host plant resistance, cultural, mechanical, physical, legislative, biological and chemical control.

Ecological management of crop environment.

Introduction to conventional pesticides for the insect pests and disease management

C) Floriculture

Introduction, Cultivation of important cut flowers and management of important pests and diseases: Rose, Gerbera and Marigold.

Flower arrangements, Packing and Marketing of cut flowers.

D) Fruit preservation technology

Physical - Drying, freezing, heat,

Chemical - sugar, salt, chemical preservatives.



E) Post Harvesting Handling

Importance of post-harvest technology.

Maturity indices Harvesting of horticultural crops

Manual and Mechanical methods of harvesting.

Methods used for hastening and delaying ripening: Chemicals that hasten ripening and chemicals that delay ripening.

Syllabus for Practical Paper (Total Credits: 01 and Contact Hrs.15)

Minimum 5 practicals of 3 hours duration should be conducted.

1. Study of tools and implements in horticulture.
2. Layout of different planting systems.
3. Preparation of fertilizer mixtures and field application
4. Cultivation methods for rose, gerbera, marigold
5. Study of branches of Horticulture
6. Flower arrangement
7. Study of common horticulture crop of diseases (any three)
8. Study of diseases management in horticulture crops
9. Study of harvesting methods in horticulture crops
10. Visit

Reference Books:

1. **Arunkumar K**, 2008, Innovative Horticulture New India Publishing Agency
2. **Dr. Ashok Yadav**, 2022, Fundamental of Horticulture, Bhavya Books
3. **Auxilia J**, 2021, Horticulture Principle & Practices, New India Publishing Agency
4. **S.P. Singh**, 2022, Scientific Horticulture, Scientific publisher
5. **Prasad S, Kumar S.**, 2014, Principles of Horticulture



Question Paper Nature
Certificate course in Horticulture Techniques

Time: 1 hour

Total Marks: 30

-
- Q.1. Choose the **most correct** alternative for the following and rewrite the sentence
1. 06
- a) b) c) d)
- 2.
- 3.
- 4.
- 5.
- 6.
- Q.2. Answer **any three** of the followings. 06
- i)
- ii)
- iii)
- iv)
- Q.3. Answer **any two** of the followings. 06
- i)
- ii)
- iii)
- Q.4. Write a note on **any two** of the following. 06
- i)
- ii)
- iii)
- Q.5. Answer **any one** of the followings. 06
- i)
- ii)





D.B.F. Dayanand College of Arts and Science, Solapur.

Affiliated to



**Punyashlok Ahilyadevi Holkar
Solapur University, Solapur.**

Name of Faculty: Philosophy

(Choice Based Credit System)

Syllabus: Certificate course in Applied Ethics

Name of Course: B.A.-III (Sem.-V)

Philosophy

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR

B.A.-III (Sem.-V) Philosophy

Certificate Course in Applied Ethics

Structure of the Course:

- Certificate Course in Applied Ethics will be implemented for **B.A.-III (Sem.-V) Philosophy**.
- There will be one theory paper of **50 marks** and Project of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the project will be conducted. The weightage of project is of **30 marks** for university external practical examination and **20 marks** for project and oral internal examination.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.A.-III (Sem.-V)	Theory	30	40	10	50	2
	Project	30	00	50	50	2
Total		60	40	60	100	4

- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**



Syllabus for Applied Ethics

(Total Credits: 02 and Contact Hrs. 30)

1) Applied Ethics : (Contact hrs:09)

- a) Ethics and applied ethics.
- b) Scope of applied ethics.
- c) Nature of profession and business
- d) Importance of applied ethics.

2) Role of Morality in Education : (Contact hrs:07)

- a) Importance of teaching profession.
- b) Problems in Educational Profession
- c) Code of Conduct for teachers.
- d) Code of Conduct for Students.

3) Role of morality in Legal Profession : (Contact hrs:07)

- a) Law and Morality.
- b) Importance of morality in legal profession
- c) Problems in legal Profession
- d) Code of Conduct for lawyers.

4) Role of Morality in Medical Profession : (Contact hrs:07)

- a) Moral code for medical profession
- b) Abuses in medical profession.
- c) Abortion and feticide.



Reference Books:

- | | | |
|---|---------------------|-----------------------|
| 1 | Applied Ethics : | Peter Singer |
| 2 | Practical Ethics | Peter Singer |
| 3 | नीतिमीमांसा | श्रीनिवास हरि दिक्षित |
| 4 | नितिशास्त्र | डॉ. सुनील साळुंके |
| 5 | उपयोजित नीतिशास्त्र | डॉ. सुनील साळुंके |
| 6 | उपयोजित नीतिशास्त्र | प्रा. माधवी कवी |



Question Paper Nature
Certificate course in Applied Ethics

Time: 2 hrs

Total Marks: 40

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08

- 1) -----
a) b) c) d)
2)
3)
4)
5)
6)
7)
8)

Q. 2. Answer **any four** of the followings. 08

- i)
ii)
iii)
iv)
v)

Q. 3. Answer **any two** of the followings. 08

- i)
ii)
iii)

Q. 4. Write note on **any two** of the following. 08

- i)
ii)
iii)

Q. 5. Answer **any one** of the followings. 08

- i)
ii)





D.B.F. Dayanand College of Arts and Science, Solapur

Mahatma Anand Swami Skill Development Centre

Department of Physics

B.Sc. II

Name of Course: Certificate course in Introduction to Medical Physics Instruments

Duration of the Course: 6 Months

Total Credits: 4

Structure of the Course

- Skill Development Course in **Introduction to Medical Physics Instruments** will be implemented for B.Sc. II.
- There will be one theory paper of 80 marks and practical + project of 20 marks.

Class	Paper	Total Lectures	Examination Marks	Total Credits
B.Sc. II	Theory	15	80	1
	Practical	10	10	0.5
	Project	05	10	0.5
Total		30	100	2

- The course is College Affiliated; the certificate of completion of course will be issued by college.

Course Objectives:

- Understand the basic principles of medical physics and its significance in healthcare.
- Identify and describe common medical physics instruments used in diagnostic and therapeutic applications.
- Demonstrate hands-on proficiency in operating selected medical physics instruments.



- Analyze and interpret data generated by medical physics instruments.
- Apply quality assurance measures to ensure the accuracy and safety of medical physics instruments.
- Understand the ethical considerations associated with the use of medical physics instruments in patient care.

Course Outcomes:

- Demonstrate proficiency in operating and manipulating various medical physics instruments.
- Develop problem-solving skills related to the identification and resolution of technical issues in medical instruments.
- Demonstrate the ability to implement safety measures and ensure the well-being of patients and healthcare professionals.
- Effectively communicate technical information related to medical physics instruments to colleagues, healthcare professionals, and the general public.
- Apply knowledge and skills gained in the course to real-world clinical situations.

Syllabus

Introduction to Medical Physics Instruments

Unit – 1: X-Ray Generator

- Introduction to X-Ray Generation
- X-Ray Tube Components
- X-Ray Production
- X-Ray Tube Characteristics
- Advanced X-Ray Generator Technologies

Unit – 2: Computed Tomography (CT) Scanners: Technology and Operation

- Introduction to CT Scanners
- Basic Principles of CT Imaging
- Components of a CT Scanner
- CT Imaging Techniques
- Clinical Applications of CT

Unit – 3: Stethoscope

- Introduction to Stethoscopes
- Anatomy of a Stethoscope
- Types of Stethoscopes



- How to Choose a Stethoscope
- Proper Stethoscope Usage
- Advances in Stethoscope Technology

Unit – 4: Tuning Fork

- Weber test performance
- Detection of air conduction hearing loss
- Detection of sensorineural hearing loss
- Consideration and limitation

Unit – 5: Thermometer

- Introduction to Temperature Measurement
- Types of Thermometers
- Anatomy of a Thermometer
- Proper Techniques for Temperature Measurement
- Digital Thermometer Usage
- Infrared Thermometer Applications

Unit – 6: Magnetic Resonance Imaging (MRI): Basics and Clinical Applications

- Introduction to MRI
- Basic Principles of Magnetic Resonance Imaging
- Anatomy of an MRI System
- Basics of Imaging Sequences
- Clinical Applications in Neuroimaging
- Emerging Technologies in MRI

Unit – 7: Ultrasound machines

- Introduction to Ultrasound Imaging
- Basics of Ultrasound Physics
- Components of an Ultrasound Machine
- Imaging Modes & Formation in Ultrasound
- Doppler Ultrasound Applications
- Obstetric and Gynecologic Ultrasound

Unit – 8: Electrocardiogram machine

- Introduction to Electrocardiography (ECG)
- Basic Principles of ECG
- Components of an ECG Machine



- ECG Waveforms and Intervals
- Clinical Applications of ECG

Reference Books:

1. Principles of Radiographic Imaging: An Art and a Science" by Richard R. Carlton and Arlene M. Adler.
2. Introduction to Medical Physics by Charles R. Martin
3. Medical Instrumentation: Application and Design by John G. Webster.
4. Radiation Therapy Physics by William R. Hendee and Geoffrey S. Ibbott
5. Bushong's Radiologic Science for Technologists: Physics, Biology, and Protection by Stewart C. Bushong.

Question Paper Nature

Certificate course in Introduction to Medical Physics Instruments

Time: 1 hr

Total Marks: 100

Q. Choose the **correct** alternative. (Each 2 marks)

1) -----

a) b) c) d)

2)

3)

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50)





D.B.F. Dayanand College of Arts and Science, Solapur.

Mahatma Anand Swami Skill Development Centre

Department of Microbiology

Name of Course: Certificate course in “Water and waste water analysis”

Duration of the Course: 6 Months

Total Credits: 2

SYLLABUS FOR
Certificate course in “Water and waste water analysis”

Structure of the Course:

- Skill Development Course in **Water and waste water analysis** will be implemented for **M.Sc. I**.
- There will be one theory paper of **30marks** and Practical of **20marks**.

Class	Paper	Total Lectures	Examination Marks	Total Credits
B.Sc.(ECS) -I	Theory	15	30	1
	Practical	10	10	0.5
	Project & Oral	05	10	0.5
Total		30	50	2

- Practical examination is 10marks and Duration of exam is **1.00 hr**.
- Theory paper has **30marks** for examination.
- The Project maybe on laboratory works/Field work/Industrial visit for 10marks.
- The course is College Affiliated; the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.



Objective of the course-

1. To provide the knowledge of basic principle of water and sewage microbiology, which help students to design, develop and operate industrial level fermentation process.
2. To develop skills of the students in the area of water and waste water analysis
3. To impart basic knowledge of standards for water and waste water .
4. To equip the students to pursue higher studies.
5. To prepare the student for an eventual job in water testing laboratory.
6. To prepare the student for the job in common effluent treatment plant.

Outcome of the course

- Student will have expertise in water and waste water analysis.
- Students will know about CPCB and MPCB standards.
- Student will be confident and having advantage and extra skills in there resume for the future career.

Syllabus for Theory Paper

Water and waste water analysis

Contact Hours- 15

Unit I- WATER MICROBIOLOGY-

08

- i) Sources of microorganisms in water.
- ii) Fecal pollution of water and its indicators.
- iii) Routine bacteriological analysis of water-
 - a. Tests for coliforms- Qualitative- Presumptive, confirmed and completed.
 - b. Differentiation of coliforms -IMViC test
 - c. Quantitative -MPN
- iv) Municipal water purification.

Unit II- SEWAGE MICROBIOLOGY-

07

- i) Sewage- Definition and different types.
- ii) Microflora of sewage
- iii) Physical chemical and biological properties of sewage- Colour, odour, pH, DO, TS,TSS,TDS, BOD and COD
- iv) Treatment of sewage- significance of sewage treatment preliminary, Primary, secondary and tertiary treatment



Syllabus for Practical Paper

Contact Hours- 15

- 1) Presumptive, confirmed completed test,
- 2) Differentiation of E. coli and Enterobacter IMViC test.
- 3) MPN
- 4) Detection of DO of water.
- 5) Determination of BOD of water
- 6) Determination of COD of water
- 7) Determination of hardness of water (Ca and Mg).
- 8) Determination of Chlorine in water.
- 9) Determination of TSS, TDS, TS.
- 10) Industrial visit/ Project.

Reference Books-

1. Pelczar Michael J., Chan Jr. E.C.S, Krieg Noel R. 1986. Microbiology: McGraw Hills Publication
2. Salle A. J. 1973. Fundamental Principles of Bacteriology. New York and London: McGraw-Hill Book Co.
3. Frobisher Martin. Fundamentals of Microbiology. 1962. Philadelphia. W. B. Saunders.
4. Environmental Microbiology – Maier
5. Microbial ecology – Fundamentals and applications - Atlas and Barth



Question Paper Nature
Certificate course in Water and waste water analysis

Time: 1hr

Total Marks:30

Q.1.Choose the **most correct** alternative for the following and rewrite the sentence. 08

- 1) -----
a) b) c) d)
2)
3)
4)
5)
6)
7)
8)

Q.2.Answer **any four** of the followings. 08

- i)
- ii)
- iii)
- iv)
- v)

Q.3.Answer **any two** of the followings. 14

- i)
- ii)
- iii)





D.B.F. Dayanand College of Arts and Science, Solapur.

Mahatma Anand Swami Skill Development Centre

Department of Chemistry

Name of Course: Certificate course in “Chemistry of Cosmetics and Perfumes”

Duration of the Course: 6 Months

Total Credits: 2

SYLLABUS FOR

Certificate course in “Chemistry of Cosmetics and Perfumes”

Structure of the Course:

- Skill Development Course in **Chemistry of Cosmetics and Perfumes** will be implemented for **B.Sc. II**.
- There will be one theory paper of **30 marks** and Practical of **20 marks**.

Class	Paper	Total Lectures	Examination Marks	Total Credits
B.Sc.-II	Theory	15	30	1
	Practical	10	10	0.5
	Project & Oral	05	10	0.5
Total		30	50	2

- Practical examination is 20 (10 + 10) marks and Duration of exam is **1.00 hr**.
- Theory paper has **30 marks** for examination.
- The Project may be on laboratory works/Field work/Industrial visit for 10 marks.
- The course is College Affiliated; the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.



Objective of the course-

1. To impart the theoretical and practical knowledge on basic principles of cosmetic and perfume chemistry.
2. To introduce students of Chemistry to the world of cosmetic chemistry.
3. To understand the cosmetics, cosmeceuticals.
4. To understand the cosmetics for the skin care products.
5. To get insight into the cosmetics skin, hair and nail care products.
6. To understand the basics of perfumes and perfume chemistry.
7. To provide a better knowledge of the characterization techniques for perfumes and cosmetics

Outcome of the course

1. Student will acquire the basic knowledge of cosmetic and perfume related to Chemistry.
2. Student will obtain the theoretical and practical knowledge cosmetic and perfume chemistry.
3. Student will understand the cosmetics for the skin care, hair and nail care products.
4. Student will expertise in the characterization techniques for perfumes and cosmetics.



Syllabus for Theory Paper

Chemistry of Cosmetics and Perfumes

Contact Hours- 15

Unit I- COSMETICS

05

Introduction to cosmetics: Definition, history and application. Cosmetology, Classification of cosmetics. Physiological effects of cosmetics, Modern developments in cosmetic chemistry, Introduction to cosmeceutical: definition, classification, mechanism of action.

Unit II- CHEMISTRY OF COSMETICS

05

Introduction to skin care cosmetics: classification, chemicals, properties, physiological effects. Study chemistry of some skin care products (creams, foundation, primer, lotions). Chemistry of nail polish and paints. Hair care products: Properties, classification, working mechanism, formulation, safety and chemistry of hair care products (shampoo, conditioner, gels, colouring agents etc.) Primary, secondary and tertiary treatment

Unit III- PERFUMES

05

Introduction to perfumes, history, classification of perfumes, the concept of aroma, types and physiological effects. Composition, formulation and working mechanism of perfume. Introduction to perfumery chemicals: Natural sources, natural identical and synthetic compounds.

Syllabus for Practical Paper

15

1. Preparation of Cosmetics (Hair and Skin) Products

Preparation of toners, cleansing agent, moisturizers, cream, body lotions, nail paint, nail paint remover, shampoos, conditioner, hair dye, hair serum

2. Preparation of Essential oils

Extraction of essential oils: Rose, Jasmine, Eucalyptus, Sandalwood

Preparation of Attar and Perfumes, Preparation and uses of Rose water



Reference Books-

1. Hilda Butler (editor), Poucher's Perfumes, Cosmetics, and Soaps 10th edition, Dordrecht: Kluwer Academic Publishers © 2010.
2. "Chemistry and Technology of the Cosmetics and Toiletries Industries", by D.F. Williams, Springer International Edition.
3. Anthony J. O'Lenick Jr.; Thomas G. O'Lenick, Organic chemistry for cosmetic chemists, Carol Stream, IL: Allured Publishing, © 2008
4. Beginning Cosmetic Chemistry by Schueller and Romanowsk, Allured Pub Corp; 3rd edition, 20089
5. Barel AO, Paye M, Maibach HI. Handbook of cosmetic science and technology. CRC Press; 2014

Question Paper Nature
Certificate course in Chemistry of Cosmetics and Perfumes

Time: 1 hr

Total Marks: 30

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08

- 1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)

Q. 2. Answer **any four** of the followings. 08

- i)
ii)
iii)
iv)
v)

Q. 3. Answer **any two** of the followings. 14

- i)
ii)
iii)





D.B.F. Dayanand College of Arts and Science, Solapur.

Mahatma Anand Swami Skill Development Centre

Department of Mathematics

Name of Course: Certificate course in “General Aptitude in Mathematics”

Duration of the Course: 6 Months

Total Credits: 2

**SYLLABUS FOR
Certificate course in “General Aptitude in Mathematics”**

Structure of the Course:

- Skill Development Course in General Aptitude in Mathematics will be implemented for **B.Sc. Part-II**
- There will be one theory paper of **30 marks** and Practical of **20 marks**.

