



Ahmednagar Jilha Maratha Vidya Prasarak Samaj's

# New Arts, Commerce and Science College, Parner

Tal. Parner, Dist. Ahmednagar - 414 302 (Maharashtra)



4<sup>th</sup> Cycle

## Assesment and Accreditation

### Criterion-1

### Cirricular Aspects

**KI : 1.3 Curriculum Enrichment**

QnM - 1.3.2

Percentage of students undertaking project work/field work/Internships



NAAC 'A' Grade

Best College Award  
by SPPU, Pune

Ahmednagar Jilha Maratha Vidya Prasarak Samaj's

## New Arts, Commerce & Science College

• Parner, Dist.- A.nagar, Maharashtra Pin - 414302 • Office (02488) 221537/35

Affiliated ID. No. PU/AN/ASC/019/1977 College Code No. 121

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**Principal Dr. Rangnath Aher**

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Ref. No. NAC&S


Date : 24/ 11 /2022

### DECLARATION

This is to declare that the information, reports, true copies of the supporting documents, numerical data, etc. submitted/presented in this file is verified by Internal Quality Assurance Cell (IQAC) and is correct as per the records. This declaration is for the purpose of NAAC accreditation of HEI for 4<sup>th</sup> Cycle period 2017-18 to 2021-22.

Date: 24/11/2022

Place: **Parner**

  
Prof. (Dr.) D. R. Thube

IQAC Coordinator

**IQAC COORDINATOR**  
New Art's, Commerce & Science College  
Parner, Dist. Ahmednagar



  
Dr. R. K. Aher

IQAC Chairman and Principal

**PRINCIPAL**  
New Arts, Commerce & Science College  
Parner, Tal. Parner, Dist. Ahmednagar

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# 1. B.A. English

## a. Course Syllabus

(S.Y.B.A)

### **Skill Enhancement Course-(SEC-2A & 2B)** **(w.e.f-2020- 2021)**

#### **“A Certificate Course in Skill Development”**

**[Two Credit Course For Each -Sem-III & IV -2x15=30 Hours For Each Sem]**

#### **Objectives:**

1. Enhancing the skill of using English for everyday communication
2. To acquaint the students with the verbal and nonverbal communication
3. To create opportunities to access exposure of speaking in various contexts
4. To acquaint and familiarize the students with soft skills
5. To develop interest among the students to interact in English

#### **Suggestions to Teachers:**

1. It is a learner-centric course.
2. The course aims at developing skill among the students.
3. Learning can be facilitated through interactive and informal guiding sessions.
4. Participation and up-gradation of the students' performance needs to be encouraged.
5. Practicals, Exercises, Activity monitoring, Projects, Seminars, Presentations, Group Discussions are some of the activities that the teachers are expected to encourage.
6. Relevant and innovative ideas of both the students and the teachers are always appreciable for a successful completion of this course
7. The concerned faculty/teachers have to maintain the record of the students (Given in the Evaluation pattern) as the credits to the students need to be given on the basis of preserved record.
8. **Nature of Evaluation-** Internal (College) 25 Marks and Semester End University Examination- 25 Marks

#### **SEMESTER-III- (SEC 2-A)**

#### **Course content:**

##### **Unit-I**

- 1- Introducing Yourself and Others
- 2- Joining and Leaving Conversation
- 3- Accepting/Declining Invitations

##### **Unit-II**

- 4- Asking/Giving/Refusing Permission
- 5- Digital Literacy
- 6- Project Management

**Question paper pattern****SEMESTER-III- (SEC 2-A)**

<u>Question-1-</u> Attempt any ONE of the following. (1 Out of 2- Unit-I)	10 Marks
<u>Question-2-</u> Attempt any ONE of the following. (1 Out of 2- Unit-II)	10 Marks
<u>Question-3-</u> Attempt any ONE of the following. (1 Out of 2- Unit- I & II)	05 Marks
<b>Total Marks- 25</b>	

**SEMESTER-IV- (SEC 2-B)****Course content:****Unit-I**

- 1- Asking/Giving/Refusing Information
- 2- Agreeing/Partial Agreeing/Disagreeing
- 3- Complaining

**Unit-II**

- 4- Apologizing
- 5- Vocabulary Building
- 6- Delivering a Speech

**Question paper pattern****SEMESTER-IV (SEC 2-B)**

<u>Question-1-</u> Attempt any ONE of the following. (1 Out of 2- Unit-I)	10 Marks
<u>Question-2-</u> Attempt any ONE of the following. (1 Out of 2- Unit-II)	10 Marks
<u>Question-3-</u> Attempt any ONE of the following. (1 Out of 2- Unit-I & II)	05 Marks
<b>Total Marks- 25</b>	

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## 2. B.A ENGLISH

### a. Course Syllabus

#### **Paper VI Entrepreneurship Development, Project Report & Oral Communication in English: Advanced ( Practical Paper) (03+ 01= 04 Credits)**

Semester V and VI 3+1 = One credit is for **Interview of an Entrepreneur, Field (SME/Start-up/Service Industry) Visit and Report, or any other Subject-centric activities** to be undertaken by the students in consultation with the teacher concerned. The teachers concerned have to evaluate and maintain the record of these activities.

#### **OBJECTIVES:**

1. Encouraging students to motivate about the possibility of self employment through entrepreneurship
2. Providing them with basic sources of information regarding Small and Medium Enterprises (SMEs)
3. Introducing students to the idea and aspects of Start-ups and government schemes to promote Start-ups
4. Introducing Students to the opportunities in Service Industry Sector
5. Promoting the idea of self employment through field work, study reports and interviews
5. Leading students to overall development of personality through key competency modules
6. Initiating students into research through project report
7. Creating a possibility of focused writing in the field of their interest

#### **Expected Outcomes:**

1. Students will able to identify the traits of an entrepreneur
2. They should become aware about the scope, challenges and opportunities in entrepreneurship
3. They will be aware about the basics required for setting up a start-up/ small or medium enterprise
4. They will be able to explore the opportunities in Service Industry Sector
5. They will be proficient in oral and written modes of expression

#### **Semester V (Theory + Practical)**

#### **Course Content**

(Figures to the right indicate hours allotted per topic)

#### **Unit I : Entrepreneurship Development**

07

- i. Meaning and Concept of Entrepreneurship Development
- ii. Who is an Entrepreneur?
- iii. Factors affecting the growth of Entrepreneurship
- iv. Benefits of Being an Entrepreneur
- v. Qualities of an Entrepreneur
- vi. SWOT Analysis
- vii. Functions of an Entrepreneur

**Unit II: SME and Start-ups****07 + Practical 02**

- i. Promotional steps for starting a Small and Medium Enterprises (SMEs)
- ii. Meaning, definition and types of SME
- iii. Role of the Government in promoting SME
- iv. Role of the Government in promoting Start-ups (Eg. Startup India)

- Sources of Information: **Practical and Government Websites**

District Industry Centre, MIDC, MS SSI Development Corporation, National Institute of E and Small Business Development (IESBUD), National E Development Board (NEDB), E D Institute of India (EDII), State Industrial Development Bank (SIDBI), MSEB, office of the Charity Commissioner  
[www.startupindia.gov.in](http://www.startupindia.gov.in) [www.smechamberofindia.com](http://www.smechamberofindia.com) <https://msme.gov.in/>

**Unit III: Service Industry****07**

- i. Meaning, definition and scope
- ii. Process of registration: SME and service industries
- iii. Similarities and differences between SMEs and service industries

Note: Some features of SMEs/Startups and Service Industries can be overlapping. Teachers are expected to explain these nuances.

**Unit IV. Techno Economic Feasibility Assessment****08**

- i. Primary Project Report
- ii. Detailed Project Report
- iii. Techno Economic Feasibility Report

**Unit V. Introduction to Laws and Regulations****07**

- i. Legal Aspects: Agreement, Franchisee, Lease, MOU etc. (Basics. Teachers can use some examples to explain these documents)
- ii. Basic Knowledge of Income Tax and GST
- iii. Factory Act and Payment of wages Act, shop act

**Unit VI. Motivational Stories****07**

- i. Motivational Stories of minimum Two Successful Entrepreneurs: Practical : Field work as well as reading Biographies/ Autobiographies of Entrepreneurs.
- ii. Screening of Films based on such success/ innovative ideas stories can also be done.



**Practical: Teachers are expected to guide students before the practical 03**

1. Experiences of an Entrepreneur (Unit I): Mode: Interview (Actual/ Email/On Phone)
2. Understanding SME/ Service Industry/ Start-up (Unit II and III): Mode: Visit to SME/ Service Industry/ Start-up

**Evaluation Pattern****Internal Evaluation: for 30 Marks**

**Internal Evaluation: 1. Mid Semester Examination: 20 Marks**

**2. Summary of a Successful Entrepreneur's Biography/Autobiography: 10 Marks**

- Note:** 1. Practical Exam to be conducted for the assessment of Interview and Report.  
 2. Summary of a Successful Entrepreneur's Biography/Autobiography to be considered for the assessment *only in exceptional situation when the visit is not possible.*

**External Evaluation: for 70 Marks****Semester End Theory Examination Pattern**

- |  |    |
|--|----|
| 1. Questions on Unit 1 (Short Notes Any THREE out of Four)     | 12 |
| 2. Questions on Unit 2 (Short Notes Any THREE out of Four)     | 12 |
| 3. Questions on Unit 3 (Any TWO out of Four)                   | 14 |
| 4. Questions on Unit 4 (Any TWO out of Four)                   | 16 |
| 5. Questions on Unit 5 and 6 (Short Notes Any FOUR out of Six) | 16 |

**Semester VI****Course Content**

**48 (38+ 10 for Project Report Guidance)**

**A**

**I. Voice Culture, Voice Modulation:** breath- control, sharpness, and volume of voice, pitch variation, pronunciation and intonation

4

The above will be tested in the external practical exam for 5 marks from the overall performance.

**II. Preparing News Bulletin for Radio/TV** containing international, national, regional, local and sports news, weather news, all types of news

10

This bulletin will be prepared by students themselves and will not be downloaded. Students will work on it for the term and keep it ready before final practical exam for reading. A copy of the same will be submitted to the dept

beforehand. (The students may be encouraged to transcribe their script phonemically)

**III. Speech** of about 5 to 7 minutes on a given topic.

10

Students will be encouraged to hear public speeches and write analysis of the same in their journal from the point of view of language, organization of thought, expressions of ideas and emotions, information, use of illustrations, quotations, body language, effectiveness etc. They may be given a list of topics for practice as well as to write the outline plan of the speech they will make.

**IV. Talking in a group-** a 'free-talk' activity to test spontaneity, naturalness, vocabulary, initiation, cooperation, consistency in expressing opinion etc

12

## B

### **Project Report or exercises in creative performance in any one area of language use studied in FE Syllabi**

10

*Suggestions for Teaching*

- 1) Extensive use of newspapers, radio and TV in the classroom is necessary
- 2) Teacher, with the help of the Head and Coordinator will plan the field and other activities beforehand and will prepare academic calendar
- 3) Students will be encouraged to spend more time with the department for fruitful activity
- 4) Guest lectures may be arranged from time to time
- 5) There will be insistence on students attending public speeches/ internet may be used for the same in absence of public functions
- 6) For project students must be able to use all the 4 language skills
- 7) As an option to project they may be encouraged to do exercise in any one area of language use studied in SY/TYFE syllabi; for example a student interested in newspaper may write articles, features, news of different types, letters to editors to show his/her proficiency in using language comfortably in that particular area.