Class	Paper	Total Lectures	Examination Marks	Total Credits
B. Sc. -II	Theory	20	30	1
	Practical	10	20	1
Total		30	50	2

- Practical examination is 20 marks and Duration of exam is **1.5 hrs.**
- Theory paper has **30 marks** for examination.
- The Project may be on laboratory works/Field work/Industrial visit for 20 marks.
- The course is College Affiliated; the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.



Objective of Course:

- To prepare students for campus placements.
- To introduce students about ratio and proportion which is used in daily life.
- To introduce process of calculating simple interest and compound interest.
- To introduce students about the mathematics used in day to day life.
- To introduce students about the exams conducted in banking sectors.

Course outcome:

Upon the completion of this course

- Students will be able to solve problems on ratio and proportion.
- Students will be able to calculate simple and compound interest.
- Students will be able to apply knowledge gained from the course in day-to-day life.

Syllabus for Theory Paper

(Total Credits: 01 and Contact Hrs. 20)

Problems on ages: Basic concepts, important formulae, problems on ages

Logarithm: Basic concepts, important formulae, problems on logarithm, applications of logarithms in simplification.

Ratio and Proportion: Basic concepts, examples on ratios, first, second and third proportion, examples on proportions

Percentage: Basic concepts, important formulae and shortcuts, examples on percentage.

Simple Interest: Basic concepts, important formulae, examples of simple interest.

Compound Interest: Basic concepts, important formulae, difference between simple and compound interest, examples on compound interest.



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

Minimum 05 practical's of 3 hrs duration should be conducted.

- 1) Problems on ages
- 2) Problems on logarithms
- 3) Problems on ratios
- 4) Problems on proportions
- 5) Problems on percentage-I
- 6) Problems on percentage-II
- 7) Problems on simple interest-I
- 8) Problems on simple interest-II
- 9) Problems on compound interest-I
- 10) Problems on compound interest-II

Reference Books:

- 1) R. S. Aggarwal: Quantitative aptitude for competitive examinations, S. Chand and Company Ltd.
- 2) Ramandeep Singh: Quantitative Aptitude, www.BankExamsToday.com



Question Paper Nature
Certificate course in General Aptitude in Mathematics

Time: 2 hr

Total Marks: 30

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 06

- 1)
a) b) c) d)
- 2)
3)
4)
5)
6)

Q. 2. Answer **any three** of the followings. 06

- i)
ii)
iii)
iv)

Q. 3. Answer **any two** of the followings. 06

- i)
ii)
iii)

Q. 4. Write note on **any two** of the following. 06

- i)
ii)
iii)

Q. 5. Answer **any one** of the followings. 06

- i)
ii)





D.B.F. Dayanand College of Arts and Science, Solapur

Mahatma Anand Swami Skill Development Center

Department of **Zoology**

Name of the Course: Certificate course in '**Basic Ornithology**'

Duration of the Course: 6 Moths

Total Credits: 2

SYLLABUS FOR
Certificate course in '**Basic Ornithology**

Structure of the Course:

- Skill Development Course in '**Basic Ornithology**' will be implemented for **B.Sc II**.
- There will be one theory paper of **25marks** and Practical of **25marks**.

Class	Paper	Total Lectures	Examination Marks	Total Credits
B.Sc.-II	Theory	15	25	1
	Practical	10	15	0.5
	Project & Oral	05	10	0.5
Total		30	50	2

- Practical examination is of 15 marks and Duration of exam is **1.00hr**.
- Theory paper has **25marks** for examination.
- The Project may be on laboratory works/Field work/Industrial visit for 10marks.
- The course is College Affiliated. The certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.

Objective of Course:

- To understand theoretical and practical aspects of Ornithology.
- To learn how birds evolved and are still evolving, their physical adaptation to fly, Acoustics and Courtship behaviour.
- To appreciate the diversity of birds of the world and understand the ecological importance of Birds and necessity for Conservation.
- To create awareness and education on role of birds in the world and how they interact with humans.



Course Outcome

- Students will understand the basics of ornithology and understand the role of birds in environment
- Students may assist as field assistants or work at nature reserves.
- Job opportunities in different institutions like Salim Ali Center for Ornithology and Natural History (SACON), Bombay Natural History Society (BNHS), Wildlife Institute of India (WII), Ashoka Trust for Research in Ecology and Environment (ATREE) etc.

Syllabus of Theory paper:

(Total Credits: 01 and Contact Hrs: 15)

Introduction to Ornithology

- Avian Diversity and Classification Major (04) Order of Class: Aves.
- Origin of Aves.
- Evolution and Speciation:
- Beak and Leg modification, Types of Feathers.

Anatomy and Physiology of Birds

- Basic Anatomy of Aves.
- Parental care and Courtship behaviour in Aves.

Life History

- Foraging Behaviour.
- Mating Behaviour.
- Breeding Behaviour.

Ecology and Ethology of Birds

- Types of Habitats of different bird groups.
- Nesting behaviour in different bird groups.
- Migration in Aves with examples from India.

Avian Conservation Concepts

- Major threats to the Avian diversity in India
Conservation Breeding Programmes (Great Indian Bustard and Vulture).

Syllabus for Practical

Total Credits: 01 Contact Hrs. 15 (Marks 15)

- 1) To study classification of birds observed on field (10 specimens).
- 2) To study various methods for studying ecology of Birds (Transects, Point count, Census etc).
- 3) To study communities of birds in different habitats (Wetland, Grassland, Forest, Agriculture etc).
- 4) To study courtship behavior of birds using field observation or videos with local examples.
- 5) To study the community structure of Birds within campus or local gardens (Shannon diversity indices).
- 6) To study beak and leg modification in birds using field observations.
- 7) To study different types of Feathers.
- 8) To study migration in birds using local case studies.
- 9) To study different types of nest using field observations, or photographs or Models.
- 10) To study the scientific photographic approach for Avian studies.



Reference Books:

- Book of Indian Birds –1941 Salim Ali (Author) digital version
- Birds of the Indian Subcontinent Paperback – Picture Book, 20 December 2016 by Richard Grimmett (Author), Carol Inskipp (Author), Tim Inskipp (Author)
- A Naturalist's Guide to the Birds of India Paperback – 1 January 2016 by Bikram Grewal (Author), Garima Bhatia (Author)
- The Complete Illustrated Encyclopedia of Birds of the World Hardcover – Illustrated, 1 January 2018 by David Alderton (Author)

**Question paper pattern:
Question Paper Nature
Certificate Course: Basic Ornithology**

Time 1 Hr**Total 25 Marks**

Question	Pattern	Marks
1	MCQ	10
2	Answer the following (Any 2) 1) 2) 3) 4) 5)	10
3	Answer the following (Any 1) 1) 2) 3)	05
	Total	25

Practical:

Certificate Course in : Basic Ornithology

Time 1 Hr**Marks 25**

Question	Pattern	Marks
1	To Study / Observation _____	5
2	Spotting 1 2 3 4 5	5
3	Viva	5
4	Project and Field Report	10
	Total	25





D.B.F. DAYANAND COLLEGE OF ARTS AND SCIENCE, SOLAPUR

MAHATHA ANAND SWAMI SKILL DEVELOPMENT CENTRE

Department of Zoology

Name of The Course : Instrumentation in Biology

Duration : 6 Months

CREDIT: 02

**SYLLABUS FOR
Instrumentation in Biology**

Structure of the Course:

- Skill Development Course in **Instrumentation in Biology** will be implemented for **M.Sc.I**.
- There will be one theory paper of 25marks and Practical of 25marks.

Class	Paper	Total Lectures	Examination Marks	Total Credits
M.Sc.-I	Theory	15	25	1
	Practical	10	15	0.5
	Project & Oral	05	10	0.5
Total		30	50	2

- Practical examination is 25marks and Duration of exam is **1.00hr**.
- Theory paper has **25marks** for examination.
- The course is College Affiliated. The certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum

Course Objectives

- 1) To Understand how various instruments in biology work
- 2) To understand the working principles.
- 3) To Gain proficiency in using biological instruments for data collection
- 4) To develop abilities to choose the right instruments for specific research needs.
- 5) To develop Understanding of the significance of precision, accuracy in biological measurements.
- 6) Maintain standards and safety protocols while using biological instrumentation.



Course Outcomes:

- a) To develop scientific technical expertise
- b) To familiarize with basic Instrumentation in biology
- c) To update new techniques in biology

Learning outcomes: After successfully completing this course, the students will be able to:

- Understand the purpose of technique, its proper use and possible modifications or improvements.
- Learn the theoretical basis of technique, its principle of working and its correct application.
- Learn the construction repair and adjustment of any equipment required for a technique.
- Learn the application and accuracy of technique.
- Learn the maintenance laboratory equipment/tools, safety hazards and precautions.
- Learn the basics of PCR techniques in context to current scenario of pandemics.

syllabus of Theory paper:

(Total Credits:01 and Contact Hrs.15 Marks 25)

Unit-I Principles and uses of Analytical instruments

- Electron Microscope (TEM, SEM),
- Cryopreservation of cells, tissues, organs and organisms, Cryotomy, Freeze drying and freeze fracturing techniques. Lasers in Biology and its applications X-Rays in Biology and its applications (10)

Unit-II Cell Culture Techniques

- Design and functioning of tissue culture laboratory, Culture media preparation, • Types of culture- monolayer, suspension,, feeder layers, cell Modern advances in cell culture techniques (10)

Unit-III Separation techniques and Radio- Labelling techniques

- Chromatography-TLC, paper chromatography, HPLC • Electrophoresis and its types • column fractionation • Centrifugation: Ultracentrifugation and sub-cellular fractionation. • Cell separation by- flow cytometry • Radio-label techniques in biology • Radioactivity: Counter Geigometry and Scintillation Counter, Autoradiography (15)

Unit-IV Advanced techniques in molecular diagnostics:

- DNA: sequencing-Principle and methods, next generation sequencing, genome sequencing, microarray • PCR: types of PCR, primer design, applications of PCR. (15)



Syllabus for Practical

Credit 01, Contact Hrs 15, Marks: 25

Title of Practicals

- 1 Principle and applications of different microscopes
- 2 To prepare Buffers of known pH and molarity and measurement of pH of various samples, Buffering capacity
- 3 Separation of amino acids by paper chromatography.
- 4 DNA extraction and isolation.
- 5 Principles of electrophoresis: Analysis of DNA samples by using gel electrophoresis.
- 6 DNA amplification by PCR
- 7 Cell separation by density gradient centrifugation
- 8 Submission of report based on visit to National/Local Biotechnology Laboratory

Suggested Reading Material:

- John, R.W. Masters: Animal Cell Culture. IRL Press.
- Robert Braun: Introduction of Instrumental Analysis. McGraw Hill International Editions.
- K. Wilson and K.H. Goulding: A Biologist Guide to Principles and Techniques of Practical Biochemistry. ELBS Ed.
- Patabhi V.: Biophysics. Narosa Publishing House.
- Bisen P. S., Mathur: Tools and Techniques in Life Sciences. CBS Publishers and Distributors.
- Keith Wilson and John Walker: Practical Biochemistry. Cambridge low price edition.
- Cooper Cell: A Molecular Approach: Second Edition.



Question Paper Nature

Certificate Course in Instrumentation in Biology:Theory

Time 1 Hr

TotalMarks 25

Answer the following 5 x 5=25

1

2

3

4

5

Certificate Course in Instrumentation in Biology Practical

Time 1Hr

Marks 25

I)	Identification	15
	Q1	
	Q2	
	Q3	
II)	Project and Oral	10



D.B.F.Dayanand College of Arts and Science,Solapur
Mahatma Anand Swami Skill Development Centre
Department of Sanskrit
Certificate Course in Purse Making
2023- 2024 Syllabus

● Types of Purse -

- 1) Potli bag
- 2) Samosa shape bag
- 3) Cross body purse
- 4) Simple 2 pocket purse
- 5) Single cut purse



D.B.F.Dayanand College of Arts and Science,Solapur
Mahatma Anand Swami Skill Development Centre
Certificate Course in Atiloksoundaryam

2023- 2024 अभ्यासक्रम

संस्कृत -

- प्राचीन भारतीय प्रसाधनाचा इतिहास
- प्रसाधन (Care and Nourishment)
- नाट्यशास्त्रानुसारं नेपथ्यम्
- षोडश शृंगार

Parlour

1. Parlour information
2. Types of skin
3. Facial (2 types)
4. Make up
5. Manicure
6. Head massage
7. Oil making

आयुर्वेद -

- आहार
- आरोग्य व सौंदर्य वर्धन
- कांतिवर्धक लेप
- अभ्यंग , मर्दन
- योग आसने व प्राणायाम
- प्रसाधनांचे मिश्रण
- सौन्दर्य वर्धनात पांचभौतिक चिकित्सेचे योगदान



- सौन्दर्य वर्धनात पंचकर्म चिकित्सेचे योगदान

ENTREPRENEURSHIP Development





D.B.F. Dayanand College of Arts and Science, Solapur.

Affiliated to



**Punyashlok Ahilyadevi Holkar
Solapur University, Solapur.**

Name of Faculty: Humanities

(Choice Based Credit System)

Syllabus: Certificate course in Marketing

Name of Course: B.A.-III (Sem.-V) / M.A.-II (Sem.-III)

Economics

(Syllabus to be implemented from June 2021)



SYLLABUS FOR B.A.-III (Sem.-V) / M.A.-II (Sem.-III) Economics Certificate Course in Marketing

Structure of the Course:

- Certificate Course in Stock Market will be implemented for **B.A.-III (Sem.-V) / M.A.-II (Sem.-III) Economics**
- There will be one theory paper of **50 marks** and Field visit/Project of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the students should submit field work/Project. The weightage of field work/Project is of **30 marks** and **20 marks** for presentation of field work/Project.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.A.-III (Sem.-V) / M.A.-II (Sem.-III)	Theory	45	40	10	50	3
	Field work/Project & Oral	15	30	20	50	1
Total		60	70	30	100	4

- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- **The Project may be based on Field work/Industrial visit for 30 marks. Its report should be submitted at the end of the SEM V for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**



Certificate Course in Marketing

SYLLABUS

(Total Credits: 04 and Contact Hrs. 60)

1. Introduction to marketing: Meaning of marketing, Nature and Scope of marketing, Core marketing concepts, Traditional marketing vs. Modern marketing, Functions of marketing, Importance of marketing, Role of marketing manager. **(10 Lectures)**

2. Marketing Planning : corporate and divisional strategic planning, Marketing planning, the marketing process, Contents of marketing plan, Nature and objectives of marketing research, Importance of marketing research, scope of marketing research, marketing information system. **(10 Lectures)**

3. New product development: challenges in new product development, managing the product development process, product dimensions, branding decisions, packaging, brand management. **(10 Lectures)**

4. Sales Promotion: Promotion tools - advertising, sales promotion, publicity, public relation direct marketing, personal selling. **(10 Lectures)**

5. Selling Process: Salesmanship and selling process, functions of salesman, selling process, society and marketing, Advertisement and its impact on sales. **(05 Lectures)**

Field Visit/ Project Work:

Field visit/Project (15 lectures)

Reference Books:

- 1) Indian Economy – Datt and Sundharam's
- 2) Indian Economy – Ramesh Singh
- 3) Marketing Management- Philip Kotler/Keller
- 4) Marketing Management- Callie Daum
- 5) Winning in the Digital Age- Nitin Seth
- 6) Principles of Marketing- S. H. H. Kazmi
- 7) New products Management- C. Merle Crawford and C. Anthony Di Benedetto
- 8) Handbook of Economics of Marketing- Jean-Pierre Dube Peter Rossi
- 9) Marketing and Economics- Sultan Karmally
- 10) Marketing, Economics and Banking- DezyKumari



Question Paper Nature
Certificate course in Marketing

Time: 2 hr

Total Marks: 40

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08

- 1) -----
a) b) c) d)
2)
3)
4)
5)
6)
7)
8)

Q. 2. Answer **any four** of the followings. 08

- i)
ii)
iii)
iv)
v)

Q. 3. Answer **any two** of the followings. 08

- i)
ii)
iii)

Q. 4. Write note on **any two** of the following. 08

- i)
ii)
iii)

Q. 5. Answer **any one** of the followings. 08

- i)
ii)





D.B.F. Dayanand College of Arts and Science, Solapur.

Affiliated to



**Punyashlok Ahilyadevi Holkar
Solapur University, Solapur.**

Name of Faculty: Social Sciences

(Choice Based Credit System)

Syllabus: Certificate course in Tour and Travel Management

Name of Course: M.A.-II (Sem-III)/B.A.-III (Sem-V) History

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR

M.A. II (Sem.III)/ B.A.-III (Sem.-V) HISTORY

Certificate Course in Tour and Travel Management

Structure of the Course:

- Certificate Course in Tour and Travel Management will be implemented for M.A. II (Sem.III) / B.A.-III (Sem.-V) HISTORY
- There will be one theory paper of 50 marks and Fieldwork/Project of 50 marks.
- The theory paper has 40 marks for university external examination and 10 marks for internal examination.
- At the end of Semester III/V, the Project presentation will be conducted. The weightage of fieldwork /Projec/Tour Reportt is of 30 marks and for Project presentation/ oral examination.20 marks .