He may be encouraged to write several different headlines for the same news to show his creativity or a student interested in trying his/her language skills in the field of advertising may write copy of ads of different types (eg. Domestic, cosmetics, health drinks, social cause) for different media. The respective dept/college may give a certificate for such a student showing proficiency of language skills required for a particular vocation

**Evaluation Pattern 30:70**

**Internal Evaluation: TV/Radio News reading/Preparing: 20 Marks**

**Assignment/ Participation in visits/activities Activity Report/ Industry Visit Report : 10 Marks** (A teacher may select any one of the above for assessment)

**Pattern for Semester Examination:** (Practical) 70 marks

**A:**

Q1 Reading news for TV/Radio – the students will present the News bulletin they have prepared as term work 10

Q2 Speech on the given topic for approximately 7 minutes 10

**B:**

Viva on Project Report 50

**Books recommended**

1. **An Introduction to Academic Writing:** Davis, Lloyd & Mackry, Susan
2. **Entrepreneurship Development:** G.R. Basotia / K K Sharma.
3. **Strengthen Your English :** Bhaskaran M (Oxford University Press)
4. **One Step Ahead Writing Reports :** Selly John
5. **Entrepreneurial Development:** S. S. Khanna (S. Chand)
6. **Entrepreneurship Development and Small Business Enterprise:** Charantimath Poornima M. (Pearson)
7. **Entrepreneurship | 11th Edition:** Robert D. Hisrich, Michael P. Peters, Dean A. Shepherd (McGraw Hill)

## 3. B.A. Marathi

### a. Course Structure



### सावित्रीबाई फुले पुणे विद्यापीठ, पुणे

मराठी विषयाचा पुनर्रचित अभ्यासक्रम - जून २०२१ पासून

तृतीय वर्ष कला (T.Y.B.A.) मराठी

निवड आधारित श्रेयांक पद्धत

Choice Based Credit System [CBCS]

सत्र	विषयाचे नाव	संकेतांक	पूर्वीचे नाव
पहिले	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : प्रवासवर्णन	[CC – 1 E (3)]	नियमित अभ्यासक्रम G3
दुसरे	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कविता	[CC – 1 F (3)]	
पहिले	व्यावहारिक व उपयोजित मराठी : भाग ५	[CC – 1 E (3)]	पर्यायी अभ्यासक्रम G3
दुसरे	व्यावहारिक व उपयोजित मराठी : भाग ६	[CC – 1 F (3)]	
पहिले	मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : प्रारंभ ते इ.स. १६००	[DSE 1 C (3+1)]	S3
दुसरे	मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : इ.स. १६०१ ते इ.स. १८१७	[DSE 1 D (3+1)]	
पहिले	वर्णनात्मक भाषाविज्ञान : भाग १	[DSE 2 C (3)+1]	S4
दुसरे	वर्णनात्मक भाषाविज्ञान : भाग २	[DSE 2 D (3)+1]	
पहिले	कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग १	[SEC 2 C (2)]	DSE विषयांशी निगडीत अनिवार्य
दुसरे	कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग २	[SEC 2 D (2)]	

**b. Course Syllabus****तृतीय वर्ष कला (T. Y. B. A.)**

नियमित अभ्यासक्रम

पहिले सत्र

विषयाचे नाव

मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : प्रारंभ ते इ.स. १६०० [DSE 1 C (3+1)]

**अभ्यासक्रमाची उद्दिष्टे :**

- १ वाङ्मयेतिहास संकल्पना, स्वरूप, प्रेरणा, प्रवृत्ती समजून घेणे.
- २ मध्ययुगीन कालखंडाची सामाजिक, सांस्कृतिक पार्श्वभूमी समजून घेणे.
- ३ मराठी भाषा, साहित्याची कालखंडानुरूप इतिहास समजून घेणे.

घटक	तपशील	श्रेयांक	तासिका
१	<p>वाङ्मयेतिहास संकल्पना आणि मराठी भाषा, वाङ्मयाचा उगम</p> <p>१. वाङ्मयेतिहास : संकल्पना आणि स्वरूप</p> <p>२. मराठी वाङ्मयेतिहासाचे कालखंड : स्वरूपचर्चा</p> <p>मराठी भाषा व वाङ्मयाचा उगम (कोरीव लेख आणि ग्रंथ या साधनांच्या आधारे )</p> <p>यादव काळ आणि बहामनी काळातील वाङ्मयनिर्मिती</p> <p>१ या कालखंडांची सामाजिक आणि सांस्कृतिक पार्श्वभूमी</p> <p>२ महानुभाव वाङ्मय : प्रेरणा, प्रवृत्ती व स्वरूप</p>	१	१५
२	<p>३ महानुभाव वाङ्मय :</p> <p>गद्य ग्रंथ - लीळाचरित्र, स्मृतिस्थळ, वृष्टान्तपाठ.</p> <p>पद्य ग्रंथ - महदंबेचे धवळे, साती ग्रंथ.</p> <p>१. वारकरी वाङ्मय : प्रेरणा, प्रवृत्ती व स्वरूप</p> <p>( संत ज्ञानेश्वर, संत नामदेव, संत मेळा, संत एकनाथ, शेख महंमद )</p>	१	१५
३	<p>१. मुकुंदराज, नृसिंहसरस्वती, दासोपंत, फादर स्टीफन्स, ब्रह्मगुणदास :</p> <p>वाङ्मयनिर्मितीचे स्वरूप</p>	१	१५
४	संशोधनपर प्रकल्प / क्षेत्र कार्य (घटक १, २ आणि ३)	१	१५

## 4. B.A. Marathi

### a. Course Structure



### सावित्रीबाई फुले पुणे विद्यापीठ, पुणे

मराठी विषयाचा पुनर्रचित अभ्यासक्रम - जून २०२१ पासून

तृतीय वर्ष कला (T.Y.B.A.) मराठी

निवड आधारित श्रेयांक पद्धत

Choice Based Credit System [CBCS]

सत्र	विषयाचे नाव	संकेतांक	पूर्वीचे नाव
पहिले	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : प्रवासवर्णन	[CC – 1 E (3)]	नियमित अभ्यासक्रम G3
दुसरे	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कविता	[CC – 1 F (3)]	
पहिले	व्यावहारिक व उपयोजित मराठी : भाग ५	[CC – 1 E (3)]	पर्यायी अभ्यासक्रम G3
दुसरे	व्यावहारिक व उपयोजित मराठी : भाग ६	[CC – 1 F (3)]	
पहिले	मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : प्रारंभ ते इ.स. १६००	[DSE 1 C (3+1)]	S3
दुसरे	मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : इ.स. १६०१ ते इ.स. १८१७	[DSE 1 D (3+1)]	
पहिले	वर्णनात्मक भाषाविज्ञान : भाग १	[DSE 2 C (3)+1]	S4
दुसरे	वर्णनात्मक भाषाविज्ञान : भाग २	[DSE 2 D (3)+1]	
पहिले	कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग १	[SEC 2 C (2)]	DSE विषयांशी निगडीत अनिवार्य
दुसरे	कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग २	[SEC 2 D (2)]	

**b. Course Syllabus**

दुसरे सत्र  
विषयाचे नाव

मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास - इ.स. १६०० ते इ.स. १८१७ [DSE1 D (3+1)]

घटक	तपशील	श्रेयांक	तासिका
१	शिवकाल आणि पेशवेकाळातील वाङ्मयनिर्मिती १. या कालखंडांची सामाजिक आणि सांस्कृतिक पार्श्वभूमी २. संत तुकाराम : वाङ्मयनिर्मितीचे स्वरूप ३. संत रामदास : वाङ्मयनिर्मितीचे स्वरूप	१	१५
२	पंडित आणि शाहिरांची वाङ्मयनिर्मिती १. पंडित वाङ्मय : स्वरूप, प्रेरणा, प्रवृत्ती, आणि वैशिष्ट्ये मुक्तेश्वर, वामनपंडित, रघुनाथपंडित, मोरोपंत २. शाहिरी वाङ्मय : स्वरूप, प्रेरणा, प्रवृत्ती आणि वैशिष्ट्ये अनंत फंदी, परशराम, राम जोशी, प्रभाकर, होनाजी बाळा	१	१५
३	बखर आणि गद्य वाङ्मयनिर्मिती १. बखर वाङ्मय : स्वरूप, प्रेरणा, प्रवृत्ती आणि वैशिष्ट्ये सभासदाची बखर, शिवछत्रपतींचे सप्तप्रकरणात्मक चरित्र, शिवदिग्विजय, पानिपतची बखर, भाऊसाहेबांची बखर. २. आज्ञापत्र	१	१५
४	संशोधनपर प्रकल्प / क्षेत्र कार्य (घटक १, २ आणि ३)	१	१५

**संदर्भ ग्रंथ :**

१. महाराष्ट्र सारस्वत, वि. ल. भावे
२. मराठी भाषेचा व वाङ्मयाचा इतिहास, बा. अ. भिडे
३. मराठी वाङ्मयाचा इतिहास, खंड पहिला, ल. रा. पांगारकर
४. प्राचीन मराठी वाङ्मयाचा इतिहास, भाग १, पूर्वार्ध आणि उत्तरार्ध, अ. ना. देशपांडे
५. महाराष्ट्रीयानांचे काव्यपरीक्षण, श्री. व्यं. केतकर
६. मराठी वाङ्मयाभिरुचीचे विहंगमावलोकन, जोग रा. श्री.
७. पाच भक्तिसंप्रदाय, र. रा. गोसावी
८. महाराष्ट्रातील पाच संप्रदाय, पं. रा. मोकाशी
९. नाथ संप्रदाय : उदय व विकास, प्र. न. जोशी
१०. मराठी साहित्याचे आदिबंध, उषा मा. देशमुख
११. यादवकालीन महाराष्ट्र, मु. गो. पानसे
१२. यादवकालीन मराठी, शं. गो. तुळपुळे
१३. महानुभवीय मराठी वाङ्मय, य. खु. देशपांडे
१४. महानुभाव पंथ आणि त्यांचे वाङ्मय, शं. गो. तुळपुळे
१५. श्रीचक्रधर : चरित्र, वि. भि. कोलते

## 5. B.A. Marathi

### a. Course Structure



### सावित्रीबाई फुले पुणे विद्यापीठ, पुणे

मराठी विषयाचा पुनर्रचित अभ्यासक्रम - जून २०२१ पासून

तृतीय वर्ष कला (T.Y.B.A.) मराठी

निवड आधारित श्रेयांक पद्धत

Choice Based Credit System [CBCS]

सत्र	विषयाचे नाव	संकेतांक	पूर्वीचे नाव
पहिले	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : प्रवासवर्णन	[CC – 1 E (3)]	नियमित अभ्यासक्रम G3
दुसरे	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कविता	[CC – 1 F (3)]	
पहिले	व्यावहारिक व उपयोजित मराठी : भाग ५	[CC – 1 E (3)]	पर्यायी अभ्यासक्रम G3
दुसरे	व्यावहारिक व उपयोजित मराठी : भाग ६	[CC – 1 F (3)]	
पहिले	मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : प्रारंभ ते इ.स. १६००	[DSE 1 C (3+1)]	S3
दुसरे	मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : इ.स. १६०१ ते इ.स. १८१७	[DSE 1 D (3+1)]	
पहिले	वर्णनात्मक भाषाविज्ञान : भाग १	[DSE 2 C (3)+1]	S4
दुसरे	वर्णनात्मक भाषाविज्ञान : भाग २	[DSE 2 D (3)+1]	
पहिले	कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग १	[SEC 2 C (2)]	DSE विषयांशी निगडीत अनिवार्य
दुसरे	कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग २	[SEC 2 D (2)]	



## b. Course Syllabus

### तृतीय वर्ष कला (T. Y. B. A.)

नियमित अभ्यासक्रम

पहिले सत्र

विषयाचे नाव

#### वर्णनात्मक भाषाविज्ञान : भाग १ [DSE 2 C (3)+1]

अभ्यासक्रमाची उद्दिष्टे :

- १ भाषा स्वरूप, वैशिष्ट्ये व कार्ये समजावून घेणे.
- २ भाषा अभ्यासाची आवश्यकता स्पष्ट करणे.
- ३ भाषा अभ्यासाच्या शाखा आणि विविध पद्धतींचा थोडक्यात परिचय करून घेणे.
- ४ वागिन्द्रियाची रचना, कार्य आणि स्वनिर्मितीची प्रक्रिया समजावून घेणे.
- ५ स्वनविज्ञान, स्वनिमविचार आणि मराठीची स्वनिमव्यवस्था समजावून घेणे.