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
M.A. II (Sem.III)/B.A.- III (Sem.-V)	Theory	45	40	10	50	2
	Fieldwork/Project & Oral	15	00	50	50	2
Total		60	40	60	100	4

- Duration of Fieldwork/Project & Oral examination is of **one day**.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- The Project may be on Field work/Tourist place visit for 50 marks. Its report should be submitted at the time of university examination for 02 credits.
- If the course is University Affiliated, then the certificate of completion of course will be issued by University.
- If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum



Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 45)

Unit I Concept of Tourism

Contact Hrs. 15

- A. Background- Ancient, Medieval, Modern and Contemporary
- B. Concept and definition of tourism
- C. Scope and characteristics of tourism
- D. Types of tourism

Unit II Tour and Travel Management in 21st Era

Contact Hrs. 10

- A. Introduction of Tour Management in Modern period
- B. Travel Agency- Government and Private
 - 1) Government- ITDC and MTDC
 - 2) Private Tour and Travel agencies
 - 3) International Tour and Travel Agencies
- C. New trends - Caravan

Unit III Tourist Guide and Hospitality Management

Contact Hrs. 10

- A. Tourist Guide- Definition, Qualification, Qualities of good guide
- B. Types of Hotels
- C. Lodging and Catering

Unit IV Passport and Visa Procedure

Contact Hrs. 10

- A. Types of Passports
- B. Types of Visa
- C. Procedure to get Passport and Visa

Fieldwork/Project/Tour Report

(Total Credits: 02 and Contact Hrs. 15)

Note: - 50 Marks Field Work/ Project/Tour Report



Recommended Readings

- 1. Bhide G.L. Prachin Bharat(Marathi) Phadke Publication, Kolhapur.**
- 2. Dr.Kathare,Dr.Patil,Dr.Sakhare Puratatva Vidya Aani Paryatan (Marathi) Vidya Books Publishers, Aurangabad.**
- 3. Information broucher of Maharashtra Tourism Development Corporation (MTDC)**
- 4. Information broucher of Indian Tourism Development Corporation (ITDC)**
- 5. Bhatiya A.K** Tourism in India-History and Development, Sterling Publication Pvt.Ltd. New Delhi.
- 6.Bhatiya A.K.** Tourism Developments, Principals and Practices , Sterling Publication, Pvt. Ltd. New Delhi.
- 7. Md.Abu Barkat Ali Travel and Tourism Management,PHI learning Publication (Kindle Edition),April 2015**
- 8. Rajat Gupta, Nishant Singh, Ishita Kirar Hospitality and Tourism Development ,Vikas Publishing House Pvt.Ltd.,Noida,U.P.**
- 9.Maharashtra Unlimited,MTDC Mumbai**
- 10. Krishna K. Kamra &** Basics of Tourism, Kanishka Publishers, Distributors, Mohinder Chand New Delhi.
- 11. James W. Morrison** Travel Agent and Tourism.
- 12. P.K.Mishra,J.K.Verma** Tourism in India New Century Publications



भौतिक (धर्मशिक्षा) प्रतियोगिता परीक्षा।

" कॉलेज " स्तर की परीक्षाओं के लिए कक्षा अनुसार पाठ्यक्रम

कक्षा	पाठ्यक्रम	अंक
10 + 1	धर्म शिक्षा - भाग बारहवां	100
10 + 2	धर्म शिक्षा - भाग बारहवां	100
बी० ए० प्रथम वर्ष/ एम० टी० टी०	(1) महात्मा हंसराज महात्मा खुशहाल चन्द लिखित (2) ईशोपनिषद	60 40 } 100
बी० ए० द्वितीय वर्ष	(1) सरल संक्षिप्त सत्यार्थ प्रकाश 1 - 5 समुल्लास (2) गीता युगल	60 40 } 100
बी० ए० तृतीय वर्ष	(1) सरल संक्षिप्त सत्यार्थ प्रकाश 6 - 10 समुल्लास (2) केजोपनिषद	60 40 } 100
एम० ए० / बी० एड / एम० एड	सरल संक्षिप्त सत्यार्थ प्रकाश	100

सभी कक्षाओं की पाठ्य पुस्तकें प्रकाशन विभाग, डी.ए.वी. कॉलेज प्रबन्धकर्ता समिति
आर्य समाज भवन, यू.पी. ब्लॉक, पीतनपुर, दिल्ली-110088 फोन नं. 27321552 में
उपलब्ध है। आप इन्हें सीधे आर्डर भेज कर अपनी आवश्यकतानुसार पुस्तकें मंगवा सकते हैं।



D. B. F. Dayanand College of Arts and Science, Solapur
Mahatma Anand Swami Skill Development Centre

Name of Department : Geography

Name of the Course : **Sustainable Agriculture Management**

- Type of course : Value Added
- Duration of the Course : 6 Months
- Medium of the course : Marathi
- Eligibility : 12th pass
- Intake Capacity : 150

• **Curriculum (Syllabus) :**

Objectives :

1. Satisfy human food and fiber needs;
2. Sustain the economic viability of farm operations;
3. Enhance the quality of life for farmers and society as a whole.
4. To propagate the ideas, practices and policies that constitutes the concept of sustainable agriculture.
5. To provide a thorough view of the consequences of farming practices on both human communities and the environment.
6. To empower the students with an economically viable, socially supportive and ecologically sound education on agriculture.
7. To provide education that emphasizes topography, soil characteristics, climate, pests, local availability of inputs and the individual grower's goals.

Course Overview

Course Overview Agricultural sustainability can be viewed from many perspectives including biological, ecological, social, economic, political and ethical. In this course, we will explore diverse aspects of agriculture and agricultural sustainability, primarily from various natural science perspectives. However, we will also use other perspectives to understand some of the diverse factors which influence, and are influenced by, agriculture and issues of sustainability. We will examine the resources and conditions required by agriculture, how agriculture uses resources, some of the intended and unintended consequences of agriculture, and various questions these raise about the sustainability. Examples will be drawn from California and several other parts of the world and from throughout the history of agriculture, including the present. Laboratory exercises and field trips will provide students with direct, in-field experiences with diverse aspects of a number of production practices and



agricultural systems. Students will develop and use tools to assess the sustainability of agricultural operations, gain experience using science-based information to understand the ecology and management of crops, soils and pests and visit a wide range of agricultural operations in the region. PLS 15 is new course and is designed to complement CRD 20, Food Systems. CRD 20 is offered during Fall quarters and emphasizes social science perspectives on food and agriculture, within the context of an interdisciplinary understanding of sustainability. CRD 20 and PLS 15 soon will be the introductory courses for a new major, Sustainable Agriculture and Food Systems.

1) Outcome of the course :

- i. Understanding Importance of Satisfy human food and fiber needs.
- ii. Understanding consequences of farming practices on both human communities and the environment.
- iii. The student will be able to explain the major aspects of agricultural practices and traditions through time and throughout the world.
- iv. The student will be able to explain in general the relationships among culture, economics, politics, science, and agricultural development. A solid understanding of the cross-cultural interactions and exchange that linked the world's people and facilitated agricultural development is also expected.

2) Syllabus in details (Contact Hour 60, Credits)

A. Part A :- Theory

Unit 1 :

Overview of Sustainable Agriculture

Introduction

Irrigation: definition and objectives.

Nature and Scope of Sustainable Agriculture.

Role of water in soil and plants- Irrigated agriculture vs. Rainfed agriculture, dry farming and dryland farming-definition

Concept of Sustainable Agriculture.

Unit 2:

Vegetable and Fruits, Importance and scope of commercial vegetable and fruit production - Global scenario of fruit production and export - Present status of vegetable and fruit production in the state.



Unit 3 :

Propagation by grafting - methods of grafting
Nursery techniques, Seedling selection
Waste Recycling - composting, Organic Farming,

Unit 4 :

Sustainable Agricultural Systems

Subsistence and Commercial Agriculture
Types of Agriculture
Integration of Crops and Livestock -Forestry, Mixed Farming, Fishing ,
Dairy Farming, Medicinal Crops
Urban Agriculture -Terrace & Balcony Farming etc.

Part B :- Practical /Projects

Project Work: (Field Work, Case Studies) The project /fieldwork is meant for students to understand vulnerabilities and to work on reducing Sustainable Agriculture Management and they do it. Projects are conceived creatively based on the geographic location and Agriculture opportunities.

References :

1. Balasubramaniyan, P and Palaniappan, S.P. 2001. Principles and Practices of Agronomy AgroBios(India)Ltd., Jodhpur.
2. Cox, G.W and Atkins, M.D. 1979. Agricultural Ecology : An Analysis of World Food Production Systems. W.H. Freeman and Company, San Francisco
3. De, G.C.1989.Fundamentals of Agronomy. Oxford & IBH Publishing Co., New Delhi.
4. Grigg, D.B. 1974. The Agricultural Systems of the World: An Evolutionary Approach. Cambridge University Press, Cambridge. Bagchi-Sen S. and Smith H. L., 2006: *Economic Geography: Past, Present and Future*, Taylor and Francis.
5. Chadha, K.L.2001. Hand Book of Horticulture,ICAR, New Delhi.



6. Das, P. C.1993. Vegetable crops in India.Kalyani Publishers
7. Gopalakrishnan, T. R. 2007. Vegetable Crops.New India Publishing Agency, New Delhi.
8. Hazra, P. and Som, M. G. 1999. Technology for vegetable Production and Improvement.NayaProkash, Calcutta

- **Examination pattern** : Annual Examination pattern
- **Total Marks :**
 - Theory paper (Duration 2 Hrs.) : 50 marks
 - Project (Duration 2 weeks) : 30 marks*
 - Practical work and Internal Examination : 20 marks
 - Maximum Marks : 100



DBF Dayanand College of Arts and Science, Solapur

Department of Psychology

Title of the course: Certificate Course in Guidance and Counselling.

Introduction: The complexity and variety of modern life takes heavy toll of human energy and resources. It, nevertheless provides limitless avenues for the application and employment of human resources .For correct and meaningful application of these resources it is necessary to know in detail how best these could be utilized to bring in maximum output and satisfaction.

Objectives of the course :

1. To make aware students about guidance and counselling.
2. To give students knowledge about professional counselling.
3. To develop ability to apply knowledge to face various challenges of life.

Eligibility of the course: 12th pass in arts/commerce/science or equivalent examination from recognized board.

Duration of the course: 6 months

Medium of the course: English / Marathi

Structure of the course:

Theory- 70 marks

Project- 30 marks .

Total- 100 marks.



Certificate Course in Guidance and Counselling

June 2022-23

Syllabus

Unit 1. Meaning and Nature of guidance. (8 Lectures)

- 1.1. Introduction to concept of guidance.
- 1.2 Definitions of guidance.
- 1.3 Need and scope of guidance.
- 1.4 Objectives and principles of guidance.
- 1.5 Types of guidance.

Unit 2. Meaning , Nature and scope of counselling (8 Lectures)

- 2.1. Introduction to counselling .
- 2.2 Definitions of counselling .
- 2.3. Need and scope of counselling.
- 2.4 Goals of counselling.
- 2.5 Ethics in counselling.
- 2.6.Difference between counselling and guidance.

Unit 3. Process of counselling. (8 Lectures)

- 3.1.Steps in counselling process.
- 3.2 Counselling interview.
- 3.3. Role of the counsellor.
- 3.4 Characteristics and the skills of good counsellor.

Unit 4. Types of counselling. (8 Lectures)

- 4.1 Counselling at school.
- 4.2 Counselling at college.
- 4.3 Child counselling.
- 4.4 Counselling for parents.
- 4.5 Family counselling.



- 4.6 Career counselling.
- 4.7 Vocational counselling.
- 4.8 Marriage counselling .
- 4.9 Psychological counselling.
- 4.10 Personality counselling.
- 4.11 Group counselling.
- 4.12 Counselling for special children.

Unit 5 . Techniques in counselling- Psychotherapies and psychological tests. (8 Lectures)

5.1 Psychotherapies-

- a) Psychoanalytic therapy.
- b) Behavioural therapy.
- c) Client- Centred therapy.
- d) Rational Emotive behavioural therapy.
- e) Family therapy.

5.2 Psychological tests-

- a) Personality measurement tests.
- b) Aptitude measurement tests.
- c) Interest measurement tests.
- d) Measurement of symptoms of psychological abnormalities.

Books for reference-

- 1) P.Bhola , Guidance and counselling , Lakhmi Narain Agarwal, Agra, 4th edition.
- 2) Rao S. Narayan , Counselling and Guidance, Tata Mcgraw-Hill, New Delhi.
- 3) Pawar and Choudhari , Counselling Psychology, Prashant publications, Jalgaon.
- 4) Sapkale and korde , Guidance and counselling , Prashant Publication, Jalgon.
- 5) Bhangale and mahajan , Counselling psychology, Prashant Publication , Jalgaon.



DBF DAYANAND COLLEGE OF ARTS AND SCIENCE, SOLAPUR

DEPARTMENT OF HISTORY AND AIHC

College Oriented Course

TOUR MANAGEMENT

Syllabus

Unit I: Tourism

- 1) Definitions
- 2) Scope

Unit II: Types of Tourism

- 1) Educational
- 2) Cultural
- 3) Social
- 4) Economic

Unit III: Management and Tourism

- 1) Guide
- 2) Tourist Agency
- 3) Hotel and Lodge

Unit IV: Tourist Places

- 1) Siddheshwar Temple, Solapur
- 2) Hattersang Kudal, South Solapur
- 3) Ajanta, Ellora, Mahabaleshwar, Raigad Fort

Reference Books

1. Tourism-Principles and Practices – Sampad Kumar
2. Parytak Margdarshika(Maharashtra)- P.S.Deshpande



PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR



Name of the Faculty: Humanities

Name of the Course: M. A. (English) Part – II

**Name of the Paper: Linguistic Competence for Advertising, Marketing and
Public Relations**



With effect from June-2021-22, 2022-23 & 2023-24

Paper – Linguistic Competence for Advertising, Marketing and Public Relations

SEMESTER

Unit: I Introduction to Linguistic Competence and communication Industry

- The concept of linguistic skills in English
- Linguistic skills and employability: Interlinking
- Career communication industry
- Drivers and dynamics of the communications industry
- Developing employability through effective language skills
-

Unit: II Linguistic Competence for drafting advertisement

- Advertising as means of communication
- Writing advertising slogans: rhythm and rhyme
- Use of Extreme adjectives, superlative phrases, glowing idioms and vocabulary
- Use of parts of speeches in drafting advertisement

Unit: III Linguistic Competence for Marketing

- Importance of effective language for marketing
- Requirement of linguistic skills at marketing workplace: writing ad copy, sales collateral, blogs and newsletters
- Enhancing language proficiency
- Marketing and Public speaking skills
- Marketing and Non Verbal skills

Unit: IV – Linguistic Competence for Public Relations

- Writing for clients: press releases, reports, feature articles and opinion pieces
- Conducting media interactions including invites, pitches and interviews
- Engaging clients with reports, proposals or even simple emails
- Posting on social media channels with tweets, Instagram captions or LinkedIn articles
- Networking — face-to-face or over the phone — with the media, clients or partners

Reference book:

- Foreign Languages in Advertising: Linguistic and Marketing Perspectives by Jos Hornikx and Frank van Meurs



Punyashlok Ahilyadevi Holakar Solapur University, Solapur

Name of the Course: M.A (English) Part-II

Name of the Paper: Linguistic Competence for Advertising, Marketing and Public Relations

Objectives:

Objectives of the course are to:

7. Introduce importance linguistic Competence in communication industry.
8. Create awareness of the type of language used in advertising.
9. Explain linguistic skills required for marketing.
10. Inform linguistic skills required for public relations.

Course Outcomes:

At the end of the course, students will be able to:

1. Demonstrate knowledge of linguistic skills in communication industry.
2. Obtain linguistic skills required for advertising, marketing and public relations.
3. Draft advertise, practice marketing and establish public relations.
4. Enhance employability skills.



**D.B.F Dayanand College of Arts and
Science**

**Mahatma Anand Swami kill development
course**

Department of Marathi

अभ्यासक्रम

**Name of the course : मराठी भाषा संवाद व लेखन
कौशल्ये**

1. क्र	घटक	तासेका	श्रेयाक
1	भाषिकसंवादचीमूलतत्वे 1. संवाद : स्वरूपवकार्य 2. संवादचीमाध्यमे 3. भाषिक संवाद : श्रवण भाषण वाचन लेखन 4. भाषिक संवादाची वैशिष्ट्ये	25	1
2	वक्तृत्व तत्र व कौशल्य 1. वक्तृत्व स्वरूप व कार्य 2. वक्तृत्वाची पूर्वतयारी व उपयोजन 3. वक्तृत्वाचे प्रसंग आणि प्रकार 4. प्रभावी वक्तृत्वाची वैशिष्ट्ये	25	1
3	भाषिक लेखनाची मूलतत्वे 1. लेखनाचे स्वरूप महत्त्व व कार्य 2. बातमी लेखन व वृत्तांत लेखन 3. अग्रलेख पुरवणीतील लेखन 4. वाचकांचा पत्रव्यवहार	25	1



4	जाहिरात लेखनस्वरूप व उपयोजन 1. जाहिरात संकल्पना व स्वरूप 2. वृत्तपत्रीयजाहिरात 3. आकाशवाणी जाहिरात 4. दूरदर्शनवाणीजाहिरात	25	1
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संदर्भ :

1. संवादशास्त्र: श्रीपाद जोशी संगम प्रकाशन, नागपूर
2. शासन व्यवहारात मराठी : भाषा संचलनालय, मुंबई
3. वक्तृत्व शास्त्र भाग एक व दोन : के. सी. ठाकरे
4. वक्तृत्व शास्त्र : न.वी.गाडगीळ
5. वृत्तविद्या: स. ह. देशपांडे
6. वृत्तपत्रे व संवादाचे स्वरूप : यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ नाशिक
7. व्यावहारिक मराठी : संपा. डॉ. स्नेहल तावर, स्नेहवर्धन प्रकाशन, पुणे
8. उपयोजित मराठी : डॉ. संजय लांडगे, दिलीपराज प्रकाशन, पुणे
9. वक्तृत्व आणि संभाषण कौशल्य : डॉ.श्रुती श्री वडकवाडकर, अक्षय प्रकाशन
10. संवादाची मूलतत्त्वे: यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ, नाशिक
11. संवादाची मूलभूत तंत्रे व कौशल्ये: यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ, नाशिक