घटक	तपशील	श्रेयांक	तासिका
१	<b>भाषा : स्वरूप व संकल्पना</b> १ भाषा : स्वरूप, वैशिष्ट्ये व कार्ये २ संदेशन : मानव व मानवेतर संदेशन ३ भाषाभ्यासाच्या शाखा ( ध्वनिविचार – व्याकरणविचार – अर्थविचार – शब्दसंग्रह - स्थूल परिचय) ४ भाषेच्या अभ्यासाचे महत्त्व व भाषाभ्यासाच्या पद्धती (ऐतिहासिक, वर्णनात्मक, सामाजिक, तुलनात्मक – स्थूल परिचय)	१	१५
२	<b>स्वनविचार</b> १ स्वनविज्ञान : स्वरूप व संकल्पना ( उच्चारणकेंद्री - संचारणकेंद्री – श्रवणकेंद्री) २ वागिन्द्रिय : रचना व कार्य स्वनांची निर्मितीप्रक्रिया ३ स्वनांचे वर्गीकरण व वर्गीकरणाची तत्त्वे ( उच्चारण स्थान, उच्चारण अवयव, प्रयत्न )	१	१५
३	<b>स्वनिमविचार</b> १ स्वन -स्वनिम-स्वनांतर (परस्पर संबंध व प्रकार) २ स्वनिमनिश्चितीची तत्त्वे ३ विनियोग संकल्पना (व्यवच्छेदक विनियोग- पूरक विनियोग - मुक्त परिवर्तन ) मराठीची स्वनिमव्यवस्था ( स्वरस्वनिम - अर्धस्वरस्वनिम - व्यंजन स्वनिम – खंडित व खंडाधिष्ठीत स्वनिम -बलाघात, सुरावली – नासिक्यरंजन - सीमासंधी)	१	१५
४	संशोधनपर प्रकल्प / क्षेत्रकार्य (घटक १, २ आणि ३)	१	१५

## 6. B.A. Marathi

### a. Course Structure



### सावित्रीबाई फुले पुणे विद्यापीठ, पुणे

मराठी विषयाचा पुनर्रचित अभ्यासक्रम - जून २०२१ पासून

तृतीय वर्ष कला (T.Y.B.A.) मराठी

निवड आधारित श्रेयांक पद्धत

Choice Based Credit System [CBCS]

सत्र	विषयाचे नाव	संकेतांक	पूर्वीचे नाव
पहिले	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : प्रवासवर्णन	[CC – 1 E (3)]	नियमित अभ्यासक्रम G3
दुसरे	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कविता	[CC – 1 F (3)]	
पहिले	व्यावहारिक व उपयोजित मराठी : भाग ५	[CC – 1 E (3)]	पर्यायी अभ्यासक्रम G3
दुसरे	व्यावहारिक व उपयोजित मराठी : भाग ६	[CC – 1 F (3)]	
पहिले	मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : प्रारंभ ते इ.स. १६००	[DSE 1 C (3+1)]	S3
दुसरे	मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : इ.स. १६०१ ते इ.स. १८१७	[DSE 1 D (3+1)]	
पहिले	वर्णनात्मक भाषाविज्ञान : भाग १	[DSE 2 C (3)+1]	S4
दुसरे	वर्णनात्मक भाषाविज्ञान : भाग २	[DSE 2 D (3)+1]	
पहिले	कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग १	[SEC 2 C (2)]	DSE विषयांशी निगडीत अनिवार्य
दुसरे	कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग २	[SEC 2 D (2)]	

**b. Course Syllabus**

दुसरे सत्र  
विषयाचे नाव

वर्णनात्मक भाषाविज्ञान : भाग २ - ४ [DSE 2 D (3)+1]

अभ्यासक्रमाची उद्दिष्टे :

१. रूपविन्यास आणि मराठीची रूपव्यवस्था समजावून घेणे
२. वाक्यविन्यास आणि वाक्यव्यवस्थेचा मराठी भाषेच्यासंदर्भात परिचय करून देणे
३. अर्थविन्यास या संकल्पनेचा भाषावैज्ञानिक अंगाने परिचय करून देणे

घटक	तपशील	श्रेयांक	तासिका
१	<b>रूपविचार</b> १ रूपविन्यास (संकल्पना) २ रूपिका - रूपिम - रूपिकांतर : स्वरूप व प्रकार ३ रूपिम निश्चितीची तत्त्वे ४ विनियोग संकल्पना ५ प्रकृती आणि प्रत्यय यांचे वर्गीकरण	१	१५
२	<b>वाक्यविचार</b> १ वाक्यविन्यास (संकल्पना परिचय) २ घटक आणि रचना : परस्पर संबंध ३ वाक्याचे घटक (उद्देश्य, विधेय) ४ प्रथमोपस्थित संघटक संकल्पना व वाक्यविश्लेषण ( शब्द - शब्दबंध - उपवाक्य - वाक्य ) ५ वाक्यांचे प्रकार	१	१५
३	<b>अर्थविचार</b> १ अर्थ : स्वरूप व संकल्पना २ अर्थविन्यास (संकल्पना परिचय) ३ अर्थाचे वर्गीकरण (प्रकार: सांकल्पनिक अर्थ - साहचर्यपर अर्थ- शैलीगत अर्थ- भावपर अर्थ- परावर्तीत अर्थ - विषय अर्थ ) ४ अर्थविन्यासाची व्यापकता ( समानार्थी शब्द, अनेकार्थी शब्द - सरूपता - अर्थसमावेश - अर्थविरोध)	१	१५
४	संशोधनपर प्रकल्प / क्षेत्रकार्य (घटक १, २ आणि ३)	१	१५

## 7. B.A. Hindi

### a. Course Structure



सावित्रीबाई फुले पुणे विश्वविद्यालय, पुणे  
**Savitribai Phule Pune University, Pune**

हिंदी पाठ्यक्रम  
**Hindi Syllabus**

संबंध महाविद्यालयों के लिए  
**For Affiliated colleges**

बी. ए. तृतीय वर्ष कला  
(पंचम एवं षष्ठ अयन)  
**Fifth & Sixth Semester**

शैक्षिक वर्ष  
**Academic year**

**2021-2022**

**अनुक्रम**  
बी. ए. तृतीय वर्ष कला  
पंचम एवं षष्ठ अयन **(Fifth & Sixth Semester)**  
शैक्षिक वर्ष 2021-22 से

कोर्स नं.	पंचम एवं षष्ठ अयन	क्रेडिट	पृष्ठ क्रमांक
बी. ए. तृतीय वर्ष कला			
Core Course -1E (G-3)	कथेतर विधाएँ (पंचम अयन)	3	
Core Course -1F (G-3)	गज़ल विधा और पत्राचार (षष्ठ अयन)	3	
बी. ए. तृतीय वर्ष कला – वैकल्पिक प्रयोजनमूलक हिंदी			
Core Course -1E (G-3)	प्रयोजनमूलक हिंदी : कार्यालयीन व्यवहार (पंचम अयन)	3	
Core Course -1F (G-3)	प्रयोजनमूलक हिंदी : माध्यम लेखन (षष्ठ अयन)	3	
बी. ए. तृतीय वर्ष कला (हिंदी विशेष)			
Discipline Specific Elective DSE 1 C (S3)	हिंदी साहित्य का इतिहास (आदिकाल, भक्तिकाल, रीतिकाल का सामान्य परिचय) (पंचम अयन)	3+1	
Discipline Specific Elective 2 C (S4)	भाषाविज्ञान (सामान्य परिचय) (पंचम अयन)	3+1	
Discipline Specific Elective 1 D (S3)	हिंदी साहित्य का इतिहास (आधुनिक काल सामान्य परिचय) (षष्ठ अयन)	3+1	
Discipline Specific Elective 2 D (S4)	हिंदी भाषा और उसका विकास (षष्ठ अयन)	3+1	
बी. ए. तृतीय वर्ष कला			
Skill Enhancement Course 2 C	पटकथा लेखन (पंचम अयन)	2	
Skill Enhancement Course SEC 2 D	साहित्य और फिल्मांतरण (षष्ठ अयन)	2	

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## b. Course Syllabus

बी. ए. तृतीय वर्ष कला (शैक्षिक वर्ष 2021-2022 से)

पंचम अयन (Fifth Semester)

पाठ्यचर्या : **Discipline Specific Elective 1 C (S3)** हिंदी साहित्य का इतिहास (आदिकाल, भक्तिकाल, रीतिकाल का सामान्य परिचय) 3 कर्मांक (3 Credit) + 1\*

उद्देश्य :

1. हिंदी साहित्येतिहास लेखन का परिचय देना।
2. हिंदी साहित्येतिहास के कालविभाजन तथा नामकरण का परिचय देना।
3. आदिकालीन, भक्तिकालीन, रीतिकालीन प्रमुख साहित्यिक प्रवृत्तियों, रचनाकारों और रचनाओं से परिचित कराना।

इकाई	पाठ्यविषय	तासिकाएँ
इकाई-I	हिंदी साहित्य का कालविभाजन और नामकरण। आदिकाल की पृष्ठभूमि, रासो साहित्य : पृथ्वीराज रासो और कवि चंदबरदायी का परिचय। सिद्ध और नाथ साहित्य : गोरखनाथ का साहित्यिक परिचय। अमीर खुसरो की हिंदी कविता। आदिकालीन साहित्य की विशेषताएँ।	15 तासिकाएँ
इकाई-II	भक्तिकाल के उदय के सामाजिक, सांस्कृतिक कारण। भक्ति आंदोलन का महत्व, पृष्ठभूमि। निर्गुण काव्य : संत काव्य की विशेषताएँ। संत कबीर का सामान्य परिचय। सूफी काव्य की विशेषताएँ। कवि जायसी का सामान्य परिचय। सगुण काव्य : राम काव्य की विशेषताएँ। कवि तुलसीदास का सामान्य परिचय। कृष्ण काव्य की विशेषताएँ। कवि सूरदास का सामान्य परिचय।	15 तासिकाएँ
इकाई-III	रीतिकाल की सामाजिक, राजनीतिक, सांस्कृतिक पृष्ठभूमि। रीतिकाल की प्रमुख प्रवृत्तियों का (रीतिबद्ध, रीतिसिद्ध, रीतिमुक्त) सामान्य परिचय। रीतिबद्ध कवि केशवदास का सामान्य परिचय। रीतिसिद्ध कवि बिहारी का सामान्य परिचय। रीतिमुक्त कवि घनानंद का सामान्य परिचय।	15 तासिकाएँ
Research Project	1* One Credit for Research Project, field work etc.	