D.B.F Dayanand College of Arts and Science

Mahatma Anand Swami skill development course

Department of Marathi

अभ्यासक्रम

Name of the course : ग्रंथ संपादन व प्रकाशन व्यवहार

1. क्र	घटक	तासेका	श्रियाक
1	संपादन: स्वरुप आणि संकल्पना अ) संपादनाची संकल्पना, स्वरुप ब) संपादनाचा हेतू व प्रेरणा क) संपादनापूर्वीची पथ्ये ड) संपादकाची काये व भूमिका	25	1
2	संहिता संपादन पध्दती आशस संपादन अ) विषय विवेचन-आशय संपादन, स्पष्टता, नेमकेपणा व) साहित्य व साहित्येतर लेखन प्रकाराचे संपादन क) भाषिक संपादन-भाषिक वाचनाची सुक्ष्मता शब्दयोजना, शीर्षक उपशीर्षक, परिच्छेद ड) अंतिम मुद्राणप्रत, अक्षर रेखांकन, रेखाचित्रे, मुख्यपृष्ठ रेखांकन, मांडणी आराखडा, ग्रंथ शीर्षक रेखांकन	25	1
3	ग्रंथ निर्मिती व्यवहाराचे स्वरुप अ) प्रकाशन व्यवहार घटक स्वरुप व कार्य १) मुद्रणाप्रत, मुद्रित शोधन, मुद्रक वितरक २) स्वामित्व हक्क, लेखक करार ३) ग्रंथ नोंदणी, आवृत्ती, पुनर्मुद्रण	25	1
4	ग्रंथ मुद्रणपूर्व प्रक्रिया अ) हस्तलिखित ब) टंकलेखन क) मुख्यपृष्ठ व सजावट	25	1

	ड) मुद्राण प्रक्रिया		
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संदर्भ ग्रंथ:

१. पंच व्यवहार-दशा आणि दिशा (लेख) अनिल कुल्लकणी, साहित्य चपराक, २०१७
२. प्रकाशन व्यवसाय परिचय- शरद गोगटे.
३. मराठी ग्रंथ प्रकाशनाची २०० वर्षे शरद गोगटे.
४. मराठी प्रकाशनाचे स्वरूप, प्रेरणा व परंपरा - अ.ह.लिमये
५. पॉप्युलर रिती पुस्तक - रामदास भरकळ, मौज प्रकाशन, मुंबई
६. मराठी लेखन कोश - अरुण फडके, अंकुर प्रकाशन, ठाणे
७. मराठी रोति पुस्तक - मृदुला जोशी, हर्ष प्रकाशन मुंबई २०१५
८. संपादक आणि संपादकीय - एकनाथ पोतदार, कौस्तुभ प्रकाशन नागपूर १९९१.
९. भाषिक सर्जन आणि उपयोजन - राजन गवस, अरुण शिंदे, गोमटेश्वर पाटील, दर्या प्रकाशन पुणे २०१२.
१०. प्रकाशन व्यवहार आणि संपादन डॉ. उज्ज्वला लक्ष्मण भोर प्रशांत पब्लिकेशन्स ३, प्रतापनगर, श्री संत ज्ञानेश्वर मंदिर रोड, नूतन मराठा विद्यालयाजवळ जळगाव २०२०.



**D.B.F. DAYANAND COLLEGE OF ARTS AND SCIENCE COLLEGE,
SOLAPUR.**

DEPARTMENT OF ENGLISH

SKILL DEVELOPMENT CENTER

A COURSE IN FUNCTIONAL ENGLISH (Duration Three Months)

OBJECTIVES

1. To acquaint students with grammatical concepts
2. To develop vocabulary skills.
3. To enable students to construct grammatical and meaningful structures of English
4. To introduce skills of communication
5. To make students familiar with soft skills

Topic 1 Basic Grammar

1. Parts of Speech
Noun, Pronoun, Article, Preposition, Conjunction, Interjection, Verb, Adverb, Adjective.
2. Developing vocabulary- Word formation, Process of word formation

Topic 2 Grammatical Categories

1. Tense
2. Degree
3. Voice
4. Speech

Topic 3 Everyday Communication

1. Greeting
2. Beginning and Ending Conversation
3. Farewell
4. Introductions



Topic 4 Situational Conversation

1. At the Post Office
2. At the Railway Station
3. At the Canteen/ Hotel
4. At the Bus Stand
5. At the Library
6. At the Bank

Topic 5 Communication skills

1. Note making and summarizing
2. Reading comprehension
3. Presentation and group discussion
4. Letter writing and resume
5. Formal and informal communication

Topic 6 Soft skills

1. Time management
2. Stress management
3. Team work and leadership
4. Management and negotiations skills
5. Adaptability skills

Course Outcome

1. Students are familiar with grammatical concepts.
2. Students are able to construct structures of English.
3. Students are able to communicate in different situations.
4. Students have developed vocabulary of English.
5. Students have learnt soft skills of English.

References:

- Norman Lewis. Word Power Made Easy. Goyal Delhi.
- Merriam Webster's Vocabulary Builder
- Wren and Martin. High School English Grammar and Composition.
- Geoffrey Leech. English Grammar for Today.
- Graham Lock. Functional English Grammar.





D.B.F. Dayanand College of Arts and Science, Solapur.

Affiliated to



Punyashlok Ahilyadevi Holkar Solapur University, Solapur.

Name of Faculty: Arts and Fine Arts (Choice Based Credit System)

Name of Course: A COURSE IN FUNCTIONAL ENGLISH

M.A.-II (Sem.-III)

Department of English

(Syllabus to be implemented w.e.f. June 2021)



SYLLABUS FOR

M.A.-II (Sem.-III) A COURSE IN FUNCTIONAL ENGLISH

Structure of the Course:

- A Certificate Course in FUNCTIONAL ENGLISH will be implemented for **M.A.-II (Sem.-III) English**.
- There will be one theory paper of **50 marks** and Practical of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester III, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination and **20 marks** for project and oral internal examination.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
M.A.-II (Sem.-III)	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
	Project	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**. There will be one practical session of **2.00 hrs** duration.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- **The Project may be on Language laboratory Practical/ Special Assignment on Language and Literature topic for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfillment of curriculum.**



Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 30)

OBJECTIVES OF THE COURSE

1. To acquaint students with grammatical concepts
2. To develop vocabulary skills.
3. To enable students to construct grammatical and meaningful structures of English
4. To introduce skills of communication
5. To make students familiar with soft skills

Topic 1 Basic Grammar

(Contact Hrs. 05)

1. Parts of Speech
Noun, Pronoun, Article, Preposition, Conjunction, Interjection, Verb, Adverb, Adjective.
2. Developing vocabulary- Word formation, Process of word formation

Topic 2 Grammatical Categories

(Contact Hrs. 05)

1. Tense
2. Degree
3. Voice
4. Speech

Topic 3 Everyday Communication

(Contact Hrs. 05)

1. Greeting
2. Beginning and Ending Conversation
3. Farewell
4. Introductions

Topic 4 Situational Conversations

(Contact Hrs. 05)

1. At the Post Office
2. At the Railway Station
3. At the Canteen/ Hotel
4. At the Bus Stand
5. At the Library
6. At the Bank

Topic 5 Communication skills

(Contact Hrs. 05)

1. Note making and summarizing
2. Reading comprehension
3. Presentation and group discussion
4. Letter writing and resume
5. Formal and informal communication



Topic 6 Soft skills**(Contact Hrs. 05)**

1. Time management
2. Stress management
3. Management and negotiations skills
4. Decision Making Skills
5. Creative and Critical Thinking
6. Problem solving situation
7. Interpersonal and intrapersonal skills

COURSE OUTCOME

1. Students are familiar with grammatical concepts.
2. Students are able to construct structures of English.
3. Students are able to communicate in different situations.
4. Students have developed vocabulary of English.
5. Students have learnt soft skills of English.



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

- **Minimum 05 practicals of 3 hrs duration should be conducted.**

1. Group Discussion Practice
2. Interview Techniques
3. Language Lab Practice
4. Self Introduction Practice
5. Debate Practice

References:

- Norman Lewis. Word Power Made Easy. Goyal Delhi.
- Merriam Webster's Vocabulary Builder
- Wren and Martin. High School English Grammar and Composition.
- Geoffrey Leech. English Grammar for Today.
- Graham Lock. Functional English Grammar.

Course Co-Ordinator

Dr. N. N. Londhe

Professor and Head



**Question Paper Nature Certificate course in
A COURSE IN FUNCTIONAL ENGLISH**

Time: 2 hr

Total Marks: 40

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08

- 1)
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)

Q. 2. Answer **any four** of the followings. 08

- i)
ii)
iii
)
iv
)
v)

Q. 3. Answer **any two** of the followings. 08

- i)
ii)
iii
)

Q. 4. Write note on **any two** of the following. 08

- i)
ii)
iii
)

Q. 5. Answer **any one** of the followings. 08

- i)
ii)



डी.बी.एफ.दयानंद कला एवं शास्त्र महाविद्यालय, सोलापुर

हिंदी विभाग

अनुवाद कौशल्य आधारित कोर्स 2023–2024.

एम.ए.भाग–1 हिंदी

पाठ्यक्रम

• अध्ययनार्थ विषय

इकाई 1 अनुवाद (Lectures 10, Credit 1)

- 1 अनुवाद : अर्थ, परिभाषा और स्वरूप
- 2 अनुवाद के प्रकार
- 3 अनुवादक के गुण
- 4 सफल अनुवाद की विशेषताएँ

इकाई 2 विज्ञापन (Lectures 10, Credit 1)

1. विज्ञापन : परिभाषा एवं स्वरूप
2. विज्ञापन के तत्व
3. विज्ञापन के प्रकार
4. विज्ञापन का महत्त्व

Name of Faculty :

1. **Mr. N.M. Harale**
2. **Mr. M.B.Koli**



DBF DAYANAND COLLEGE OF ARTS AND SCIENCE, SOLAPUR

DEPARTMENT OF HISTORY AND AIHC

College Oriented Course

Brahmi And Modi Lipi

Syllabus

Unit I : Introduction Brahmi Script

- a) Origin, Nature, Development
- b) Inscriptions – Ashokas inscriptions and
Samudragupta – Allahabad Prashasti Inscription
- c) Shak Samvat, Vikarm Samvat

Unit II : Introduction Modi Script

- a) Origin, Nature, Development
- b) Modi documents – Maratha and British period
- C) Scope of Modi Script in Modern Life

Unit III : Field Work

Unit IV : Project Writing

Reference Books

1. Purabhilekhvidya- Shobana Gokhale
2. Modi Lipi Prachar Prasar Pustika- Purabhilekh Sanchanalay,
Govt. of Maharashtra
3. Early India- Romila Thapar



D.B.F.Dayanand College of Arts and Science,Solapur
Mahatma Anand Swami Skill Development Centre
Department of Political Science
Certificate Course in Soft Skills
2023- 2024 Syllabus

1. Soft skills...meaning, nature.

Difference between Soft skills and hard skills.

2. Importance of Soft skills in present era.

- Personality Development
- Career
- Interpersonal Relations

3. Important soft skills

- Communication skills
- Motivation
- Team building
- Problem solving
- Creativity
- Antiques and manners.
- Resume writing
- Interview technique.

4 interactive sessions



PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR

Name of the Course: **B. A. –III**

Name of the Paper: **Content Writing and Editing in English Language**

Unit: I Introduction to Content Writing and Editing

- Origin and need of content writing
- Career in content writing
- Types of content writings
- The Concept of Content Marketing
- Difference between Academic and Content Writing.

Unit: II Structuring and Writing Quality Content

- Brainstorming and Collection of Material
- Proof Reading Techniques
- How to Structure a Book and ensure content Quality?
- Documentation and Formatting

Unit: III Copy Writing, Sales, Advertising and Promotion.

- Writing Newsletters, Product Descriptions and Press Releases
- Importance of Page Layout and Text Outline
- Effective Writing Techniques
- Writing Articles
- Mistakes to Avoid

Unit: IV – Digital Content Writing

- Video scripts
- Email newsletters
- Keynote speeches
- Social media posts
- Podcast titles
- Web page copy
- YouTube video descriptions
- Blog

List of References:

1. A. Z. Gill, Content Writing: A helpful Guide,





D.B.F. Dayanand College of Arts and Science, Solapur.

Mahatma Anand Swami Skill Development Centre

Department of Chemistry

Name of Course: Certificate course in “Business Skills for Chemists”

Duration of the Course: 6 Months

Total Credits: 2

SYLLABUS FOR
Certificate course in “Business Skills for Chemists”

Structure of the Course:

- Skill Development Course in Business Skills for Chemists will be implemented for **M. Sc.-I Chemistry**
- There will be one theory paper of **50 marks**

Class	Paper	Total Lectures	Examination Marks	Total Credits
M. Sc.-I Chemistry	Theory	20	30	1
	Project	05	10	0.5
	Oral	05	10	0.5
Total		30	50	2

- Theory paper has **40 marks** for examination.
- The Project may be on laboratory works/Field work/Industrial visit for 20 marks.
- The course is College Affiliated; the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.



Objective of Course:

- To impart enhance the business and entrepreneurial skills of postgraduate chemistry students and improve their employment prospects.
- To enable orient the students to understand the industry linkage with chemistry, challenges and business opportunities.
- To provide students expose the students to the concepts of intellectual property rights, patents and commercialization of innovations.

Course outcome:

Upon the completion of this course

- Learn basics skills of business and project management.
- Understand the process of product development and business planning that includes environmental compliancy.
- Learn the process by which technical innovations are conceived and converted into successful business ventures.
- Understand the intellectual property rights and patents which drive business viability and commercialization of innovation.
- Relate to the importance of chemistry in daily life, along with the employment and business opportunities. They will effectively use the skills to contribute towards the well-being of the society and derive commercial value.

Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 30)

Chemistry in industry

Current challenges and opportunities for the chemistry-based industries.

Role of chemistry in India and global economies. Chemistry based products in the market.

(Lectures: 02)

Business Basics

Key business concepts, Business plans, Market need, Project management, Routes to market, Concept of entrepreneurship.

(Lectures: 03)

Commercial Realization and Case Studies

- Commercialization
- Case study of Successful business ideas in chemistry
- Case study of Innovations in chemistry
- Financial aspects of business with case studies

(Lectures: 10)

Intellectual Property Rights

Introduction to IPR & Patents



(Lectures: 05)

Environmental Hazards

Industries involving hazardous chemicals. Importance of development of cost-effective alternative technology. Environmental ethics.

(Lectures:10)

Reference Books:

1. www.rsc.org
2. Nweke, L.I.(2002),Business Concepts and Perspectives, Springfield Publishers.
3. Silva, T. D. (2013), Essential Management Skills for Pharmacy and Business Managers, CRC Press.

Teaching Learning Process:

- Classroom teaching board method or power point presentations
- Classroom interactions and group discussions
- Through videos and online sources
- Visit to chemical industries for real understanding of whole process.

Assessment Methods:

- Written examination and class tests
- Oral presentation of project proposal along with written assignment.



Question Paper Nature
Certificate course in Business Skills for Chemists

Time: 1 hr

Total Marks: 30

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 06

- 1)
a) b) c) d)
- 2)
3)
4)
5)
6)

Q. 2. Answer **any three** of the followings. 06

- i)
ii)
iii)
iv)

Q. 3. Answer **any two** of the followings. 06

- i)
ii)
iii)

Q. 4. Write note on **any two** of the following. 06

- i)
ii)
iii)

Q. 5. Answer **any one** of the followings. 06

- i)
ii)



CBCS Pattern B.A. Hindi Sem. VI
Certificate Course In Rojgarparak Hindi
प्रश्नपत्र का नाम : रोजगारपरक हिंदी (प्रमाणपत्र कोर्स)
(Credit Theory (04) Practical (00))
Total Theory Lecture (60) Credit 4

अध्ययनार्थ विषय

इकाई 1 हिंदी भाषा का सामान्य अध्ययन

Lecture-15, Credit-1

- हिंदी का सामान्य अध्ययन
- हिंदी व्याकरण : विलोम, वाक्य एवं वर्तनी शुद्धि, अनेक शब्दों के लिए एक शब्द, तत्सम एवं तद्भव शब्द, पर्यायवाची शब्द
- अनुवाद का स्वरूप तथा द्विभाषिक ज्ञान : हिंदी-अंग्रेजी
- भाषिक सम्प्रेषण कौशल
- लेखन कौशल

इकाई 2 प्रयोजनमूलक हिंदी और रोजगार

Lecture-15, Credit-1

- हिंदी के द्वारा प्रशासकीय क्षेत्र में रोजगार
- राजभाषा अधिकारी
 - हिंदी अधिकारी
 - हिंदी अनुवादक

इकाई 3 हिंदी भाषा कौशल

Lecture-15, Credit-1

- हिंदी में वाक्चातुर्य के द्वारा रोजगार
- निवेदक
 - रेडियो जॉकी
 - समाचार वाचक
 - पर्यटन मार्गदर्शक

इकाई 4 हिंदी लेखन और रोजगार

Lecture-15, Credit-1

- हिंदी में लेखन के द्वारा रोजगार
- पटकथा लेखन



- संवाद लेखन
- गीतकार
- संपादक
- समाचार लेखक
- प्रूफ शोधन

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
1	—	रोजगारपरक हिंदी

संदर्भ ग्रंथ :

1. मीडियाकालीन हिंदी का स्वरूप एवं संभावनाएँ—डॉ. अर्जुन चव्हाण, राधाकृष्ण प्रकाशन, दिल्ली
2. संपादन पृष्ठसज्जा और मुद्रण—प्रो. रमेश जैन
3. व्यावसायिक हिंदी—प्रो. रहमतुल्ला, वाणी प्रकाशन, नई दिल्ली
4. इलेक्ट्रॉनिक मीडिया बदलते आयाम—डॉ. मिश्र, डॉ. अमरनाथ
5. लेखन संपादन और मुद्रण—ओम गुप्ता



D.B.F.Dayanand College of Arts and Science,Solapur

Mahatma Anand Swami Skill Development Centre

Department of Sanskrit

Certificate Course in Yoga

2023- 2024 अभ्यासक्रम

- . योगशास्त्राचे महत्व
- . हठयोग आणि शुद्धि क्रिया
- . पातंजल योगदर्शन
- . शरीरशास्त्र व आरोग्य
- . योगाची विस्तारित मूल्ये
- . ताण तणाव आणि योग
- . सूक्ष्म व्यायाम व षटक्रिया
- . आसने
- . प्राणायाम
- . ध्यान



सुधारित अभ्यासक्रम
Solapur University, Solapur.
Skill Development Center
सर्टिफिकेट कोर्स इन योगा

उद्देश:

- १) योग संस्कृती मुळापासून समजून घेऊन सक्षम असा योग प्रवीण समाज घडविणे.
- २) योगाभ्यासाद्वारे समाजाचे शारीरिक, मानसिक, बौद्धिक तसेच सामाजिक स्वास्थ्य अबाधित व निरोगी राहिल हे पाहणे.
- ३) योगाभ्यासाद्वारे विद्यार्थ्यांचा व्यक्तिमत्व विकासास चालना देणे.