पूर्णांक : 100

आंतरिक मूल्यांकन : 30 अंक (लघुत्तरी परीक्षा- 20 अंक, शोध परियोजना/समूह परियोजना/मौखिक प्रस्तुति/क्षेत्रीय अध्ययन- 10 अंक)

## 8. B. A. Hindi

### a. Course Structure



सावित्रीबाई फुले पुणे विश्वविद्यालय, पुणे  
**Savitribai Phule Pune University, Pune**

हिंदी पाठ्यक्रम  
**Hindi Syllabus**

संबंध महाविद्यालयों के लिए  
**For Affiliated colleges**

बी. ए. तृतीय वर्ष कला  
(पंचम एवं षष्ठ अयन)  
**Fifth & Sixth Semester**

शैक्षिक वर्ष  
**Academic year**

**2021-2022**

**अनुक्रम**  
बी. ए. तृतीय वर्ष कला  
पंचम एवं षष्ठ अयन **(Fifth & Sixth Semester)**  
शैक्षिक वर्ष 2021-22 से

कोर्स नं.	पंचम एवं षष्ठ अयन	क्रेडिट	पृष्ठ क्रमांक
बी. ए. तृतीय वर्ष कला			
Core Course -1E (G-3)	कथेतर विधाएँ (पंचम अयन)	3	
Core Course -1F (G-3)	गज़ल विधा और पत्राचार (षष्ठ अयन)	3	
बी. ए. तृतीय वर्ष कला – वैकल्पिक प्रयोजनमूलक हिंदी			
Core Course -1E (G-3)	प्रयोजनमूलक हिंदी : कार्यालयीन व्यवहार (पंचम अयन)	3	
Core Course -1F (G-3)	प्रयोजनमूलक हिंदी : माध्यम लेखन (षष्ठ अयन)	3	
बी. ए. तृतीय वर्ष कला (हिंदी विशेष)			
Discipline Specific Elective DSE 1 C (S3)	हिंदी साहित्य का इतिहास (आदिकाल, भक्तिकाल, रीतिकाल का सामान्य परिचय) (पंचम अयन)	3+1	
Discipline Specific Elective 2 C (S4)	भाषाविज्ञान (सामान्य परिचय) (पंचम अयन)	3+1	
Discipline Specific Elective 1 D (S3)	हिंदी साहित्य का इतिहास (आधुनिक काल सामान्य परिचय) (षष्ठ अयन)	3+1	
Discipline Specific Elective 2 D (S4)	हिंदी भाषा और उसका विकास (षष्ठ अयन)	3+1	
बी. ए. तृतीय वर्ष कला			
Skill Enhancement Course 2 C	पटकथा लेखन (पंचम अयन)	2	
Skill Enhancement Course SEC 2 D	साहित्य और फिल्मांतरण (षष्ठ अयन)	2	

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## b. Course Syllabus

बी. ए. तृतीय वर्ष कला (शैक्षिक वर्ष 2021-2022 से)

षष्ठ अयन (Sixth Semester)

पाठ्यचर्या : **Discipline Specific Elective 1 D (S3)** हिंदी साहित्य का इतिहास

(आधुनिक काल सामान्य परिचय)

3 कर्मांक (3 Credit) + 1\*

उद्देश्य :

1. आधुनिक काल की पृष्ठभूमि से छात्रों अवगत कराना।
2. भारतेंदु युगीन, द्विवेदी युग के काव्य की विशेषताओं से छात्रों को अवगत कराना।
3. आधुनिक काल के रचनाकारों और रचनाओं से परिचित कराना।
4. हिंदी गद्य के उद्भव और विकास से छात्रों को अवगत कराना।

इकाई	पाठ्यविषय	तासिकाएँ
इकाई-I	आधुनिक काल की पृष्ठभूमि भारतेंदुयुगीन काव्य की सामान्य विशेषताएँ। प्रमुख कवि – भारतेंदु हरिश्चंद्र, बद्रिनारायण चौधरी 'प्रेमघन'। द्विवेदी युगीन काव्य की सामान्य विशेषताएँ। प्रमुख कवि – मैथिलीशरण गुप्त, अयोध्यासिंह उपाध्याय 'हरिऔध'	15 तासिकाएँ
इकाई-II	छायावादी काव्य की सामान्य विशेषताएँ। छायावाद के प्रमुख कवि – जयशंकर प्रसाद, सुमित्रानंदन पंत, सूर्यकांत त्रिपाठी 'निराला', महादेवी वर्मा का सामान्य परिचय। प्रगतिवादी काव्य और प्रमुख कवि – रामधारी सिंह 'दिनकर', नागार्जुन का सामान्य परिचय। प्रयोगवादी काव्य और प्रमुख कवि – सच्चिदानंद हीरानंद वात्स्यायन 'अज्ञेय' का सामान्य परिचय।	15 तासिकाएँ
इकाई-III	हिंदी गद्य का उद्भव और विकास फोर्ट विलियम कॉलेज का योगदान हिंदी उपन्यास साहित्य का विकासक्रम (सामान्य परिचय) हिंदी कहानी साहित्य का विकासक्रम (सामान्य परिचय) हिंदी नाटक साहित्य का विकासक्रम (सामान्य परिचय)	15 तासिकाएँ
Research Project	1* One Credit for Research Project, field work etc.	

पूर्णांक : 100

आंतरिक मूल्यांकन : 30 अंक (लघुत्तरी परीक्षा- 20 अंक, शोध परियोजना/समूह परियोजना/मौखिक प्रस्तुति/क्षेत्रीय अध्ययन- 10 अंक)

सत्रांत परीक्षा : 70 अंक

## 9. B. A. Hindi

### a. Course Structure



सावित्रीबाई फुले पुणे विश्वविद्यालय, पुणे  
**Savitribai Phule Pune University, Pune**

हिंदी पाठ्यक्रम  
**Hindi Syllabus**

संबंध महाविद्यालयों के लिए  
**For Affiliated colleges**

बी. ए. तृतीय वर्ष कला  
(पंचम एवं षष्ठ अयन)  
**Fifth & Sixth Semester**

शैक्षिक वर्ष  
**Academic year**

**2021-2022**

**अनुक्रम**  
बी. ए. तृतीय वर्ष कला  
पंचम एवं षष्ठ अयन **(Fifth & Sixth Semester)**  
शैक्षिक वर्ष 2021-22 से

कोर्स नं.	पंचम एवं षष्ठ अयन	क्रेडिट	पृष्ठ क्रमांक
बी. ए. तृतीय वर्ष कला			
Core Course -1E (G-3)	कथेतर विधाएँ (पंचम अयन)	3	
Core Course -1F (G-3)	गज़ल विधा और पत्राचार (षष्ठ अयन)	3	
बी. ए. तृतीय वर्ष कला – वैकल्पिक प्रयोजनमूलक हिंदी			
Core Course -1E (G-3)	प्रयोजनमूलक हिंदी : कार्यालयीन व्यवहार (पंचम अयन)	3	
Core Course -1F (G-3)	प्रयोजनमूलक हिंदी : माध्यम लेखन (षष्ठ अयन)	3	
बी. ए. तृतीय वर्ष कला (हिंदी विशेष)			
Discipline Specific Elective DSE 1 C (S3)	हिंदी साहित्य का इतिहास (आदिकाल, भक्तिकाल, रीतिकाल का सामान्य परिचय) (पंचम अयन)	3+1	
Discipline Specific Elective 2 C (S4)	भाषाविज्ञान (सामान्य परिचय) (पंचम अयन)	3+1	
Discipline Specific Elective 1 D (S3)	हिंदी साहित्य का इतिहास (आधुनिक काल सामान्य परिचय) (षष्ठ अयन)	3+1	
Discipline Specific Elective 2 D (S4)	हिंदी भाषा और उसका विकास (षष्ठ अयन)	3+1	
बी. ए. तृतीय वर्ष कला			
Skill Enhancement Course 2 C	पटकथा लेखन (पंचम अयन)	2	
Skill Enhancement Course SEC 2 D	साहित्य और फिल्मांतरण (षष्ठ अयन)	2	

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## b. Course Syllabus

बी. ए. तृतीय वर्ष कला (शैक्षिक वर्ष 2021–2022 से)

पंचम अयन (Fifth Semester)

पाठ्यचर्या : **Discipline Specific Elective 2 C (S4)** भाषाविज्ञान (सामान्य परिचय)

3 कर्मांक (3 Credit) + 1\*

उद्देश्य :

1. भाषाविज्ञान के स्वरूप का परिचय देना।
2. छात्रों को भाषाविज्ञान की व्याप्ति समझाना।
3. भाषाविज्ञान के अध्ययन की दिशाओं का परिचय देना।
4. भाषाविज्ञान के अनुप्रयोगात्मक पक्ष को समझाना।
5. साहित्य-अध्ययन में भाषाविज्ञान की उपयोगिता समझाना।

इकाई	पाठ्यविषय	तासिकाएँ
इकाई-I	भाषा विज्ञान का नामकरण और परिभाषा, भाषाविज्ञान की शाखाएँ। भाषा विज्ञान का अन्य शाखाओं से संबंध : भाषा विज्ञान और व्याकरण, भाषा विज्ञान और साहित्य, भाषा विज्ञान और मनोविज्ञान, भाषा विज्ञान और भूगोल।	15 तासिकाएँ
इकाई-II	ध्वनि विज्ञान : ध्वनि का अर्थ और परिभाषा। ध्वनि यंत्र। ध्वनि गुण : मात्रा, स्वराघात, बलाघात। ध्वनि परिवर्तन के कारण। रूप विज्ञान : अर्थ और परिभाषा। रूप और रूपिम में अंतर रूपिम के भेद : मुक्त रूपिम, बद्ध रूपिम, मुक्तबद्ध रूपिम, रूप परिवर्तन के कारण।	15 तासिकाएँ
इकाई-III	अर्थ विज्ञान : परिभाषा। अर्थ परिवर्तन की दिशाएँ। अर्थ परिवर्तन के कारण।	15 तासिकाएँ
Research Project	1* One Credit for Research Project, field work etc.	