संधी:

- १) ज्यांना योग या विषयामध्ये विशेष रुची व आवड आहे त्यांना अष्टांग योग पद्धतीचे मार्गदर्शन व योगातील अन्य प्रवाहांची माहिती सदर अभ्यासक्रमाद्वारे होईल.
- २) ज्या इच्छुकांना योग प्रशिक्षक व्हायचे असेल त्यांना सदर अभ्यासक्रम पूर्ण तयारी म्हणून अतिशय उपयुक्त ठरेल.

मर्यादा:

- १) सदर अभ्यासक्रमाद्वारे योग हा विषय सारांशाने व प्राथमिक स्वरूपात शिकवला जाणार आहे.
- २) परिपूर्ण योगोपचाराबद्दल सखोल ज्ञान मिळवण्यासाठीची पूर्वपीठीका म्हणून सदर अभ्यासक्रम आहे.

विद्यार्थी पात्रता:

- १) विद्यार्थी किमान १० वी परीक्षा उत्तीर्ण हवा.
- २) विद्यार्थ्यांचे वय किमान १६ वर्षे पूर्ण असावे.

प्रशिक्षक पात्रता:

- १) प्रचलित मान्यता प्राप्त योग प्रशिक्षण संस्था मधील ३ वर्षे अध्यापनाचा अनुभव असलेले योग शिक्षक अथवा
- २) बी.ए.एम.एस व योगामधील प्राविण्य अथवा
- ३) क्वालिटी कौन्सिल ऑफ इंडिया (लेव्हल १) मान्यता प्राप्त योग प्रशिक्षक

अभ्यासक्रम कालावधी: ६ महिने (जुलै ते डिसेंबर / जानेवारी- जून) दर शनिवार, रविवार सकाळी/संध्याकाळी २ तास

अभ्यासक्रम शुल्क: रु.२०००

माध्यम: मराठी

वर्ग मर्यादा: ३० विद्यार्थी



पाठ्यक्रम- योग माहितीपर तासिका

घटक क्रमांक	घटकाचे नाव	कालावधी
१	योगशास्त्राचे महत्व	
१.१	शैक्षणिक जीवनात महत्व	१
१.२	आधुनिक जीवनात महत्व	१
१.३	योगाच्या व्याख्या आणि ४ प्रमुख योग	१
२	हठयोग आणि शुद्धि क्रिया	
२.१	बलोपासना	१
२.२	आहार, आरोग्य- त्रिगुणांसह	१
२.३	बंध, मुद्रा व क्रिया	१
३	पातंजल योगदर्शन	
३.१	यम	१
३.२	नियम	१
३.३	आसन	१
३.४	प्राणायाम	१
३.५	प्रत्याहार, धारणा, ध्यान व समाधी	१
३.६	योगसूत्रे- चित्त, वृत्ती, क्लेश	१
४	शरीरशास्त्र व आरोग्य	
४.१	शरीरसंस्थांचा परिचय	२
४.२	जाणीवांचा विकास	१
४.३	शारीरिक, मानसिक व सामाजिक स्वास्थ्य	१
५	योगाची विस्तारित मूल्ये	
५.१	आरोग्याची व्याख्या	१
५.२	मानवी देह-वेदांतिक दृष्टीकोन- पंचमहाभूतांचा परिचय	१
६	ताण तणाव आणि योग	
६.१	सत्वर, जलद व दीर्घ श्वासन आणि योग निद्रा	१
६.२	मनोकायिक ताण	१
६.३	प्रार्थना व श्लोक	१
६.४	ओंकार मनःस्वास्थ्य /साधना	२
६.५	आनंद मीमांसा	१
		२४ तास



पाठ्यक्रम- कौशल्य विकास प्रात्यक्षिक

घटक क्रमांक	प्रात्यक्षिक प्रकार	कालावधी
१	सूक्ष्म व्यायाम व षटक्रिया	
१.१	सूक्ष्म व्यायाम	२
१.२	षटक्रिया	८
१.३	सूर्य नमस्कार	४
२	आसने	
२.१	दंड स्थिती मधील आसने – १०	९
२.२	बैठक स्थिती मधील आसने – १०	९
२.३	शयन स्थिती मधील आसने – १०	९
२.४	विपरीत शयन स्थिती मधील आसने – १०	९
२.५	दीर्घ शवासन	३
३	प्राणायाम	
३.१	गतीनुसार श्वसनाचे प्रकार	२
३.२	प्राणायाम – ८ प्रकार	८
४	ध्यान	
४.१	कुंभक, मुद्रा, त्राटक, ध्यानात्मक असं, बंधासह ध्यान पद्धती	६
४.२	प्रार्थना व मंत्रोच्चार	७
		७६ तास

परीक्षेचे स्वरूप

लेखी परीक्षा – १०० गुण (कालावधी ३ तास)

प्रात्यक्षिक परीक्षा – १०० गुण

उत्तीर्ण होण्यासाठी लेखी व प्रात्यक्षिक परीक्षेमध्ये प्रत्येकी किमान ४० गुण मिळणे आवश्यक

परीक्षेस बसण्यासाठी किमान ६०% उपस्थिती आवश्यक

प्रश्नपत्रिकेचे स्वरूप खालीलप्रमाणे असेल.



लेखी परीक्षा – एकूण गुण १०० (कालावधी ३ तास)

प्रश्न क्र. १. रिकाम्या जागा भरा. (८)	गुण ०८
प्रश्न क्र. २. एका वाक्यात उत्तरे द्या. (१०)	गुण १०
प्रश्न क्र. ३. जोड्या लावा. (८)	गुण ०८
प्रश्न क्र. ४. फक्त नावे द्या. (८)	गुण ०८
प्रश्न क्र. ५. थोडक्यात उत्तरे द्या. (कोणतेही ४)	गुण ०८
प्रश्न क्र. ६. स्थान व कार्ये सांगा. (कोणतेही ७)	गुण १४
प्रश्न क्र. ७. लाभ सांगा. (५)	गुण १०
प्रश्न क्र. ८. टिपा लिहा. (कोणत्याही २)	गुण १०
प्रश्न क्र. ९. श्लोक पूर्ण करून अर्थ लिहा. (२)	गुण १०
प्रश्न क्र. १०. सविस्तर उत्तर लिहा. (कोणतेही २)	गुण १४

प्रात्यक्षिक परीक्षा – एकूण गुण १००

१. सूर्यनमस्कार	गुण १०
२. योगासने	गुण ४०
३. प्राणायाम	गुण २०
४. बंध,मुद्रा व क्रिया	गुण १०
५. तोंडी प्रश्न	गुण २०





D.B.F. Dayanand College of Arts and Science, Solapur.

Affiliated to



**Punyashlok Ahilyadevi Holkar
Solapur University, Solapur.**

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in Herbal Technology

Name of Course: M.Sc.-II (Sem.-III) **BOTANY**

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR B.Sc.-III (Sem.-V) / M.Sc.-II (Sem.-III) Botany Certificate Course Herbal Technology

Structure of the Course:

- Certificate Course in **Herbal Technology** will be implemented for **M.Sc.-II (Sem.-III) Botany**.
- There will be one theory paper of **50 marks** and Practical of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination and **20 marks** for project/field visit / Industrial visit and oral internal examination.

Class Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.Sc.-III (Sem.-V)	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
/ M.Sc.-II (Sem.-III)	Project & field visit / Industrial visit field visit / Industrial visit Oral	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**. There will be two practical's each of **3.00 hr** duration.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.



- **The Project may be on laboratory works/Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**

Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 30)

Course objectives:

- 1) The aim of the herbal technology course is to provide post graduates with a good knowledge of the basic and applied know-how and professional skills in Herbal drug Science and Technology and the necessary training.
- 2) They will acquire operative know-how and be able to carry out technical and Management tasks and professional activities in the areas of transformation of Medicinal herbs, management of the quality of the processes, marketing
- 3) Use of Medicinal plants and derivatives for use in herbal, food and cosmetic products
- 4) They will acquire skill to identify medicinal plants, and drug preparation from medicinal plants.
- 4) At the end of the course, they will have acquired the following skills: The recognition, collection and preservation of medicinal plants. Analyses and dosage of active ingredients. The biological effects of medicinal plants. The toxicological aspects of active ingredients and finished products. The study, design, management, control and conduction of the processing systems of medicinal plants and derivatives. medicinal plant products and derivatives. The possible application of medicinal plants as health Products, including the food and cosmetics sectors.



Syllabus of Plant Biotechnology

30 L

Unit 1: Herbal medicines: history and scope - definition of medical terms - role of medicinal plants in Siddha systems of medicine; General methods of extraction, isolation and purification of phytoconstituents. (5 L)

Unit 2: Pharmacognosy - systematic position medicinal uses of the following herbs in curing various ailments; tulsi, ginger, fenugreek, Indian Goose berry and ashoka. (5L)

Unit 3: Phytochemistry - Phytochemical study Definition, occurrence, chemistry, isolation, estimation and biogenesis of alkaloids, glycosides, plant phenols, resins, terpenes and terpenoids, phospholipids and steroids active principles and methods of their testing - identification and utilization of the medicinal herbs; *Catharanthus roseus* (cardiotonic), *Withania somnifera* (drugs acting on nervous system), *Clerodendron phlomoides* (anti-rheumatic) and *Centella asiatica* (memory booster). (8L)

Unit 4: Methods of Preparation of Extracts: Principles of extraction and selection of suitable extraction method; Different methods of extraction including maceration, percolation, hot continuous extraction, pilot scale extraction and supercritical fluid extraction with their merits and demerits; Purification and Recovery of Solvents. drug adulteration - types, methods of drug evaluation - biological testing of herbal drugs - phytochemical screening tests for secondary metabolites (alkaloids, flavonoids, steroids, triterpenoids, phenolic compounds) (9L)

Unit 5: Medicinal plant: micro propagation of important species (*Withania somnifera*, neem and tulsi- herbal foods-future of pharmacognosy) (3 L)



Practical's in Plant Biotechnology

1. Preparation of Ayurvedic formulation like Asava, Arista
2. General methods of screening of natural products for the following Biological activities. Anti-inflammatory Activity/ Cardiac Activity/ Antibacterial Activity.
3. General methods of screening of natural products In-vitro Antioxidant Activity.
4. Determination of ascorbic acid (vitamin C) by UV spectroscopic method in various herbal formulations.
5. Determination of natural herbal products by UV Spectroscopic method.
6. Preparation of some important extracts by using preliminary Scale Extraction Plant.
7. Isolation and estimation of phytoconstituents by TLC.
8. Phytochemical test for alkaloids, flavonoides, saponines, cardiac glycosides
9. Identification of sugar from plant extracts
10. ndustry visits

Suggested Readings

1. Varsha Tiwari, (2020) Herbal drug Technology, Nirali Prakashan
2. Thomas Easley and Steven Horne, (2016) The Modern Herbal Dispensatory, North Atlantic Books
3. Christine Buckley, (2020) Plant Magic, Herbalism in real life, Roost Books
4. Ram Rastogi & B.N. Mehrotra, (2004) Indian Medicinal Plants Vol. 1 to IV & VI, Delhi
5. Min. of H & F.W., (2015) The Ayurvedic Pharmacopoeia of India 3 Books, Createspace Independent Pub
6. Dr. M.P. Shiva, Dr. Alok Lehri, Ms. Alka, (2021) Aromatic & Medicinal Plants
7. Purshottam Kaushik, A.K. Dhiman, (2000) Medicinal Plants & Raw drugs of India, Bishen Singh Mahendra Pal Singh
8. ISM&H, (2015) The Ayurvedic Formulary of India Part II, Pharmacopoeia Commission For Indian Medicine & Homoeopathy Ghaziabad
9. P. C. Sharma, M.B. Yelne, (2013) T.J. Dennis, Database on Medicinal Plants used in Ayurveda Vol. I to III, Central Council for Research in Ayurveda & Siddha, Deptt. of ISM & H, Min. of Health & Family Welfare, Govt. of India
10. C.P. Khare, (2013) Indian Medicinal Plants, Springer
11. Prajapati, Purohit Sharma,(2006) Medicinal Plants Handbook



Question Paper Nature
Certificate course in Textile chemistry

Time: 2 hr

Total Marks: 40

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08

- 1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)

Q. 2. Answer **any four** of the followings. 08

- i)
ii)
iii)
iv)
v)

Q. 3. Answer **any two** of the followings. 08

- i)
ii)
iii)

Q. 4. Write note on **any two** of the following. 08

- i)
ii)
iii)

Q. 5. Answer **any one** of the followings. 08

- i)
ii)



D.B.F.Dayanand College of Arts and Science,Solapur

Mahatma Anand Swami Skill Development Centre

Department of Sanskrit

Certificate Course in Ayurved Paricharak

2023- 2024 अभ्यासक्रम

आयुर्वेद

Unit 1 - आयुर्वेद - परिचयः

Unit 2 - दिनचर्या, ऋतुचर्या

Unit 3 - आहार

Unit 4 - पूर्वकर्माणि

Unit 5 - पंचकर्म

Unit 6 - अन्य सहाय्य

Unit 7 - उपकर्म

Unit 8 - पूरक कर्म

संस्कृत

Unit 1 - संवाद कौशल्य

Unit 2 - वैद्यालय व्यवस्थापन

Unit 3 - वैद्य सहाय्य

Unit 4 - ग्रंथ अभ्यास

Unit 5 - साहित्यम्



D.B.F. Dayanand College of Arts and Science, Solapur

Department of Economics

SYLLABUS

Title of Course: Internet BANKING

1. Unit I: Basic of Banking:

Definition of Bank, Types of Banks, Banking Structure in India.

2. Unit II: Fund Transfer :

From cash to electronic modes of payment, Digital Payment System, Real Time Gross Settlement (RTGS), National Electronic Fund Transfer (NEFT), Unified Payment Interface (UPI), Immediate Payment Service (IMPS), BHIM App.

3. Unit III: Accounts of Customer:

Procedure of Opening and Transfer of Account, Savings Account, Current Account, KYC Norms, Nomination, Tax Deduction at Source (TDS), Term Deposit Receipt (TDR), Zero Balance Accounts.

4. Unit IV: New Concepts in Banking:

Core Banking, A.T.M. Card, RuPay Card, Internet Banking, Mobile Banking, E-Banking, Green Banking, Sustainable Banking.

5. Unit III: Monetary Policy:

Monetary Policy of RBI, Repo rate and Reverse Repo rate, Banking Sector Reforms.

References:

1. Gupta, Suraj (2010), Monetary Economics, S. Chand Publications, New Delhi.
 2. Gordon & Natrajan (2012), Financial Markets and Services, Himalaya Publishing House, Mumbai.
 3. Gordon & Natrajan (2014), Banking: Theory, Law and Practice, Himalaya Publishing House, Mumbai.
 4. Datt-Sundharam (2017), Indian Economy, S.Chand Publications Ltd, New Delhi.
 5. Misra-Puri (2016), Indian Economy, Himalaya Publishing House, Mumbai.
 6. Damji B.H.(2016), Adhunik Banking (Marathi), Vidya Books Publishers, Aurangabad.
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D.B.F. Dayanand College of Arts and Science, Solapur.

Mahatma Anand Swami Skill Development Centre

Department of Electronics

Name of Course: Certificate Course in “Printed Circuit Board (PCB) Designing”

Duration of the Course: 6 Months

Total Credits: 2

**SYLLABUS FOR
Certificate Course in “Printed Circuit Board (PCB) Designing”**

Structure of the Course:

- Skill Development Course in PCB Designing will be implemented for **B.Sc.-II Electronics**.
- There will be one theory paper of **30 marks** and Practical of **20 marks**.

Class	Paper	Total Lectures	Examination Marks	Total Credits
B.Sc.-II	Theory	15	30	1
	Practical	10	10	0.5
	Project & Oral	05	10	0.5
Total		30	50	2

- Practical examination is 10 marks and Duration of exam is **1.00 hr**.
- Theory paper has **30 marks** for examination.
- The Project may be on laboratory works/Field work/Industrial visit for 10 marks.
- The course is College Affiliated; the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.



Objective of Course:

This is a basic course for designing of PCB using software. PCB (Printed Circuit Board) designing is an integral part of each electronics products and this program is designed to make students capable to design their own projects PCB up to industrial grade.

Objectives:

- Identifying Electronic Components Symbols & Footprints
- Constructing your Component libraries & use them effectively
- Schematic creation & interpretation
- Effective use of design rules & interfacing between schematic & PCB
- Component placement & routing techniques for various technologies

Scope of Course:

- Students are able to design a schematic of their circuit
- Students are able to design PCB layout of their design
- Students are capable to produce PCB of their own circuit
- The course is intended to give the students the necessary knowledge and of PCB design steps, starting from a simple schematic, through creating new components, and all the way to down a final PCB layout
- Recognize the technologies used in electronic industry through the practical experience gained in the course.