अंक विभाजन – पूर्णांक : 100

आंतरिक मूल्यांकन – 30 (लघुत्तरी परीक्षा– 20, शोध परियोजना/समूह परियोजना/मौखिक प्रस्तुति/क्षेत्रीय अध्ययन– 10)

## 10. B. A. Hindi

### a. Course Structure



सावित्रीबाई फुले पुणे विश्वविद्यालय, पुणे  
**Savitribai Phule Pune University, Pune**

हिंदी पाठ्यक्रम  
**Hindi Syllabus**

संबंध महाविद्यालयों के लिए  
**For Affiliated colleges**

बी. ए. तृतीय वर्ष कला  
(पंचम एवं षष्ठ अयन)  
**Fifth & Sixth Semester**

शैक्षिक वर्ष  
**Academic year**

**2021-2022**

**अनुक्रम**  
बी. ए. तृतीय वर्ष कला  
पंचम एवं षष्ठ अयन **(Fifth & Sixth Semester)**  
शैक्षिक वर्ष 2021-22 से

कोर्स नं.	पंचम एवं षष्ठ अयन	क्रेडिट	पृष्ठ क्रमांक
बी. ए. तृतीय वर्ष कला			
Core Course -1E (G-3)	कथेतर विधाएँ (पंचम अयन)	3	
Core Course -1F (G-3)	गज़ल विधा और पत्राचार (षष्ठ अयन)	3	
बी. ए. तृतीय वर्ष कला – वैकल्पिक प्रयोजनमूलक हिंदी			
Core Course -1E (G-3)	प्रयोजनमूलक हिंदी : कार्यालयीन व्यवहार (पंचम अयन)	3	
Core Course -1F (G-3)	प्रयोजनमूलक हिंदी : माध्यम लेखन (षष्ठ अयन)	3	
बी. ए. तृतीय वर्ष कला (हिंदी विशेष)			
Discipline Specific Elective DSE 1 C (S3)	हिंदी साहित्य का इतिहास (आदिकाल, भक्तिकाल, रीतिकाल का सामान्य परिचय) (पंचम अयन)	3+1	
Discipline Specific Elective 2 C (S4)	भाषाविज्ञान (सामान्य परिचय) (पंचम अयन)	3+1	
Discipline Specific Elective 1 D (S3)	हिंदी साहित्य का इतिहास (आधुनिक काल सामान्य परिचय) (षष्ठ अयन)	3+1	
Discipline Specific Elective 2 D (S4)	हिंदी भाषा और उसका विकास (षष्ठ अयन)	3+1	
बी. ए. तृतीय वर्ष कला			
Skill Enhancement Course 2 C	पटकथा लेखन (पंचम अयन)	2	
Skill Enhancement Course SEC 2 D	साहित्य और फिल्मांतरण (षष्ठ अयन)	2	

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## b. Course Syllabus

बी. ए. तृतीय वर्ष कला (शैक्षिक वर्ष 2021–2022 से)

षष्ठ अयन (Sixth Semester)

पाठ्यचर्या : **Discipline Specific Elective 2 D (S4)** हिंदी भाषा और उसका विकास

3 कर्मांक (3 Credit) + 1\*

उद्देश्य :

1. भाषाविज्ञान के स्वरूप का परिचय देना।
2. छात्रों को भाषाविज्ञान की व्याप्ति समझाना।
3. भाषाविज्ञान के अध्ययन की दिशाओं का परिचय देना।
4. भाषाविज्ञान के अनुप्रयोगात्मक पक्ष को समझाना।
5. साहित्य-अध्ययन में भाषाविज्ञान की उपयोगिता समझाना।

इकाई	पाठ्यविषय	तासिकाएँ
इकाई-I	भाषा की परिभाषा और भाषा की विशेषताएँ। भाषा के विविध रूप : बोली, भाषा, परिनिष्ठित भाषा, साहित्यिक भाषा, राजभाषा, राष्ट्रभाषा, संपर्क भाषा, अंतर्राष्ट्रीय भाषा।	15 तासिकाएँ
इकाई-II	हिंदी की बोलियाँ : पश्चिमी हिंदी, पूर्वी हिंदी, बिहारी हिंदी, पहाड़ी हिंदी, राजस्थानी हिंदी। हिंदी का शब्द भंडार : तत्सम शब्द, तद्भव शब्द, देशज शब्द, आगत या विदेशी शब्दों का परिचय।	15 तासिकाएँ
इकाई-III	नगरीलिपि का उद्भव और विकास। नागरी लिपि की विशेषताएँ। नागरी लिपि में सुधार की संभावनाएँ।	15 तासिकाएँ
Research Project	1* One Credit for Research Project, field work etc.	

अंक विभाजन – पूर्णांक : 100

आंतरिक मूल्यांकन – 30 (लघुत्तरी परीक्षा– 20, शोध परियोजना/समूह परियोजना/मौखिक प्रस्तुति/क्षेत्रीय अध्ययन– 10)

सत्रांत परीक्षा – 70

# 11. B.A. History

## a. Course Structure



**Savitribai Phule Pune University, Pune**

**Faculty of Humanities**

**T.Y.B.A. in History**

**Choice Based Credit System Syllabus**

**To be implemented from the Academic Year 2021-2022**



## Savitribai Phule Pune University, Pune.

### Faculty of Humanities

Structure of Choice Based Credit System for Undergraduate Program to be Implemented from Academic Year 2021-2022

### Subject: - T.Y.B.A. History Structure Academic Year 2021-2022

Semester	Core Courses (CC)	Skill Enhancement Course (SEC)	Discipline Specific Elective Courses (DSE)
V	<b>CC- 3(3)</b> Indian National Movement (1885-1947) <hr/> History of Civilization – World Civilization Part I	<b>SEC 2 C (2)</b> 9.South Indian Art and Architecture 10.Research Paper Writing 11.Museology	<b>DSE-3 C (3) +1</b> 7.Introduction to Historiography
			<b>DSE-4 D (3)+1</b> 8.Maharashtra in the 19 <sup>th</sup> Century
			<b>OR</b> 9.Constitutional Developments in India 1773 to 1853
VI	<b>CC- 4(3)</b> India After Independence- (1947-1991) <hr/> History of Civilization –World Civilization Part II	<b>SEC 2 D (2)</b> 12. Heritage management 13.Archaeology 14.Numismatics	<b>DSE-3 C (3)+1</b> 10 Applied History
			<b>DSE-4 D (3)+1</b> 11 Maharashtra in the 20 <sup>th</sup> Century <b>OR</b> Constitutional Developments in India 1858 to 1950

## b. Course Syllabus

**Savitribai Phule Pune University, Pune**  
**Proposed Syllabus in History for TYBA (Credit system)**  
**From the Academic Year 2021-22**  
**Under the Faculty of Humanities**  
**Discipline Specific Elective Courses (DSE-3C) -(3 + 1 Credit)**  
**Semester –VI, Course Title: Applied History**

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### Course objectives:

- 1) To Introduce students to information and importance of Applied History.
- 2) To help students understand the usefulness of history in the 21st century, its changing perspectives, the new ideas that have been invented, and the importance of History in a Competitive World.
- 3) To inform the students about the historical significance of Archaeology and Archives and the opportunities in the field of Archaeology and Archives through this course.
- 4) To inform the students about the opportunities in the field of Media, Museums through this Course.

### Course Outcomes:

1. Students will be introduced to the information and importance of applied history.
2. Student will learn about the Historical significance of Archaeology and Archives and opportunities in the field of Archaeology and Archives.
3. Through this course, students will be informed about the opportunities in the field of Media, Museums.
4. Students will learn about the usefulness of history in the 21st Century, its changing Perspectives, the new ideas that have been invented, and the importance of History in a Competitive World.

**Pedagogy:** Lectures / Visual Presentation / Critical Analysis / Assignments / Test/ e-learning

### Course Content

#### Unit-I. Applied History

14

- a. Applied History: Concept and Application
- b. Application of History in Various Subjects
- c. Co-relationship between Past and Present
- d. Contemporary History: Meaning and Nature

**Unit-II. Archaeology and Archives** **15**

- a) Archaeology and Archives: Definition and Development in India
- b) Archival Sources: Ancient, Medieval and Modern- A brief survey
- c) Heritage Sites: Types, Preservation and Conservation
- d) Historical Importance of Heritage Sites and Museums

**Unit-III. Mass Media and Applied History** **16**

- a) Mass Media: Meaning and Types
- b) Print media:
  - i). Establishment and growth of printing press in India
  - ii). Newspaper: Definition, Rise, Newspaper in India - A brief survey
- c) Electronic media: Radio, Television, E-media.

**Unit-IV: Project Work /Study Tour Report/Historical Places Visit Rreport****Project work and Evaluation scheme**

1. Candidate shall submit Project report of minimum 2000 words i.e.10 to12 pages (Should be DTP) to the department by end of the Semester.
2. A viva-voce should be conducted before theory examination and the results should be sent to the University as immediately
3. The Distribution of Marks – For Report Writing 20 Marks and for Vice-Voce 10 Marks

**Reference Books****English**

- 1) Bajaj Satish K, Research Methodology in History, Amol Pub Pvt.Ltd, New Delhi.
- 2) Bobade Bhajang R., Manuscriptology from Indian Sources, Pacific Publication, Delhi.
- 3) Carr E.H., What is History, Penguin Books, Harmondsworth, 1971.
- 4) Chitnis K.N., Research Methodology in History, Navi Path, Pune1979.
- 5) Collingwood R.G., The Idea of History, Oxford university,1961.
- 6) Datta.K.B., Mass Media in India, Akansha Publishing House, New Delhi,2005.
- 7) Director General, Archaeological Remains, Monuments and Museums Part1&2, Archaeological Survey of India, New Delhi, 1964.
- 8) Gaur.M. M., Electronic Media, Omega Publication, Delhi, 2006.

# 12. B.A. Economics

## a. Course Structure



## SAVITRIBAI PHULE PUNE UNIVERSITY

(Formerly University of Pune)

### T.Y.B.A. Economics Syllabus

(Choice Based Credit System and Semester System)

**Revised Syllabus will be implemented with effect from the  
academic year 2021-2022**

**T.Y.B.A. Economics****(Sem V & VI)**

Semester	Paper Name	Subject Code	Title of the Paper
<b>V</b>	Economics General - III		Indian Economic Development- I
	Economics Special - III		International Economics-I
	Economics Special - IV		Public Finance- I
	Skill Enhancement Course (SEC-3A)		Business Management- I
<b>VI</b>	Economics General - III		Indian Economic Development- II
	Economics Special - III		International Economics- II
	Economics Special - IV		Public Finance- II
	Skill Enhancement Course (SEC-3A)		Business Management- II (Project Report)

## b. Course Syllabus

### T.Y.B.A. Economics Skill Enhancement Course Business Management

Sem ester	CC Paper	Paper No.	Name of Paper	Lectures / Week	Total Lect.	CA Marks	ESE Marks	Total	No. of Credits
V	SEC -III SEC-3A		Business Management- I	03	30	15	35	50	2
VI	SEC -IV SEC-3A		Business Management - II Project	03	30	15	35	50	2

SEC -Skill Enhancement Course; CC -Core Course; CA - Continuous Assessment;  
ESE -End of Semester Examination

### T.Y.B.A. Economics Skill Enhancement Course SEC 3A: Business Management-I (Course Code: ) Semester – V

#### Course Learning Outcomes:

At the end of the Course, the Learner will have the following skills:

- Management of Business.
- Business planning and decision making
- Leadership Skills- Ability to work in teams at the same time, ability to show leadership qualities

Unit No.	Name and Sub Titles of the Topic	No. of Lectures	Skill Enhancement Exercises
1	<b>Business Management</b>	6	<ul style="list-style-type: none"> <li>• Discussion/ Practical/ Field Study</li> </ul>
	1.1 Nature and Scope of Management		
	1.2 Characteristics of Management		
	1.3 Need & Importance of Study of Management		
	1.4 Process of Management		
2	<b>Business Planning and Decision Making</b>	6	<ul style="list-style-type: none"> <li>• Case Studies / Mini Projects / Individual /Team Presentations.</li> <li>• Practical Exercises in Decision Making Process/ Problem Solving</li> </ul>
	2.1 Nature of Planning		
	2.2 Steps in Planning Process		
	2.3 Types of Business Planning		
	2.4 Study of Planning Process		
	2.5 Steps in Decisions Making Process		
	2.6 Factors affecting decision Making		

**T.Y.B.A. Economics**  
**Skill Enhancement Course**  
**SEC-3A: Business Management-II (Project Report)**  
**(Course Code:     )**  
**Semester – VI**

**Course Learning Outcomes:**

At the end of the Course, the Learner will have the following skills:

- Analytical Skills – Ability to analyze data collected and interpret in the most logical manner
- Project Report Writing Skills- Ability to comprehend and illustrate/demonstrate findings
- Presentation Skills – PPT/Poster- Ability to illustrate findings in the most appealing manner
- Leadership Skills: Ability to show leadership skills with business ideas or work on business ventures as a practical example

Unit No.	Name and Sub Titles of the Topic	No. of Lectures	Skill Enhancement Exercises
1	<b>Case Study</b>	2	Preview to Students for Project Report
	Guest Lecture – Local Entrepreneur – Success Stories / Struggles/ Historical Reviews/ Start-ups, etc		
2	<b>Project Interim Presentation</b>	14	Initial Mid Semester Presentation (15 marks)
	Detailed Study of ANY Business Enterprise under the Guidance of Subject Teacher OR Presentation of a Business Idea		
3	<b>Project Final Presentation</b>	14	Final Presentation Viva (35 Marks) Int. Examiner - 10 Ext. Examiner - 10 Report- 15
	Presentation with PPT or Poster or Exhibition of Business Ideas/ Reports		

**Recommended Books**

1. Stephen R. Covey, The 7 Habits of Highly effective People (1989), Guerilla Marketing.
2. Harvard Business Review, Management Tips, hbr.org/books.
3. Pandey, I.M. Financial Management, Persons 12<sup>th</sup> Edn.
4. Saksena, S.C., Principles of Business Management (2019), Sahitya Bhawan Publi.Agra.
5. Kalkar Parag and Ajinath Doke, Vyavsay Vyavsthapan, Nirali Prakashan, Pune.
6. Vasistha, Neeru, Principles of Management, Taxmann.
7. Hannagan, Tim. Management Concepts and Practices, Macmillan India Ltd.
8. Government of India, Official Websites.

# 13. B. B. A. Computer Application

## a. Course Structure

**Savitribai Phule Pune University, Pune**

**Bachelor of Business Administration (Computer Application)**

**BBA(CA)**

**(Under faculty of Commerce & Management)**

**(To be implemented from Academic year 2019-20)**

**1. Name of Programme:** Bachelor of Business Administration (Computer Application)

**2. Introduction:**

The degree shall be titled as Bachelor of Business Administration (B.B.A.)( Computer Application) under the Faculty of Commerce and Management. First Year B.B.A.(CA) choice based credit system is implemented w.e.f. the academic year 2019-2020 , Second Year B.B.A.(CA) II will be implement w.e.f. 2020-2021 and Third Year B.B.A.(CA) III w.e.f. 2021-2022

**3. Programme Objectives:**

- To produce skill oriented human resource.
- To impart practical skills among students.
- To make industry ready resource.
- To bring the spirit of entrepreneurship.

**4. Programme Structure:**

- The Programme is of a Three Year (Six semesters) Full Time Degree Programme.
- The programme shall be based on credit system comprising 132 credits.



**13. Titles of Papers and Scheme of Study for B.B.A. (C.A.) Programme**  
**CC-Core Course, EC-Elective Course, PR-Practical, PJ-Project,**  
**AECC-Ability Enhancement Compulsory Courses, SEC-Skill**  
**Enhancement Courses.**

**SEMESTER- I**

Subject Code	Subject Name	Course	Credits	
			Th	Pr
CA-101	Business Communication	CC	3	
CA-102	Principles of Management	CC	3	
CA-103	C Language	CC	3	
CA-104	Database Management System	CC	3	
CA-105	Statistics	CC	3	
CA-106	Computer Laboratory Based on 103 &104 (2 credits each)	PR		4
107	Add-On (PPA) (30 Hours)	SEC	2	

**SEMESTER- II**

Subject Code	Subject Name	Course	Credits	
			Th	Pr
CA-201	Organization Behavior & Human Resource Management	CC	3	
CA-202	Financial Accounting	CC	3	
CA-203	Business Mathematics	CC	3	
CA-204	Relational database	CC	3	
CA-205	Web Technology HTML-JS-CSS	CC	3	
CA-206	Computer Laboratory Based on 204 & 205(2 credits each)	PR		4
207	Add-On (Advance C) (30 Hours)	SEC	2	

**SEMESTER- III**

Subject Code	Subject Name	Course	Credits	
			Th	Pr
CA-301	Digital Marketing	CC	3	
CA-302	Data Structure	CC	3	
CA-303	Software Engineering	CC	3	
CA-304	Angular JS	EC	3	
OR				
CA-304	PHP	EC	3	
CA-305	Big data	EC	3	
OR				
CA-305	Block chain	EC	3	
CA-306	Computer Laboratory Based on 302 , 304 and 305 (2 credits each)	PR		2+2+2 = 6
307 AECC	Environment Awareness	AECC	2	

**SEMESTER- IV**

Subject Code	Subject Name	Course	Credits	
			Th	Pr
CA-401	Networking	CC	3	
CA-402	Object Oriented Concepts Through CPP	CC	3	
CA-403	Operating System	CC	3	
CA-404	<b>NODE JS</b>	<b>EC</b>	<b>3</b>	
OR				
CA-404	<b>Advance PHP</b>	<b>EC</b>	<b>3</b>	
CA-405	Project	EC		4
CA-406	Computer Laboratory Based on 402,404 (2 credits each)	PR		4
4	ADD-On (30 Hours)	SEC	2	

# 14. B. B. A. Computer Application

## a. Course Syllabus

Savitribai Phule Pune University  
T.Y.B.B.A.(C.A.) Sem-V  
Subject Code: 505

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SPPU BBA (CA) COURSE CONTENT - SEMESTER V and VI CBCS/2019 PATTERN - uploaded 10-6-2021 Page 14

**Subject: (DSE) Project**

**Total Credits: 04**

For the evaluation/ conduction of project separate guidelines will be provided.

# 15. B. B. A. Computer Application

## a. Course Syllabus

Savitribai Phule Pune University  
T.Y.B.B.A.(C.A.) Semester-VI  
Subject: Project  
Course Code : DSE- 605  
Total Credits: 04

For the evaluation / conduction of project separate guidelines will be provided.

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SPPU BBA (CA) COURSE CONTENT - SEMESTER V and VI CBCS/2019 PATTERN - uploaded 10-6-2021 Page 31

# 16. B.Sc. Physics

## a. Course Structure

CBCS: 2021-2022

T. Y. B.Sc.

Physics



## Savitribai Phule Pune University

*(Formerly University of Pune)*

### Three Year B.Sc. Degree Program in Physics

(Faculty of Science & Technology)

**T.Y.B.Sc. (Physics)**

**Choice Based Credit System**

**To be implemented from Academic Year 2021-2022**

**Savitribai Phule Pune University, Pune****Revised syllabus for T.Y.B.Sc. (Physics) (CBCS Pattern-2021-22)****To be implemented from Academic Year 2021-22****Salient Features of Revised Syllabi in Physics**

As far as possible to promote:

**1) Physics Education through Master Texts:**

It helps in understanding the theoretical and mathematical development of the subject and to create interest in the subject.

**2) Physics Education through Experimentation:**

It helps in general to improve scientific attitude. So emphasis is given on the development of experimental skills, data analysis, calculations, and also on the limitations of the experimental method and data and, results obtained.

**3) Physics Education through Problem Solving:** It helps in understanding the concepts of physics. It underline the strength of equations, formulae, graphs, mathematical tools to tackle the problems. So accordingly, we have introduced compulsory problem part in the question paper.

**4) Physics Education through History and Philosophy:**

It helps in understanding the conceptual development of the subject and thereby increase the interest in the subject. A topic on this is introduced in the Physics Course.

**5) Physics Education through Awareness of Misconceptions:**

It improves the scientific awareness among the students. A discussion on different subjects are encouraged.

**6) Physics Education through Proto-research:**

It creates interest in the subject and improves technological aspect. Accordingly, mini projects, hands-on activities, projects, models and demonstrations etc. is included in the syllabi.

**7) Physics Education through Qualitative Overview:**

It creates interest in the subject to continue to work in the field of science in general and physics in particular. Accordingly future directions and frontiers of the subject are included in the syllabi.

**8) Structure of Question paper:**

Existing structure shall continue.

**9) ATKT Rules:**

Existing rules shall apply.

## 10) Structure of the Course:

Semester	Course Type	Course Code	Course Name	Credit	
V	Discipline Specific Elective Course	PHY-351	Mathematical Methods in Physics-II	2	
		PHY-352	Electrodynamics	2	
		PHY-353	Classical Mechanics	2	
		PHY-354	Atomic and Molecular Physics	2	
		PHY-355	Computational Physics	2	
		<b>PHY-356: Elective-I (Select any One)</b>			2
		PHY-356(A)	Astronomy and Astrophysics-I		
		PHY-356(B)	Elements of Materials Science		
		PHY-356(C)	Biophysics		
		PHY-356(D)	Renewable Energy Sources-I		
		PHY-356(E)	Applied Optics		
		PHY-356(F)	C# programming		
		PHY-356(G)	Acoustics-I		
		PHY-357	Physics Laboratory-3A	2	
	PHY-358	Physics Laboratory-3B	2		
	PHY-359	Project-I	2		
	Skill Enhancement Course	<b>PHY-3510: Skill Enhancement Course-I (Select any One)</b>		2	
		PHY-3510(H)	Python Programming		
		PHY-3510(I)	Energy studies		
PHY-3510(J)		Introduction to Arduino			
PHY-3510(K)		Sensors and Transducer	2		
<b>PHY- 3511: Skill Enhancement Course-II (Select any One)</b>					
PHY-3511(L)		Physics Workshop Skill			
PHY-3511(M)		Biomedical Instrumentation			
PHY-3511(N)		Non-destructive Testing Techniques			
PHY- 3511(O)	Acoustics Applications				
VI	Discipline Specific Elective Course	PHY-361	Solid State Physics	2	
		PHY-362	Quantum Mechanics	2	
		PHY-363	Thermodynamics and Statistical Physics	2	
		PHY-364	Nuclear Physics	2	
		PHY-365	(A) Electronics-II <b>OR</b>	2	