Syllabus for Theory Paper

(Total Credits: 01 and Contact Hrs. 15)

1. Introduction to PCB Designing Concepts: 4

Introduction & Brief History

- What is PCB
- Difference between PWB and PCB
- Types of PCBs: Single Sided (Single Layer), Multi-Layer (Double Layer)
- PCB Materials

Introduction to Electronic Design Automation (EDA)

- Brief History of EDA
- Latest Trends in Market
- How it helps and Why it requires
- Different EDA tools

2. Component Package Types: 4

Through Hole Packages o Axial lead

- Radial Lead
- Single Inline Package(SIP)
- Dual Inline Package(DIP)
- Transistor Outline(TO)
- Pin Grid Array(PGA)
- Metal Electrode Face(MELF)
- Small Outline Integrated Circuit(SOIC)
- Quad Flat Pack(QFP) and Thin QFP (TQFP)
- Plastic Leaded Chip Carrier(PLCC)

3. Introduction to Development Tools and PCS Designing: 4

- Introduction to PCB Design using Distress tool
- Introduction to PCB Design using Eagle tool

4. PCB Designing Flow Chart 3

- Schematic Entry
- Net listing
- PCB Layout Designing
- Prototype Designing o Design Rule Check (DRC)
- o Design for Manufacturing (DFM)



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

- **Minimum 05 practicals of 3 hrs duration should be conducted.**

- 1 Regulated Power supply using IC 7805
2. Transistor CE amplifier
3. Astable multivibrator using IC555
4. Monostable multivibrator using IC555
5. Op amp inverting amplifier
6. Op amp non inverting amplifier
7. Decade counter with seven segment display
8. 16:1 Multiplexer
9. 1:16 Demultiplexer
10. IC 8051 development board



Reference Books:

- 1 Electronic Devices And Circuits Theory - Robert L. Boylestad, Louis Nashelsky, Pearson
- 2 Op-amp and linear integrated circuits concepts and applications - James M. Fiore, Cengage Learning.
- 3 Digital Fundamentals - Floyd, Pearson
- 4 Manual of Multisim
- 5 Manual of Proteus



Question Paper Nature

Certificate course in “Printed Circuit Board (PCB) Designing”

Time: 1 hr

Total Marks: 30

-
- Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 06
- 1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
- Q. 2. Answer **any three** of the followings. 06
- i)
ii)
iii)
iv)
- Q. 3. Answer **any two** of the followings. 06
- i)
ii)
iii)
- Q. 4. Write note on **any two** of the following. 06
- i)
ii)
iii)
- Q. 5. Answer **any one** of the followings. 06
- i)
ii)





D.B.F. Dayanand College of Arts and Science, Solapur.

Affiliated to



**Punyashlok Ahilyadevi Holkar
Solapur University, Solapur.**

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in Circuit Simulation and PCB
Designing

Name of Course: B.Sc.-III (Sem.-V) Electronics

(Syllabus to be implemented from w.e.f. June 2021)





SYLLABUS FOR B.Sc.-III (Sem.-V) Electronics Certificate Course in Circuit Simulation and PCB Designing

Structure of the Course:

- Certificate Course in Circuit Simulation and PCB Designing will be implemented for **B.Sc.-III (Sem.-V) Electronics**.
- There will be one theory paper of **50 marks** and Practical of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination and **20 marks** for project and oral internal examination.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.Sc.-III (Sem.-V) /	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
M.Sc.-II (Sem.-III)	Project & Oral	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**. There will be two practical's each of **3.00 hr** duration.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- **The Project may be on laboratory works/Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- If the course is University Affiliated, then the certificate of completion of course will be issued by University.
- If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.

Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 30)

- 1. Introduction to Simulation Software** (Contact hrs:07)
 - 1.1 Need for simulation software.
 - 1.2 Vendor-specific tools p-spice, Multisim, Proteus, LT-spice.
 - 1.3 Specification, advantages of each software.
 - 1.4 Multisim computer simulation environment for analogue circuit simulation, proteus environment for digital circuit simulation.

- 2. Hands-on / Practical examples on Circuit Simulation** (Contact hrs:08)
 - 2.1 Analog Simulation.
 - 2.2 Transistor amplifiers, FET amplifier, IC555 (Monostable, Astable), op-amps circuits, filter circuits, power supply circuits.
 - 2.3 Digital Simulation:
 - 2.4 Gates, flip-flop's, counters, mux, de-mux circuits.
Microcontroller Simulation: 8051 based interfacing and their simulations.

- 3. Introduction to CAD tools for PCB design** (Contact hrs:07)
 - 3.1 Need for PCB design CAD tool,
 - 3.2 PCB fundamentals.
 - 3.3 Various layers in PCB.
 - 3.4 Vendor-specific tools ultiboard, eagle, Proteus, express PCB, Altium, specifications
 - 3.5 Proteus environment for single and double layer PCB

- 4. Hands-on / Practical example on PCB design** (Contact hrs:08)
 - 4.1 Power supply.
 - 4.2 IC555 circuits.
 - 4.3 Amplifier.
 - 4.4 op-amp circuits
 - 4.5 digital circuits
 - 4.6 8051 development board PCB development



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

- **Minimum 05 practicals of 3 hrs duration should be conducted.**

A. Simulations of Circuits

1. Full wave Rectifier
2. Capacitance Filter
3. Regulated Power supply using IC 7805
4. Transistor CE amplifier
5. Op amp inverting / non inverting
6. Astable multivibrator using IC555
7. Basic gates
8. Flip flops
9. Counters
10. Multiplexer / Demultiplexer

B. PCB Development

- 1 Regulated Power supply using IC 7805
2. Transistor CE amplifier
3. Astable multivibrator using IC555
4. Monostable multivibrator using IC555
5. Op amp inverting amplifier
6. Op amp non inverting amplifier
7. Decade counter with seven segment display
8. 16:1 Multiplexer
9. 1:16 Demultiplexer
10. IC 8051 development board



Reference Books:

- 1 Electronic Devices And Circuits Theory - Robert L. Boylestad, Louis Nashelsky, Pearson
- 2 Op-amp and linear integrated circuits concepts and applications - James M. Fiore, Cengage Learning.
- 3 Digital Fundamentals - Floyd, Pearson
- 4 Manual of Multisim
- 5 Manual of Proteus



Question Paper Nature

Certificate course in Certificate course in Circuit Simulation and PCB Designing

Time: 2 hr

Total Marks: 40

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08

- 1) -----
a) b) c) d)
2)
3)
4)
5)
6)
7)
8)

Q. 2. Answer **any four** of the followings. 08

- i)
ii)
iii)
iv)
v)

Q. 3. Answer **any two** of the followings. 08

- i)
ii)
iii)

Q. 4. Write note on **any two** of the following. 08

- i)
ii)
iii)

Q. 5. Answer **any one** of the followings. 08

- i)
ii)





D.B.F. Dayanand College of Arts and Science, Solapur.

Mahatma Anand Swami Skill Development Centre

Department of Computer Science

Name of Course: Certificate Course in “Web Design and Development”

Duration of the Course: 6 Months

Total Credits: 2

SYLLABUS FOR
Certificate Course in “Web Design and Development”

Structure of the Course:

- Skill Development Course in Web Design and Development will be implemented for **B.Sc. ECS-II.**
- There will be one theory paper of **30 marks** and Practical of **20 marks.**

Class	Paper	Total Lectures	Examination Marks	Total Credits
B.Sc.- ECS II	Theory	15	30	1
	Practical	10	10	0.5
	Project & Oral	05	10	0.5
Total		30	50	2

- Practical examination is 10 marks and Duration of exam is **1.00 hr.**
- Theory paper has **30 marks** for examination.
- The Project may be on laboratory works/Field work/Industrial visit for 10 marks.
- The course is College Affiliated; the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.



Objective of Course:

- Students will gain the skills and project-based experience needed for entry into web design and development careers.
- Students will be able to use a variety of strategies and tools to create websites.
- Understand the principles of creating an effective web page.
- Become familiar with graphic design principles that relate to web design and learn how to implement these theories into practice.
- Learn techniques of web design, Form Design, Table Design, Front page

Course outcome:

Upon the completion of this course

- At the end of the course the student will be able to: Prepare, Plan and Create a Web Site.
- Find FrontPage Help on the World Wide Web.
- Demonstrates knowledge on modifying and enhancing FrontPage Webs and Pages
- Students will be able to provide the technical support on-site
- Create and Customize Hyperlinks.

Syllabus for Theory Paper

(Total Credits: 01 and Contact Hrs. 15)

HTML: History, Vision & Future of HTML5, Getting Started With HTML5, Structure of a Web Page Forms, Audio and Video, HTML5 Canvas.

CSS: Introduction, The Power of CSS, Selectors and Pseudo Classes, Fonts and Text Effects Colours, Gradients, Background Images, and Masks, Transitions, Transforms, and Animations, Columns and Flexible Box, Media, Implementing CSS3 in the “Real World”.

Adobe Flash: Introduction to Animation, Introduction to Adobe Flash, Shape Tween and Motion Tween, Frame Animation, Various Flash Effects.

Google Forms and Tools: Creating Google Forms, Form filling, Reports, Charts, Google tools.



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

Minimum 05 practical's of 3 hrs duration should be conducted.

- 1) Design a website, Creating different themes for various layouts.
- 2) Create & design banners, advertisements, and much more, design the look and feel of a website
- 3) Website layout, fonts, colors, and themes
- 4) Animation forms using flash
- 5) Creating and updating Google forms and prepare reports
- 6) Practice and prepare template using Google tools
- 7) Changing contents in forms

Reference Books:

Jon Duckett's HTML and CSS

A beginner's guide to HTML, CSS, Javascript, and Web Graphics, by Jennifer Niederst Robbins

Web Designing and Development Training Guide

HTML: Beginners Guide to HTML to Master Your Web Designing Computer Networks-



Question Paper Nature
Certificate course in Web Design and Development

Time: 1 hr

Total Marks: 30

-
- Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 06
1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
- Q. 2. Answer **any three** of the followings. 06
i)
ii)
iii)
iv)
- Q. 3. Answer **any two** of the followings. 06
i)
ii)
iii)
- Q. 4. Write note on **any two** of the following. 06
i)
ii)
iii)
- Q. 5. Answer **any one** of the followings. 06
i)
ii)





D.B.F. Dayanand College of Arts and Science, Solapur.

Mahatma Anand Swami Skill Development Centre

Department of Statistics

Name of Course: Certificate course in “Statistical analysis using MS-Excel”

Duration of the Course: 6 Months

Total Credits: 2

Syllabus For

Certificate course in “Statistical analysis using MS-Excel”

Structure of the Course:

- Skill Development Course in **Statistical analysis using MS-Excel** will be implemented for **B.Sc. II**.
- There will be MCQ paper of 50 marks.

Class	Paper	Total Lectures	Examination Marks	Total Credits
B.Sc.- II	Practical	30	50	2
Total		30	50	2

- The course is College Affiliated; the certificate of completion of course will be issued by college.

Objective of the course-

1. To provide the knowledge of Excel, which help students to understand the importance of excel in day-to-day life.
2. To develop skills of the students in MS-Excel.
3. To get basic knowledge of creating tables and pivot tables.
4. To prepare the student for their own development.
6. To prepare the student for responsible citizen of modern technology-based world.



Outcome of the course

Students are able to:

- create and format tables, to visually group and analyse data
- create formulas and use built-in functions to perform calculations and solve problems
- create PivotTables and to calculate, summarise, and analyse data for comparisons, patterns, and trends

Syllabus for Paper

Introduction to Excel: About Excel & Microsoft, Uses of Excel, Title Bar, Menu Bar, Standard Toolbar, Formatting Toolbar, the Ribbon, Formula Bar, Status Bar, Workbook & sheets

Columns & Rows: Selecting Columns & Rows, Changing Column Width & Row Height, Auto fitting Columns & Rows, Hiding/Un-hiding Columns & Rows, Inserting & Deleting Columns & Rows, Cell, Address of a cell, Components of a cell – Format, value, formula, Use of paste and paste special

Functionality Using Ranges: Using Ranges, Selecting Ranges, Entering Information Into a Range, Using AutoFill

Creating Formulas: Using Formulas, Formula Functions – Sum, Average, if, Count, max, min, Proper, Upper, Lower, Using AutoSum

Spreadsheet Charts: Creating Charts, Different types of chart, Formatting Chart Objects, Changing the Chart Type, Showing and Hiding the Legend, Showing and Hiding the Data Table

Data Analysis: Sorting, Filter, Text to Column, Data Validation

PivotTables: Creating PivotTables, Manipulating a PivotTable, Using the PivotTable Toolbar, Changing Data Field, Properties, Displaying a PivotChart, Setting PivotTable Options, . Adding Subtotals to PivotTables

Printing Workbook Contents: Print workbook contents, Setting print options and page breaks

Reference Books-

1. Excel: Quickstart Guide from Beginner to Expert - William Fischer
2. Excel for Beginners - M.L. Humphrey
3. Excel Formulas and Functions 2020: The Step by Step Excel Guide with Examples on How to Create Powerful Formulas: 1 - Adam Ramirez
4. Data Analysis with Excel - Manisha Nigam



Question Paper Nature
Certificate course in Statistical analysis using MS-Excel

Time: 1hr

Total Marks: 50

Q. Choose the **most correct** alternative for the following.

- 1) -----
a) b) c) d)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)
- 10)
-
- 49)
- 50)





D.B.F. Dayanand College of Arts and Science, Solapur.

Mahatma Anand Swami Skill Development Centre

Department of Statistics

Name of Course: Certificate course in “MS-Excel”

Duration of the Course: 6 Months

Total Credits: 2

**Syllabus For
Certificate course in “MS-Excel”**

Structure of the Course:

- Skill Development Course in **MS-Excel** will be implemented for **M.Sc. I**.
- There will be MCQ paper of 50 marks.

Class	Paper	Total Lectures	Examination Marks	Total Credits
M.Sc. - I	Practical	30	50	2
Total		30	50	2

- The course is College Affiliated; the certificate of completion of course will be issued by college.

Objective of the course-

1. To provide the knowledge of Excel, which help students to understand the importance of excel in day-to-day life.
2. To develop skills of the students in MS-Excel.
3. To get basic knowledge of creating tables and pivot tables.
4. To prepare the student for their own development.
6. To prepare the student for responsible citizen of modern technology-based world.

Outcome of the course

Students are able to:

- create and format tables, to visually group and analyse data
- create formulas and use built-in functions to perform calculations and solve problems
- create PivotTables and to calculate, summarise, and analyse data for comparisons, patterns, and trends



Syllabus for Paper

Introduction to Excel: About Excel & Microsoft, Uses of Excel, Title Bar, Menu Bar, Standard Toolbar, Formatting Toolbar, the Ribbon, Formula Bar, Status Bar, Workbook & sheets

Columns & Rows: Selecting Columns & Rows, Changing Column Width & Row Height, Auto fitting Columns & Rows, Hiding/Un-hiding Columns & Rows, Inserting & Deleting Columns & Rows, Cell, Address of a cell, Components of a cell – Format, value, formula, Use of paste and paste special

Functionality Using Ranges: Using Ranges, Selecting Ranges, Entering Information Into a Range, Using AutoFill

Creating Formulas: Using Formulas, Formula Functions – Sum, Average, if, Count, max, min, Proper, Upper, Lower, Using AutoSum

Spreadsheet Charts: Creating Charts, Different types of chart, Formatting Chart Objects, Changing the Chart Type, Showing and Hiding the Legend, Showing and Hiding the Data Table

Data Analysis: Sorting, Filter, Text to Column, Data Validation

PivotTables: Creating PivotTables, Manipulating a PivotTable, Using the PivotTable Toolbar, Changing Data Field, Properties, Displaying a PivotChart, Setting PivotTable Options, . Adding Subtotals to PivotTables

Printing Workbook Contents: Print workbook contents, Setting print options and page breaks

Reference Books-

1. Excel: Quickstart Guide from Beginner to Expert - William Fischer
2. Excel for Beginners - M.L. Humphrey
3. Excel Formulas and Functions 2020: The Step by Step Excel Guide with Examples on How to Create Powerful Formulas: 1 - Adam Ramirez
4. Data Analysis with Excel - Manisha Nigam



Question Paper Nature
Certificate course in MS-Excel

Time: 1 hr

Total Marks: 50

Q. Choose the **most correct** alternative for the following.

- 1) -----
a) b) c) d)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)
- 10)
-
- 49)
- 50)





D.B.F. Dayanand College of Arts and Science, Solapur.

Affiliated to



**Punyashlok Ahilyadevi Holkar
Solapur University, Solapur.**

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in Geoinformatics

Name of Course: B.Sc.-III (Sem.-V) Geology

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR B.Sc.-III (Sem.-V) Geology Certificate Course in Geoinformatics

Structure of the Course:

- Certificate Course in Geoinformatics will be implemented for **B.Sc.-III (Sem.-V)** by Geology department
- There will be one theory paper of **50 marks** and Practical of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination and **20 marks** for project and oral internal examination.

Semester	Paper	Total contact Hrs.	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.Sc.-III (Sem.-V)	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
	Project & Oral	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- Students should complete project (**20 marks**) based on analysis of satellite imageries, toposheet and GIS data in geoinformatics laboratory. Its report should be submitted at the time of university practical examination for 01 credit.
- It is University Affiliated course; hence the certificate of completion of course will be issued by University.