			(B) Advanced Electronics		
		<b>PHY-366: Elective-II (Select any One)</b>			
		PHY-366(P)	Medical Electronics	2	
		PHY-366(Q)	Physics of Nanomaterials		
		PHY-366(R)	Microcontrollers		
		PHY-366(S)	Lasers		
		PHY-366(T)	Astronomy and Astrophysics-II		
		PHY-366(U)	Renewable Energy Sources-II		
		PHY-366(V)	Acoustics-II		
		PHY-367	Physics Laboratory-4A		2
		PHY-368	Physics Laboratory-4B	2	
		PHY-369	Project-II	2	
	Skill Enhancement Course	<b>PHY-3610: Skill Enhancement Course-III (Select any One)</b>			
		PHY-3610(W)	Scientific Data Analysis using Python	2	
		PHY-3610(X)	Solar PV System: Installation, Repairing and Maintenance		
		PHY-3610(Y)	Applications of Internet of things (IOT)		
		PHY-3610(Z)	Calibration Techniques		
			<b>PHY- 3611: Skill Enhancement Course-IV (Select any One)</b>		
			PHY- 3611(AA)	Microcontrollers	2
			PHY- 3611(AB)	Instrumentation for Agriculture	
			PHY- 3611(AC)	Radiation Physics	
			PHY- 3611(AD)	Photography	



## a. Course Syllabus

### T.Y.B.Sc. (Physics) (Sem-V)

#### PHY-359: Physics Project-I

Lectures: 36

(Credits-02)

#### Guidelines:

It is expected that,

1. The student does work equivalent to about ten (10) laboratory experiments throughout the semester in the third year.
2. One bears in mind that the project work is a practical course and it is intended to develop a set of skills pertaining to the laboratory work apart from the cognition of students. Therefore, the guides should not permit projects that involve no contribution on part of student.
3. The project must have a clear and strong link with the principles of basic physics and/or their applications.
4. The theme chosen should be such that it promotes better understanding of physics concepts and brings out the creativity in the students.
5. The evaluation of the project work must give due credit to the amount of the project work actually done by a student, skills shown by the student, understanding of the physics concepts involved and the final presentation at the time of viva voce.
6. It is also recommended that a teacher will look after Four (4) projects at one time.
7. Practical examination will be conducted semester wise.
8. The student can perform an Experimental/Theoretical/Computational Project in Physics or interdisciplinary areas under the supervision of one or more guides.
9. The student can learn the basics of the topic chosen for project, to learn how to do literature survey and set up the basic experimental/theoretical and computational techniques needed for the project.
10. The department encourage to students for projects both in experimental and theoretical areas of Physics in collaboration with other institutes and industry.

#### The Project work shall consist of the following Criteria.

1. Project work is mandatory for all the T. Y .B. Sc. students.
2. All the T. Y. B. Sc. students will be have to complete the Project work prescribed by the Board of Studies in Physics of Savitribai Phule Pune University during the V<sup>th</sup> Semester.
3. The Project work shall consist of the following Criteria.
  - It is expected that students must finalize the Title of Project, Aim and objective, Significance, Literature survey, Materials required, Method and Application etc.
  - Introduction to foundations of Project Work.
  - Introduction of Project Research Methodology.
  - Study of Data Collection Methods.
  - Project Problem Writing and Presentation Skills.

#### Evaluation weightage:

- Project-I: Semester End University Examination : 35 Marks
- Internal Examination: 15 Marks

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-369: Physics Project-II****Lectures: 36****(Credits-02)****Guidelines:**

It is expected that,

1. The student does work equivalent to about 10 laboratory experiments throughout the semesters in the third year.
2. One bears in mind that the project work is a practical course and it is intended to develop a set of skills pertaining to the laboratory work apart from the cognition of students. Therefore, the guides should not permit projects that involve no contribution on part of student.
3. The project must have a clear and strong link with the principles of basic physics and/or their applications.
4. The theme chosen should be such that it promotes better understanding of physics concepts and brings out the creativity in the students.
5. The evaluation of the project work must give due credit to the amount of the project work actually done by a student, skills shown by the student, understanding of the physics concepts involved and the presentation of the final report at the time of viva voce.
6. The viva voce should be conducted at the time of evaluation of project work at least for twenty minutes per student. Extra care must be taken in the evaluation of projects done in a pair or group. Delegation of the work done by individuals must be sought from the students in such cases.
7. Any ready-made material used in the report (such as downloaded pages from the web) must be clearly referred to and acknowledged.
8. It is also recommended that a teacher will look after 4 projects at one time.
9. Any non-adherence to this norm should attract a penalty by way of deduction in the marks awarded to a student. It is recommended that the College will provide consumables/contingencies for every project, to the tune of Rs. 750 /- each. (\*If the students paid extra fee other than laboratory fee then college will provide financial assistance for the Project work.)

**The Project work shall consist of the following Criteria.**

- 1) Working model (Experimental or Concept based simulation/Demonstration Related to Physics).
- 2) Understanding of the project.
- 3) Experimental Details.
- 4) Data collection and Data Analysis.
- 5) Innovation.
- 6) Outcomes/Result.
- 7) Conclusion.

**Note:** At the time of project practical examination, the candidate must submit the certified project report by the project in-charge and HOD. A candidate will be allowed to appear for the Project practical examination only if the candidate submits a project completion report duly certified by the project in-charge and Head of the department.

**The Project work shall include:**

Models based / Demonstrated Applications / Review articles / Simulation on PC on any concept in Physics / Comparative & differentiative study / Improvement in the existing experiment (Design and fabrication concept) / Extension of any regular experiments / Attempt to make experiment open-ended / Thorough survey of existing active components / devices, ICs, methods, means, technologies, generations, applications etc. / any innovative projects using the concept of Physics / Interdisciplinary areas.

**Evaluation weightage:**

- Semester End University Examination : 35 Marks
- Internal Examination: 15 Marks

# 17. B.Sc. Chemistry

## a. Course Structure

CBCS: 2019 Pattern

S. Y. B. Sc.

Chemistry

### Structure of S. Y. B. Sc. Chemistry

(According to CBCS – 2019 Pattern of SPPU)

Semester	Course	Discipline Specific Core (DSCC)*
III	Theory	CH-301 : Physical and Analytical Chemistry ( 2 credit, 36 L)
	Theory	CH-302 : Inorganic and Organic Chemistry ( 2 credit, 36 L)
	Practical	CH-303 : Chemistry Practical - III ( 2 credit, 72 L)
IV	Theory	CH-401 : Physical and Analytical Chemistry ( 2 credit, 36 L)
	Theory	CH-402 : Inorganic and Organic Chemistry ( 2 credit, 36 L)
	Practical	CH-403 : Chemistry Practical - IV ( 2 credit, 72 L)

#### **\*Important Notice:**

- Each lecture (L) will be of 50 minutes.
- Each practical of 4 hours and 12 practical sessions per semester
- 12 weeks for teaching 03 weeks for evaluation of students (theory as well as practical).
- For details refer UG rules and regulations (CBCS for Science program under Science & Technology) published on SPPU website.

#### **Evaluation Pattern (As per CBCS rules, SPPU 2019 Pattern)**

- Each theory and practical course carry 50 marks equivalent to 2 credits.
- Each course will be evaluated with Continuous Assessment (CA) and University Assessment (UA) mechanism.
- Continuous assessment shall be of 15 marks (30%) while university Evaluation shall be of 35 marks (70%).
- To pass each course, a student has to secure 40% mark in continuous assessment as well as university assessment i.e. 6 marks in continuous assessment and 14 marks in university assessment for the respective course.
- For Continuous Assessment (internal assessment) minimum two tests per paper must be organized, of which one must be written test of 10 marks.
- Method of assessment for internal exams: Viva-Voce, Project, survey, field visits, tutorials, assignments, group discussion, etc. (on approval of the head of centre).

## b. Course Syllabus

CBCS: 2019 Pattern

S. Y. B. Sc.

Chemistry

**CH-303: Practical Chemistry-III [2 credit, 72\* L]**

\* 72 L distributed as 58 L for performing practicals and 14 L for internal evaluation.

For practicals, see the manual prepared by BOS of Chemistry. The examination will be held according to this manual.

**Instructions**

1. Use molar concentrations for volumetric /estimations/synthesis experiments.
2. Use optimum concentrations and volumes
3. Two burette method should be used for volumetric analysis (Homogeneous mixtures)
4. Use of Microscale technique is recommended wherever possible

**A. Chemical Kinetics: (Any Three)**

1. To Study the Acid catalysed hydrolysis of an ester (methyl Acetate) and determine the rate constant (k). (first order reaction)
2. To study the kinetics of saponification reaction between sodium hydroxide and ethyl acetate.
3. To compare the relative strength of HCl and H<sub>2</sub>SO<sub>4</sub> or HNO<sub>3</sub> by studying the kinetics of hydrolysis of methyl acetate.
4. Energy of activation of the reaction between K<sub>2</sub>S<sub>2</sub>O<sub>8</sub> and KI with unequal initial concentration.

OR

4. To determine the order of the reaction with respect to K<sub>2</sub>S<sub>2</sub>O<sub>8</sub> by fractional life method following the kinetics of per sulphate-iodide reaction.

**References:**

- i) Systematic experimental physical chemistry, S. W. Rajbhoj, T. K. Chondekar, Anjali publication.
- ii) Practical Physical Chemistry, Vishwanathan and Raghwan , Viva book.
- iii) Practical Chemistry, O. P. Pandey, D. N. Bajpai Dr. S. Giri, S Chand Publication
- iv) Experiments in Chemistry, D. V. Jahagirdar, Himalaya Publication.

**B. Inorganic quantitative / qualitative analysis (Any two)**

1. Estimation of Fe(III) from given solution by converting it to Fe(II) using Zn metal and then by titrating with standard solution of K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>-A Green Approach (Ref.-1,3).

## CBCS: 2019 Pattern

## S. Y. B. Sc.

## Chemistry

3. Determination of Hardness of water from given sample by complexometric titration (Using E.D.T.A.) method and total dissolve solids by conductometry. Express your results as average  $\pm$  standard deviation. (*Standardization of Na<sub>2</sub>EDTA must be performed with standard Zn(II) solution*)

**Reference:**

1. Vogel's Textbook Quantitative Chemical Analysis, 3<sup>rd</sup> and 5<sup>th</sup> Ed.
2. Experiments in chemistry, D. V. Jahagirdar, Himalaya Publication.

**Examination Pattern:** At the time of examination student will have to perform one experiment. In case of organic qualitative analysis, after separation of binary mixture any one component has to be analysed according to OQA scheme. Distribution of 35 marks: 30 marks for experimental performance and 5 mark for oral.

To cope up with NACC criterion and to motivate and inculcate research culture among the students, interested students can be assigned mini-scale project. Project should be based either on applications of chemistry in day to day life or application or novel / applied synthesis / demonstrating principles of chemistry. The project work is equivalent to three experiments. *Student performing project can be exempted from 3 experiments from two semester. (\*from three different sections of two semester) and project will be evaluated by external examiner. Project being choice based activity; student will not get any exemption in external examination.* Systematic project report (Name page, certificate, introduction/theory, importance of project, learning outcome, requirements, safety precautions, procedure, observations, calculations, results and conclusions) be submitted separately in binding form duly certified by mentor teacher and HOD.

**Illustrative list of some projects is given below for your perusal.**

1. Synthesis of soap from different types of oils with respect to i) percent yield ii cost of obtaining 50 g soap (students will learn saponification or alkaline hydrolysis of oils – a chemical reaction for the synthesis of day to day life product, which oil is better for soap making).
2. Synthesis of biodegradable plastic (Principles demonstrated: Chemical reactions for mores safe products and to mitigate environmental pollution).
3. Synthesis of azo dyes and effect substituents of benzene ring on colour of azo dye (Principle demonstrated -Inductive effect a visible demonstration, strategy to change the colour of dye, chemical reactions for industries).