Syllabus for Theory Paper

(Total Credits:02 and Contact Hrs.30)

Unit	Content	Contact Hrs.
Unit – AERIAL PHOTOGRAPHY AND PHOTOGRAMMETRY		07
I	<ul style="list-style-type: none">• Introduction: Fundamentals of Aerial Photography: flight planning & execution Photogrammetry: Basic concepts of measurements of object height and length• Stereo Photogrammetry: Stereovision & Stereoscopes, Stereoscopic Parallax & Parallax Equations• Visual interpretation of aerial photographs, Elements of Image Interpretation	
Unit – FUNDAMENTALS OF REMOTE SENSING		08
II	<ul style="list-style-type: none">• Remote Sensing: History, Development, Definition, Concept & Principles• Electromagnetic Radiation (EMR): Spectrum and its properties, Atmospheric windows, Interaction of EMR with atmosphere & Earth's Surface• Spectral signatures & Resolutions: Spatial, Spectral, Radiometric and Temporal• Remote Sensing Systems: Platform, types of platforms & its characteristics• Sensor classification: Active and Passive, Optical-Mechanical Scanners & Push-broom scanners• Thermal Infrared: Introduction, Radiation Properties, Kinetic Heat, Temperature, Radiant Energy and Flux, methods of transferring heat• Thermal properties of terrain: Capacity, Conductivity, Inertia, Infrared• Microwave: Passive & Active Sensors, RADAR, Scatterometer	
Unit – INTRODUCTION TO GEOGRAPHICAL INFORMATION SYSTEM (GIS)		08
III	<ul style="list-style-type: none">• Basic concepts: Definition and history• Components of GIS• Data structure and formats• Spatial data models - Raster and Vector• Data base design - editing and topology creation in GIS, Linkage between spatial and non spatial data• Data inputting in GIS	



Unit – GLOBAL POSITIONING SYSTEM (GPS)

07

- IV**
- Fundamentals of GPS and its applications
 - Geodesy
 - Components of global positioning system
 - Factors affecting GPS accuracy
 - GPS surveying methods and accuracy
 - Reference station, reference equipment and radios

Total = 30

Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

PRACTICAL IN GEOINFORMATICS

1. AERIAL PHOTOGRAPHY AND PHOTOGRAMMETRY

- Reading peripheral information.
- Test of Stereo Vision, Orientation of Stereo pair
- Measurement of scale of aerial photograph
- Parallax bar handling and height measurements
- Interpretation of aerial photographs with stereo pair, visual interpretation of physical features (Settlement, waterbody, forest, agriculture, barren/open land, rocky outcrops and others if present.)

2. FUNDAMENTALS OF REMOTE SENSING

- Introduction to remote sensing data
- Data Downloading
- Introduction to Digital Software (ERDAS Imagine)
- Data import in ERDAS Imagine
- Generation of FCC
- Geometric correction of satellite data

3. INTRODUCTION TO GIS

- Introduction to GIS software (ArcGIS)
- Data models: Raster and Vector
- Introduction to SOI topographical Maps: Numbering, Scales, grid reference, signs and symbols and interpretation
- Registration of topographical maps in GIS software
- Onscreen digitization (Database generation)
- Topology creation (error estimations), Spatial and attribute data input, various measurements, attribute data linking to spatial features.
- Generation of GIS based Maps

4. GPS

- GPS data collection in field
- GPS survey
- Importing GPS data in to google

PROJECT

(Credit – 1 Contact Hrs. – 15)

The project will be based on theory and practical syllabus.



REFERENCE BOOKS

1. George Joseph, (2004) "Fundamentals of remote sensing", Universities press (India) Pte Ltd., Hyderabad.
2. Gupta, K. K. Tyagi, (1992): Working with maps, Survey of India Publication, DST, New Delhi
3. Jensen, J.R., (2006) "Remote Sensing of the Environment - An EarthResources Perspective", Pearson Education, Inc. (Singapore) Pte. Ltd., Indian edition, Delhi.
4. Leica. A., (2003), GPS Satellite Surveying, John Wiley & Sons, use. New York
5. Lillesand, Thomas M. and Kiefer, Ralph, W., (2007) "Remote Sensing and Image Interpretation", 4th Edition, John Wiley and Sons, New York
6. N.K.Agrawal , (2004) ,Essentials of GPS, Spatial Network Pvt. Ltd
7. Ramamurthy, K. (1982): Map Interpretation, Rex Printers, Madras
8. Rampal, K.K., (1999) Handbook of Aerial Photography and Interpretation, Concept Publishing Company, New Delhi
9. Reeves, Robert G. (1991), "Manual of Remote Sensing, Vol. I, American Society of Photogrammetry and Remote Sensing, Falls Church, Virginia, USA
10. Sabins, F.F. Jr., (2007) Edition. „Remote Sensing - Principles and Interpretation”, W.H. Freeman & Co.
11. Sathish Gopi , (2000), GPS and Surveying using GPS
12. Singh, R. L. (1979): Elements of Practical Geography, Kalyani Publishers, New Delhi 2.
13. Tamaskar, B. G., Deshmukh, V. M. (1974): Geographical Interpretation of Indian Topographical Maps, Orient Longman Ltd., Bombay
14. Terry-Karen Steede, (2002), Integrating GIS and the Global Positioning System, ESRI Press
15. Understanding Map Projection (2003-2004): GIS by ESRI, Redlands
16. Vaidyanadhan, R. (1968): Index to a set of sixty Topographic Maps: Illustrating Specified Physiographic Features from India, Council of Scientific and Industrial Research, Ministry of Education, Government of India





D.B.F. Dayanand College of Arts and Science, Solapur.

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**Punyashlok Ahilyadevi Holkar
Solapur University, Solapur.**

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in R-Software

Name of Course: B.Sc.-III (Sem.-V) Statistics

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR

B.Sc.-III (Sem.-V) Statistics

Certificate Course in R-Software

Structure of the Course:

- Certificate Course in R Software will be implemented for **B.Sc.-III (Sem.-V) Statistics**.
- There will be one theory paper of **50 marks** and Practical of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination and **20 marks** for project and oral internal examination.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.Sc.-III (Sem.-V) Statistics	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
	Project & Oral	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**. There will be two practical's each of **3.00 hr** duration.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- **The Project may be on laboratory works/Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**



Syllabus for Theory Paper

(Total Credits:02 and Contact Hrs.30)

1. **Getting started with R (Contact hrs:05)**
 - 1.1 Download and Installation
 - 1.2 Introduction to components of R
 - 1.3 R's command line: Variables & functions

2. **Introduction to R language (Contact hrs:05)**
 - 2.1 Basic features of R: calculating with R, named storage, data import and export
 - 2.2 Functions, vectors, extracting elements from vectors, vector arithmetic, simple patterned vectors, character vectors
 - 2.3 Matrix and arrays, matrix properties, matrix multiplication and inversion
 - 2.4 Data frames
 - 2.5 Dates and times

3. **Programming statistical graphics (Contact hrs:05)**
 - 3.1 Bar chart, pie chart, histogram, box plot, scatter plot, qq plot
 - 3.2 Adding components to the plots

4. **Statistical analysis in R (Contact hrs:05)**
 - 4.1 Descriptive statistics, pdf, cdf, quantiles
 - 4.2 Creating tables and graphs
 - 4.3 Correlation and regression
 - 4.4 ANOVA, Solving LPP in R
 - 4.5 t-test, F-test, proportion test, chi-square test

5. **Programming in R (Contact hrs:05)**
 - 5.1 Understanding the flow control: for loop, if loop, while loop, repeat loop, break

6. **Simulation (Contact hrs:05)**
 - 6.1 Monte Carlo simulation
 - 6.2 Generation of pseudo random numbers
 - 6.3 Simulation from other random variables: Bernoulli, Binomial, Poisson, Exponential, Normal



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

- **Minimum 05 practicals of 3 hrs duration should be conducted.**
1. Data input and output, data editing, data import and export using R
 2. Creating different types of vectors
 3. Matrix, operations on matrix and data frames
 4. Descriptive statistics
 5. Random sampling, pdf, cdf, quantiles
 6. Graphical representation
 7. Correlation and regression
 8. Testing of hypothesis
 9. Analysis of Variance
 10. Solving linear programming problem
 11. Simulation



Reference Books:

- 1 A First Course in Statistical Programming with R -W. John Braun & Duncan J. Murdoch
- 2 Using R for Introductory Statistics - John Verzani
- 3 Statistical Analysis Using R Software - Dr.DhavalMaheta
- 4 Statistical Computing Using R Software - Vishwas R. Pawgi



Question Paper Nature
Certificate course in R Software

Time: 2 hr

Total Marks: 40

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08

- 1) -----
a) b) c) d)
2)
3)
4)
5)
6)
7)
8)

Q. 2. Answer **any four** of the followings. 08

- i)
ii)
iii)
iv)
v)

Q. 3. Answer **any two** of the followings. 08

- i)
ii)
iii)

Q. 4. Write note on **any two** of the following. 08

- i)
ii)
iii)

Q. 5. Answer **any one** of the followings. 08

- i)
ii)



Type: DSE2-A
Course Title: Advanced Python
Programming
(Paper Code: Paper XII)

Course Objectives:

1. To learn Multithreaded Programming.
2. To learn GUI programming using different types of python modules.
3. To study database programming using MySQL.
4. To study Web server programming using CGI and XML.
5. To learn socket programming concept using Networking.

Course Outcomes: Upon successful completion of this course, students will be able to-

1. Design, Create, Build, and Debug Python applications.
2. Explore Integrated Development Environment (IDE).

Unit 1: Threading and Networking [20]

Understanding threads, Class and threads, Difference between Process and a Thread, Creating Threads, Thread Synchronization, Treads Life cycle, Multi-threading, Deadlock of Threads, Avoiding Deadlock in a Program, use cases.

Networking in Python: Introduction to Sockets Programming, Server Socket Methods, Client Socket Methods, IP Address, URL, TCP/IP Server, TCP/IP Client, Sending E-mail Application.

Unit 2: GUI Programming and [20]

GUI in Python, Advantages of GUI, Introduction to GUI library, Basic Operations using Tkinter, Root Window, Working with Containers: Frame, Canvas, Layout Management, Events and Bindings, Font, Colors, drawing on Canvas (line, oval, rectangle, etc.), Widgets: Label, Button, Checkbutton, Entry, Listbox, Message, Radiobutton, Text, Spinbox, Scrollbar, Menu etc., different dialog boxes and message boxes, Writing Python Programs for GUI applications

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Unit 3: Database Connectivity [5]

Database Connectivity using MySQL: Installation of MySQL, Installing MySQL connector, Steps for Database Connectivity, Inserting, Retrieving, Deleting and updating the data working with Stored Procedure.

Unit 4: Introduction to Django [15]

Django Project and App life cycle, Creating Project and App, Difference between app and project, The Project Structure, Setting Up Your Project,

Django Templates and Static, Django Models, Django Forms, Django Views, Django Sessions and Cookies, Django Serialization, Deserialization and Mixins, Django Authentication and Authorization, Django Middleware, Send Email in Django and CSV, PDF files and GIT and Github, Django Rest Framework Introduction, Django Rest Framework Serializer and Deserializer, Django Rest Framework Views, Django Rest Framework Authentication And Authorization, Django Rest Framework Pagination and Routing

Reference Books:

- Advanced Python Programming-By Richard Ozer, 2017
- Core python Programming- Dr. R NageswaraRao
- Expert Python Programming.: Become a master in Python-By Michał Jaworski, TarekZiade
- MySQL for Python: Database Access MadeEasy- A.Lukaszewski



Course Objectives:

1. To understand Android platform and its architecture.
2. To learn about mobile devices types and different modern mobile operating systems.
3. To learn activity creation and Android User Interface designing.
4. To learn basics of Intent, Broadcast and Internet services.
5. To learn about different wireless mobile data transmission standards.
6. To understand and learn how to integrate basic phone features, multimedia, camera and Location based services in Android Application.
7. To learn about different systems for mobile application development, deployment and distribution in Mobile market place (Android, IOS).
8. To understand and carry out functional test strategies for mobile applications.

Course Outcomes: Upon successful completion of this course, students will be able to-

1. Create, Design, Debug and Deploy Android applications.
2. Explore Integrated Development Environment (IDE).

Unit 1: Introduction

[15]

What is Android, Android Versions and its Feature Set, Various Android Devices on the Market, Android Market Application Store, Android Development Environment, System Requirements, Android SDK, Installing Java, and ADT bundle - Eclipse Integrated Development Environment (IDE), Creating Android Virtual Devices (AVDs).

Android Architecture Overview and Application:

Android Software Stack, The Linux Kernel, Android Runtime - Dalvik Virtual Machine, Android Runtime – Core Libraries, Dalvik VM Specific Libraries, Java Interoperability Libraries, Android Libraries, Application Framework, Creating a New Android Project, Defining the Project Name and SDK Settings, Project Configuration Settings, Configuring the Launcher Icon, Creating an Activity, Running the Application in the AVD, Stopping a Running Application, Modifying the Example Application, Reviewing the Layout and Resource Files.

15 / 45



Unit 2: Android Software Development Platform and Framework

[15]

Understanding Java SE and the Dalvik Virtual Machine, The Directory Structure of an Android Project, Common Default Resources Folders, The Values Folder, Leveraging Android XML, Screen Sizes, Launching Mobile Application: The AndroidManifest.xml File, Android Application Components, Android Activities: Defining the UI, Android Service: Processing in the Background, Broadcast Receivers: Announcements and Notifications Content Providers: Data Management, Android Intent Objects: Messaging for Components, Android Manifest XML: Declaring Your Components.

Unit 3: Understanding Android User Interfaces, Views and Layouts

[15]

Designing for Different Android Devices, Views and View Groups, Android Layout Managers, The View Hierarchy, Designing an Android User Interface using the Graphical Layout Tool, Displaying Text with Text View, Retrieving Data from Users, Using Buttons, Check Boxes and Radio Groups, Getting Dates and Times from Users, Using Indicators to Display Data to Users, Adjusting Progress with Seek Bar, Working with Menus using views, Gallery, Image Switcher, Grid View, and Image View views to display images, Creating Animation.

Unit 4: Databases, Intents, Location-based Services and Development

[15]

Saving and Loading Files, SQLite Databases, Android Database Design, Exposing Access to a Data Source through a Content Provider, Content Provider Registration, Native Content Providers Intents and Intent Filters: Intent Overview, Implicit Intents, Creating the Implicit Intent Example Project, Explicit Intents, Creating the Explicit Intent Example Application, Intents with Activities, Intents with Broadcast Receivers.

Application Development:

Sending SMS Messages Programmatically, Getting Feedback after Sending the Message, Sending SMS Messages Using Intent Receiving, Sending email, Introduction to location-based service, Configuring the Android Emulator for Location -Based Services, Geocoding



D.B.F. Dayanand College of Arts and Science, Solapur.

Mahatma Anand Swami Skill Development Centre

Department of Computer Science

Name of Course: Certificate course in “Hardware and Networking”

Duration of the Course: 6 Months

Total Credits: 2

SYLLABUS FOR
Certificate course in “Hardware and Networking”

Structure of the Course:

- Skill Development Course in Hardware and Networking will be implemented for **B.Sc. ECS-I**.
- There will be one theory paper of **30 marks** and Practical of **20 marks**.

Class	Paper	Total Lectures	Examination Marks	Total Credits
B.Sc.(ECS) -I	Theory	15	30	1
	Practical	10	10	0.5
	Project & Oral	05	10	0.5
Total		30	50	2

- Practical examination is 10 marks and Duration of exam is **1.00 hr**.
- Theory paper has **30 marks** for examination.
- The Project may be on laboratory works/Field work/Industrial visit for 10 marks.
- The course is College Affiliated; the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.



Objective of Course:

- To impart fundamental awareness on Computer Hardware and Networking.
- To enable students to start self run units for computer hardware sales and servicing.
- To provide students with the knowledge of computer systems, desktops and peripherals
- To impart knowledge of installing, diagnosing, repairing and upgrading all hardware equipments.
- To introduce students with the setup and maintain of LAN with internet connection.

Course outcome:

Upon the completion of this course

- Students will be able to do troubleshooting of different computer related issues
 - Students will understand the basics of computer systems along with peripherals
 - Students will learn to determine and installing appropriate security measures
 - Students will be able to provide the technical support on-site •
- Students will troubleshoot software and hardware problems related to internet applications.

Syllabus for Theory Paper

(Total Credits: 01 and Contact Hrs. 15)

Fundamental of information Technology: Basic of IT, Introduction to DBMS, impressive web designing, cyber law, daily computing, web designing, Client side scripting, accounting package, digital content creation, Linux OS.

Computer Hardware and Maintenance: Study of maintenance kit, computer peripheral, reassembling computer system, Disk drive performance, File system, unlock USB port, speaker, web camera.

PC Assembling and Troubleshooting: Troubleshooting & repairing of motherboard & components on motherboard, Software & Hardware troubleshooting, use basic hand tools effectively, able to perform basic troubleshoots of PC, able to install & maintain software for PC.

Windows 2007 Server Administration: Server overview, Managing Windows server 2008, managing Storage, Monitoring & Troubleshooting Server, Essential services, File & Print Services, Popular window network service & Application.

Network Administration: Overview of TCP/IP, Delivering the data, network services, Basic Configuration, Configuring interface, Configuring DNS, Local network services, Send mail, Network security, Troubleshooting TCP/IP.



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

Minimum 05 practical's of 3 hrs duration should be conducted.

- 1) Identification of different Components of a computer and demonstration and uses of them.
- 2) Different Tools / equipment used for assembling/ disassembling a PC.
- 3) Demonstrations of the power flow inside a computer through slides/ PPT.
- 4) Identification of the power source, coloured wires of interest etc.
- 5) A running SMPS demonstration
- 6) Installation of a SMPS on a cabinet
- 7) Changing dead battery from an UPS.
- 8) Demonstration of BIOS / CMOS setup, POST in a Computer step by step.
- 9) Demonstration of different types of configurations and effect of changes in an existing BIOS feature for a system.
- 10) Demonstration of different generation's RAM compatible with the system, showing speed, & other features.
- 11) Hand on practice on Burning CD and DVD to create ISO image of software.

Reference Books:

Computer Applications In Management- Dahiya, U/ Nagpal, S. Taxman Allied Service

Computer Architecture & Organization- Hayes, J. P. 3rd ed MGH

Computer Fundamentals- Goel, Anita Pearson

Computer Fundamentals: Concepts, Systems & Applications- Sinha, P. K. BPB

Computer Networks- Tanenbaum, Andrew. S. 4th ed Pearson

Computer Networks & Internets- Comer, Douglas 2nd ed Pearson



Question Paper Nature
Certificate course in Hardware and Networking

Time: 1 hr

Total Marks: 30

-
- Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 06
1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
- Q. 2. Answer **any three** of the followings. 06
i)
ii)
iii)
iv)
- Q. 3. Answer **any two** of the followings. 06
i)
ii)
iii)
- Q. 4. Write note on **any two** of the following. 06
i)
ii)
iii)
- Q. 5. Answer **any one** of the followings. 06
i)
ii)



Syllabus

1. Symbolic maths
2. Differentiation : first and second order
3. Integration
4. Limits
5. Simplification and substitutions-collection and expansion of factors
6. Basic algebraic operations
7. Integral transforms : Laplace,Fourier,Z-transforms
8. Plotting of graphs : 2D and 3D
9. Solving algebraic operations : Quadratic and cubic
- 10.Determinants
- 11.Graphical representation of solutions of ordinary and partial differential equations. Numerical solutions to the system of linear equations,solution of algebraic and transcendental equations, ordinary and partial differential equations.

Reference books :

- a) Advanced Engineering Mathematics with MATLAB by Thomas L.Harman,James Daboney,Norman Richert
- b) Advanced Engineering Mathematics with MATLAB by Dean G.Duffy,CRC Press
- c) Exercise in Computational Mathematics with MATLAB by Tom Lyche,Jean-Louis Merrien, Springer Publications



D.B.F.Dayanand College of Arts and Science, Solapur

Department of Mathematics

Date : 21/07/2016

following committee is formed for drafting a syllabus for the course ' Certificate Course in MATLAB Software'.

1. Shri.B.S.Shivsharan ,
Head,
Department of Mathematics,
D.B.F.Dayanand College of Arts and Science,Solapur
2. Shri.A.R.Reshimkar
Lecturer,
Department of Mathematics,
D.B.F.Dayanand College of Arts and Science, Solapur

The above committee members are present for the meeting and drafted the syllabus for the above said course.

Head,
Department of Mathematics





D.B.F. Dayanand College of Arts & Science, Solapur

Affiliated to



Punyashlok Ahilyadevi Holkar
Solapur University

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in Machine Learning
Python

Name of Course: B.Sc (E)S- (Sem V)

(Syllabus to be implemented from 2021 onwards)



SYLLABUS FOR B.Sc E(CS) I (Sem V) Certificate Course in Machine Learning Structure of the Course

- Certificate Course in Machine Learning will be implemented in B.Sc E(CS) I (Sem V).
- There will be one 50 marks paper of 50 marks.
- The theory 40 marks university external examination marks for internal examination.
- At the end of the semester practical examination will have a weightage of 30 marks for university external examination 20 marks project and oral internal examination.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ Exam	Internal Exam	Total Marks	
B.Sc E(CS) I (Sem V)	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
	Project	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical one day in a week for two practicals each 300 duration.
- Theory paper 10 marks internal. Examination 40 marks for unit 05 marks home assignment.
- The Project may be on laboratory works / Field work. The report should be submitted at the time of the examination.



examination for 01 credit

- If the course is Un, it vheer nst h y A é f t l f a t e d e o f c o u r s e w i l l b e i s s u e d b y U n i v e r s i t y
- If the course is C b h e a g d h A f c f e i r l i i a t i e d a t e o f c o m p l w i l l b e i s s u e d b y c o l l e g e a n d s u b m i t t e d t o u c u r r i c u l u m

Syllabus for Theory Paper

(Total C02 d a n d C o n t a c t H r s

1. Introduction to Python (Cont a 0 t 0 h r s)
 - 1.1 Machine Setup
 - 1.2 Learning R y a b o n d a
 - Spyder IDE and Environment
 - Jupyter Notebook
 - Programming in Python
 - Programming best practices
 - Python Data Types
 - Python Data Structures
 - Arithmetic Operations
 - Conditional Statements and For loops
 - User defined Functions
2. Python Packages and Object Oriented (C P r o t g a r a t h m i n g)
 - 2.1 Overview of Object Oriented Programming
 - 2.2 Defining C h j a e s t e s s a n d I n i t i a l i z e r s
 - 2.3 Python for Data Nu A m p a l a y n s d i B a n d a s
 - 2.4 Python for Data - W a s t u p d l o i t z a t b i a o n n d S e a b o r n
3. Machine Learning Models (Cont a 0 t 0 h r s)
 - 3.1 Linear Re, g r e s s i t i o n R (S y) M e s s i o n
 - 3.2 Clust, D e c h n g i o, N e u r a l s N e t w o r k s
4. Machine Learning Techniques (Cont a 0 t 0 h r s)



4.1 Regularization

4.2 Cross Validation

4.3 Hyperparameter Tuning

4.4 Handling Imbalanced Classes

5. Natural Languages Processing

(Contact hrs

5.1 What is NLP

5.2 Text Data Processing

5.3 TF DF

5.4 Text Vectorization



- Class variables and instance variable and ill
Robo)ATM Machine

Reference Books

1. Introduction to Computer P, Jodhima Vm Onitgaugsi ng Py
2. Core Python Pr, R. Nagaswara Rao
3. Data Structures and Algori tNkrai rhuTtrhainrckhiing wi t h
4. Python Machi nSee lb a s r n i a m g R a s c h k a
5. Getting Started , W i t a m T e n s o r Z f a l c o w n e
6. Machine L, T a m n M i n t g c h e l l
7. Building Machine Learn i , R g S y e t e r s C w i e t l h B y t h o n



Question Paper Nature
Certificate course in Machine Learning
Total: 4 Marks

Time: 2 hr

Q.1. Choose the correct alternative for the following and write

08

- 1) -----
a) b) c) d)
2)
3)
4)
5)
6)
7)
8)

Q.2. Answer any four of the following

08

- i)
ii)
iii)
iv)
v)

Q.3. Answer any two of the following

08

- i)
ii)
iii)

Q.4. Write any two of the following

08

- i)
ii)
iii)

Q.5. Answer any one of the following

08

- i)
ii)





D.B.F. Dayanand College of Arts and Science, Solapur.

Affiliated to



**Punyashlok Ahilyadevi Holkar
Solapur University, Solapur.**

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in Bioinformatics

Name of Course: B.Sc.-III (Sem.-V) / M.Sc.-II (Sem.-III)

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR

B.Sc.-III (Sem.-V) / M.Sc.-II (Sem.-III) Zoology

Certificate Course in Bioinformatics

Structure of the Course:

- Certificate Course in Bioinformatics will be implemented for **B.Sc.-III (Sem.-V) / M.Sc.-II (Sem.-III) Zoology**.
- There will be one theory paper of **50 marks** and Practical of **50 marks**.
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester V, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination and **20 marks** for project and oral internal examination.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
B.Sc.-III (Sem.-V) /	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
M.Sc.-II (Sem.-III)	Project & Oral	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**. There will be two practical's each of **3.00 hr** duration.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- **The Project may be on laboratory works/Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**



Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 30)

1. Fundamentals of Bioinformatics (Contact hrs: 05)

- 1.1. Introduction to Bioinformatics
- 1.2. Introduction to NCBI, DDBJ, EMBL
- 1.3. Introduction to biological databases
 - a) Nucleic Acid,
 - b) Proteins (Sequence and Structure Databases)
 - c) genome -structure databases.

2. Search engines and tools (Contact hrs: 05)

- 2.1 ENTREZ
- 2.2. Sequence data forms and submission tools,
- 2.3. Scoring matrices for sequence alignments, algorithms— pair wise sequence alignments.

3. Databases for similarity search sequence (Contact hrs: 05)

- 3.1 BLAST
- 3.2. FASTA.

4. Methods for sequence analysis (Contact hrs: 05)

- 4.1 Multiple sequence alignment,
- 4.2 Phylogenetic analysis and tree building methods,
- 4.3 Motif searches, epitope prediction,
- 4.4. Data mining tools and applications,
- 4.5 Promoter and gene prediction, comparative analysis.

5. Structure based approaches (Contact hrs: 05)

- 5.1 Protein secondary structure prediction,
- 5.2. Threading approaches,
- 5.3. Homology based methods for protein tertiary structure prediction,
- 5.4. Visualization tools, structure evaluation and validation, antigen-antibody interactions.

6. Applications (Contact hrs: 05)

- 6.1 Applications of bioinformatics in various research areas.



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

- **Minimum 05 practicals of 3 hrs duration should be conducted.**
1. Browsing of NCBI website for survey of literature using protein Databases
 2. Browsing of NCBI website for survey of literature using nucleotide databases
 3. Browsing of DDBJ website for survey of literature using protein and nucleotide databases.
 4. Browsing of EMBL website for survey of literature using protein and nucleotide databases.
 5. Databases for similarity search sequence: BLAST
 6. Databases for similarity search sequence: FASTA
 7. Browsing of Various bioinformatics resources available on Internet for Search of various databases a) Bibliographic databases
 8. Other related practical



Reference Books:

1. Vittal R. Srinivas, " BIOINFORMATICS : A MODERN APPROACH" , 2005, ISBN : 978-81-203-2858-7, published by PHI Learning Private Limited, New Delhi.
2. Andreas D.Baxevanis, B.F. Francis Ouellette, "Bioinformatics - A Practical Guide to the Analysis of Genes and Proteins", Third Edition, 2005-2006, ISBN: 978-81-265-2192-0, published by John Wiley & Sons INC. , U.K.
3. Jean-Michel Claverie, Cedric Notredame, "Bioinformatics For Dummies", 2nd Edition,2006, ISBN: 978-0-470-08985-9
4. Mount W. 2004. Bioinformatics and Sequence Genome Analysis 2nd Editon CBS Pub. New Delhi.
5. Bergman, N. H. Comparative Genomics. Humana Press Inc. Part of Springer Science+BusinessMedia, 2007.
6. Baxevanis, A. D. Ouellate, B. F. F. 2009. Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins.John-Wiley and Sons Publications, New York.
7. Campbell A. M. and Heyer, L. J. 2007. Discovering Genomics, Proteomics and Bioinformatics, 2nd Edition. Benjamin Cummings.
8. Des Higgins and Willie Taylor 2000. Bioinformatics: Sequence, Structure and Databanks.Oxford University Press.
9. Rashidi H. H. and Buehler 2002. Bioinformatics Basics: Applications in Biological Science and Medicine, CRC Press, London.
10. Gibas Cynthia and Jambeck P. 2001. Developing Bioinformatics Computer Skills: ShroffPublishersand Distributors Pvt. Ltd. (O'Reilly), Mumbai



Question Paper Nature
Certificate course in Bioinformatics

Time: 2 hr

Total Marks: 40

-
- Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08
1) -----
a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)
- Q. 2. Answer **any four** of the followings. 08
i)
ii)
iii)
iv)
v)
- Q. 3. Answer **any two** of the followings. 08
i)
ii)
iii)
- Q. 4. Write note on **any two** of the following. 08
i)
ii)
iii)
- Q. 5. Answer **any one** of the followings. 08
i)
ii)





D.B.F. Dayanand College of Arts and Science, Solapur.

Affiliated to



**Punyashlok Ahilyadevi Holkar
Solapur University, Solapur.**

Name of Faculty: Science & Technology

(Choice Based Credit System)

Syllabus: Certificate course in QGIS

Name of Course: M.A./M.Sc.-II (Sem.-III)

Geography

(Syllabus to be implemented from w.e.f. June 2021)



SYLLABUS FOR

M.A./M.Sc.-II (Sem.-III)

Certificate Course in QGIS

Structure of the Course:

- Certificate Course in QGIS will be implemented for **M.A./M.Sc.-II (Sem.-III) Geography.**
- There will be one theory paper of **50 marks** and Practical of **50 marks.**
- The theory paper has **40 marks** for university external examination and **10 marks** for internal examination.
- At the end of Semester III, the practical examination will be conducted. The weightage of practical is of **30 marks** for university external practical examination and **20 marks** for project and oral internal examination.

Semester	Paper	Total Lectures	Examination			Total Credits
			Univ. Exam.	Internal Exam.	Total Marks	
M.A./M.Sc. -II (Sem.- III)	Theory	30	40	10	50	2
	Practical	15	30	00	30	1
	Project & Oral	15	00	20	20	1
Total		60	70	30	100	4

- Duration of practical examination is of **one day**. There will be two practical's each of **3.00 hr** duration.
- Theory paper has **10 marks** for internal examination. There will be **05 marks** for unit test and **05 marks** for home assignment.
- **The Project may be on Field work/Industrial visit for 20 marks. Its report should be submitted at the time of university practical examination for 01 credit.**
- **If the course is University Affiliated, then the certificate of completion of course will be issued by University.**
- **If the course is College Affiliated, then the certificate of completion of course will be issued by college and submitted to university for fulfilment of curriculum.**



Syllabus for Theory Paper

(Total Credits: 02 and Contact Hrs. 30)

Unit I- Overview of QGIS

(Contact hrs:06)

Introduction to QGIS,
Objectives of QGIS,
Working with Projections using QGIS

Unit II- Georeferencing & Digitization

(Contact hrs:06)

Georeferencing of Toposheet /Map,
Vectorization or digitization of Toposheet /Map- point, Line and polygon

Unit III- Map Preparation and Composition using QGIS

(Contact hrs:06)

Data processing,
Map Preparation and composition,
Symbology in of QGIS,
Data Exploration and
Working with Tables (Join Tables)

Unit IV- Data Query

(Contact hrs:06)

Spatial Querying,
Data Query (Attribute Querying),

Unit V- Working with Google Earth Using QGIS

(Contact hrs:06)

To introduce the Google Earth, Bing, Yahoo and Open street maps using
Quantum GIS, Introduction of Bhuvan etc.



Syllabus for Practical Paper

(Total Credits: 01 and Contact Hrs. 15)

- **Minimum 05 practicals of 3 hrs duration should be conducted.**
 1. Projection
 2. Georeferencing
 3. Vectorization
 4. Data processing,
 5. Map Preparation and composition
 6. Symbology
 7. Spatial Querying,
 8. Data Query
 9. Download Google Earth Image



Reference Books:

1. Basudeb Bhatta, (2011), Remote Sensing and GIS (Second Edition), Oxford University Press.
2. S.M. Rashid, (1993): Remote Sensing in Geography, Manak Publication, Pvt. Ltd. Delhi.
3. Anita Graser, Gretchen N Peterson, Gary Sherman (Editor) (Nov. 2018), QGIS Map Design, Locate Press.
4. Anita Graser, (April 2019), Discover QGIS 3.x: A Workbook for Classroom or Independent Study.
5. Hans Van Der Kwast, Kurt Menke GISP, (2019), QGIS for Hydrological Applications: Recipes for Catchment Hydrology and Water Management, Locate Press.
6. Anita Graser (2019), Learn Qgis: Your step-by-step guide to the fundamental of QGIS 3.4, 4th Edition, Locate Press.
7. Online Resources.



Question Paper Nature
Certificate course in QGIS

Time: 2 hr

Total Marks: 40

Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 08

- 1) -----
a) b) c) d)
- 2)
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5)
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Q. 2. Answer **any four** of the followings. 08

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Q. 3. Answer **any two** of the followings. 08

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iii)

Q. 4. Write note on **any two** of the following. 08

- i)
ii)
iii)

Q. 5. Answer **any one** of the followings. 08

- i)
ii)



D. B. F. Dayanand College of Arts and Science, Solapur
Mahatma Anand Swami Skill Development Centre

Name of Department : Geography

- Name of the Course : Quantum GIS
- Type of course : Skill Oriented
- Duration of the Course : 6 Months
- Medium of the course :English
- Eligibility : 12th pass
- Intake Capacity : 50

- **Curriculum (Syllabus) :**

1) Objectives of the Course :

- I. The objective of this course is to provide participants with a basic understanding of the theory of databases, and geographic information systems (GIS) in general, and of QGIS in particular.
- II. Provide an overview of core QGIS map production functionality.
- III. A Guide to map drawing editing tools, features and support resources.

1. Outcome of the course :

- i. The Student will describe the fundamental concepts of geographic information science and technology.
- ii. The student will demonstrate proficiency in the basic functions of geospatial software.
- iii. The student will demonstrate basic basic proficiency in map creation and desing principles, including thematic map display, employment of map projections, and cartographic desing.
- iv. The student will demonstrate proficiency and acquisition of spatial data.

2. Syllabus in details (Contact Hourse 60, Credits)

A. Part A :- Theory

Unit I- Overview of QGIS

Introduction to QGIS,
Objectives of QGIS,



Working with Projections using QGIS

Unit II- Georeferencing & Digitization

Georeferencing of Toposheet /Map,

Vectorization or digitization of Toposheet/Map- point, Line and polygon

Unit III- Map Preparation and Composition using QGIS

Data processing,

Map Preparation and composition,

Symbology in of QGIS,

Data Exploration and

Working with Tables(Join Tables)

Unit IV- Data Query

Spatial Querying,

Data Query (Attribute Querying),

Unit V- Working with Google Earth Using QGIS

To introduce the Google Earth, Bing, Yahoo and Open street maps using

Quantum GIS, Introduction of Bhuvan etc.

Part B :- Practical

Practical / Project work will do under the guidance of the concern teachers.

Reference Books

1. Basudeb Bhatta, (2011), Remote Sensing and GIS (Second Edition), Oxford University Press.
2. S.M. Rashid, (1993): Remote Sensing in Geography, Manak Publication, Pvt. Ltd. Delhi.
3. Online Resources

● **Examination pattern** : Annual Examination pattern

● **Total Marks :**

Theory paper (Duration 2 Hrs.) : 50 marks

Project (Duration 2 weeks) : 30 marks*

Practical work and Internal Examination : 20 marks



Maximum Marks

: 100

Dr. V. C. Dande

Dr. N G. Shinde

Course coordinator

Head Department of Geography