CBCS: 2019 Pattern	S. Y. B. Sc.	Chemistry
4. Quality of Consumer products: identification reactions and Purity of $\text{NaHCO}_3$ (eating soda) of different brands by thermal decomposition. (Application of analytical chemistry and simple decomposition reaction for the determination of purity of consumer product)		
5. Determination pH, surface tension, CMC and washing action of detergent of different brands for comparing their quality. (Application of chemistry principles in determination of quality of consumer product)		
6. Removal of dyes / nitrophenols / by Fenton's process or by adsorption on activated charcoal. (Applications of principles of chemistry in mitigation of environmental pollution, an industrial application of chemistry).		
7. Study of deionization water using cation and anion exchange resins / zeolites. Amount of zeolites / resin required for the softening of water. (Day to day life application of chemistry, student can apply their knowledge and can construct their own deionizer).		
8. Preparation shampoo. Ingredients required, their proportion, mixing and testing.		
9. Eudiometer: Determination of oxidation state, equivalent wt. and determine stoichiometry of the reaction between i) iron metal and HCl. Fe can have oxidation state +2 or +3. ii) Zn and HCl iii) Al and HCl. What happens with $\text{HNO}_3$ ? Why similar method cannot used to investigate reaction between $\text{HNO}_3$ and these metals?		
10. Study stoichiometry of simple chemical reactions thereby determination of equivalent wt. of one of the reactant: i) $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ and $\text{KMnO}_4$ (determine equivalent wt. of $\text{KMnO}_4$ ) ii) Mn(II) and $\text{KMnO}_4$ (determine equivalent wt. of $\text{KMnO}_4$ ). Explain the concept of variable oxidation state and variable equivalent wt. for same substance i.e. mol. wt. is constant. (Known $\text{Fe}^{2+}$ oxidizes to $\text{Fe}^{3+}$ only).		
11. Synthesis /isolation of essences, purity by TLC/ B.P. (at least two).		
12. Synthesis and estimation of purity of aspirin (medicinal compound) by green chemistry route.		
13. Compare the paracetamol content in tablet of different brands (at least three different brands).		
14. Compare the vitamin-c content in tablet of different brands. (at least three different brands).		
15. Determination of Avagadro Number (N) by various technics such as Brownian Moment, Electrodeposition, number of molecules in monolayer etc.		
16. Hess Law verification		
17 Determination of Faraday constant and Avagadro number		
18 To determine thermodynamic values of various compounds		

- 19 To determine density of various substances
- 20 Preparation of Nylon and study its properties
- 21 Microscale techniques in Chemistry

**References:**

1. A laboratory manual for general, organic and biological chemistry, 3<sup>rd</sup> Ed. Pearson.
2. Safety-Scale Laboratory Experiments for Chemistry for Today: General, Organic and Biochemistry Seventh Edition, Spencer L. Seager, Michael R. Slabaugh, Cengage Learning, 2010
3. Laboratory Manual for Principles of General Chemistry, Bearen, 8<sup>th</sup> Ed. Wiley.
4. Green Chemistry Laboratory Manual for General Chemistry, Sally A. Henrie, CRC Press Taylor & Francis Group, and Informa Business. 2015
5. Experiments in General Chemistry, G. S. Weiss T. G. Greco L. H. Rickard, Ninth Edition, Pearson Education Limited, 2014.
6. Mini-scale and micro-scale organic chemistry laboratory experiments 7<sup>th</sup> Ed. Schoffstall, Gaddis, Mc-Graw-Hill Higher Education, 2004.
7. Journal of Chemical Education, ACS, (search relevant topics).

**II. Students short activity (for both semesters)**

These are the extra-time activities for the students which can be performed with the permission of mentor. Mentor can arrange a demonstration on these activities to explain basic principles of chemistry. **Teacher can design many such activities to explain theory that you taught in the class.** Systematic report of activity performed be written in journal. Sample list of small activities is given below. These short activities can be considered for internal evaluation. Some activities are given below.

1. Amphoteric nature of  $\text{Al}(\text{OH})_3$  (Principle demonstrated-demonstration of amphoteric nature substance and why  $\text{Al}(\text{OH})_3$  is used in antacid preparations)
2. Enzyme deactivation by  $\text{Hg}^{2+}$  (Principle demonstrated-catalyst deactivation and toxicity effect of  $\text{Hg}^{2+}$ )
3. Adsorption of dyes on activated charcoal (Principle demonstrated and application- surface adsorption for removal of dyes from effluents)
4. Detection of adulteration in milk / chilli powder / turmeric power / food colours
5. Use of EXCEL in drawing of graphs and calculations.
6. Catalysis by  $\text{Mn}(\text{II})$  in  $\text{KMnO}_4$ -Oxalic acid titration. (Principle, demonstrated - Homogeneous catalysis)



# 18. B.Sc. Zoology

## a. Course Structure

CBCS: 2021-20222

T. Y. B. Sc.

Zoology



**Savitribai Phule Pune University**  
*(Formerly University of Pune)*

**Three Year B. Sc. Degree Program in Zoology**  
**(Faculty of Science & Technology)**

**T. Y. B. Sc. Zoology**

**Choice Based Credit System Syllabus**

**To be implemented from**  
**Academic Year 2021 - 2022**

**1. Course Structure:****Course Structure with Credit Distribution of the Undergraduate Science Program in Zoology**

Course	Course Code and Name of the Course		Credits
<b>F. Y. B. Sc.</b>	<b>SEMESTER I</b>		
CC	ZO-111 Animal Diversity I	ZO-121 Animal Diversity II	2+2
CC	ZO-112 Animal Ecology	ZO-122 Cell Biology	2+2
CC	ZO-113 Zoology Practical Paper	ZO-123 Zoology Practical Paper	1.5+1.5
<b>S. Y. B. Sc.</b>	<b>SEMESTER III</b>		
CC	ZO-231 Animal Diversity III	ZO-241 Animal Diversity IV	2+2
CC	ZO-232 Applied Zoology I	ZO-242 Applied Zoology II	2+2
CC	ZO-233 Zoology Practical Paper	ZO-243 Zoology Practical Paper	2+2
AECC	EVS 231-Environment Awareness	EVA 241-Environment Awareness	2+2
AECC	LA 231-English / Marathi	LA 241- English / Marathi	2+2
<b>T. Y. B. Sc.</b>	<b>SEMESTER V</b>		
DSEC	ZO-351 - Pest Management	ZO-361 - Medical & Forensic Zoology	2+2
DSEC	ZO-352 - Histology	ZO-362 - Animal Physiology	2+2
DSEC	ZO-353 - Biological Chemistry	ZO-363 - Molecular Biology	2+2
DSEC	ZO-354 - Genetics	ZO-364 - Entomology	2+2
DSEC	ZO-355 - Developmental Biology	ZO-365 - Techniques in Biology	2+2
DSEC	ZO-356 - Parasitology	ZO-366 - Evolutionary Biology	2+2
DSEC	ZO-357 - Zoology Practical Paper 1	ZO-367 - Zoology Practical Paper 1	2+2
DSEC	ZO-358 - Zoology Practical Paper 2	ZO-368 - Zoology Practical Paper 2	2+2
DSEC	ZO-359 - Zoology Practical Paper 3	ZO-369 - Zoology Practical Paper 3	2+2
SEC	ZO-3510 - Aquarium Management	ZO-3610 - Environmental Impact Assessment	2+2
SEC	ZO- 3511 - Poultry Management	ZO-3611 - Project	2+2

## b. Course Syllabus

CBCS: 2021-20222

T. Y. B. Sc.

Zoology

**Course Title: Project**

**Course Code: ZO 3611**

**Credits: 02**

### ZO 3611 - Project

Students have to complete the research project in the stipulated time and present the dissertation at the time of the examination in a proper format. Students should be encouraged to take up laboratory work, hands-on practical investigation and design experimental setup. Field work to be carried out under proper supervision and permissions from the concerned authorities.

Possible key aspects of the project work -

1. Planning the project
2. Selecting a suitable title
3. Significance of the work
4. Hypothesis, Objectives
5. Reviewing the available literature
6. Methodology to be used
7. Outcomes of the Project work
8. Conclusion and Discussion
9. Future plans

**Students should be made aware of plagiarism and research ethics.**

# 19. B.Sc. Computer Science

## a. Course Structure



## **Savitribai Phule Pune University**

(Formerly University of Pune)

Three Year B.Sc. Degree Program in Computer Science

(Faculty of Science & Technology)

## **T.Y.B.Sc. (Computer Science)**

Choice Based Credit System Syllabus

To be implemented from Academic Year 2021 – 2022

### Course Structure T.Y.B.Sc. (Computer Science)

#### Semester V (Total credits=22)

Course type	Paper Code	Paper title	Credits		Evaluation		
			T	P	CA	UA	TOTAL
DSEC - I	CS-351	Operating Systems – I	2		15	35	50
	CS-352	Computer Networks – II	2		15	35	50
	CS-357	Practical course based on CS 351		2	15	35	50
DSEC - II	CS-353	Web Technologies – I	2		15	35	50
	CS-354	Foundations of Data Science	2		15	35	50
	CS-358	Practical course based on CS 353 and CS 354		2	15	35	50
DSEC - III	CS-355	Object Oriented Programming using Java - I	2		15	35	50
	CS-356	Theoretical Computer Science	2		15	35	50
	CS-359	Practical Course based on CS 355		2	15	35	50
SECC - I	CS-3510	Python Programming	2	0	15	35	50
SECC - II	CS-3511	Blockchain Technology	2	0	15	35	50

#### Semester VI (Total credits=22)

Course type	Paper Code	Paper title	Credits		Evaluation		
			T	P	CA	UA	TOTAL
DSEC - I	CS-361	Operating Systems – II	2		15	35	50
	CS-362	Software Testing	2		15	35	50
	CS-367	Practical course based on CS 361		2	15	35	50
DSEC - II	CS-363	Web Technologies – II	2		15	35	50
	CS-364	Data Analytics	2		15	35	50
	CS-368	Practical course based on CS 363 and CS 364		2	15	35	50
DSEC - III	CS-365	Object Oriented Programming using Java - II	2		15	35	50
	CS-366	Compiler Construction	2		15	35	50
	CS-369	Practical Course based on CS 365		2	15	35	50
SECC - III	CS-3610	Software Testing Tools	2	0	15	35	50
SECC - IV	CS-3611	Project	2	0	15	35	50

## b. Course Syllabus

<b>Savitribai Phule Pune University</b> <b>T.Y.B.Sc. (Computer Science) - Sem - VI</b> <b>Course Type: SECC - IV      Course Code: CS - 3611</b> <b>Course Title : Project</b>		
Teaching Scheme 03 Lect/ week/Batch Batch Size : 20	No. of Credits 2	Examination Scheme IE : 15 marks UE: 35 marks
<p><b>Project Guidelines:</b></p> <ul style="list-style-type: none"> <li>• Students should work in a team of minimum 3 and maximum 4 students.</li> <li>• Students can choose a project topic and implement the same using any language/technology covered in the curriculum so far. The operating environment must be linux.</li> <li>• The student group will work independently throughout the project work including: problem identification, information searching, literature study, design and analysis, implementation, testing, and the final reporting.</li> <li>• Project guide must conduct project presentations (minimum 2) to monitor the progress of the project groups.</li> <li>• At the end of the project, the group should prepare a report which should conform to international academic standards. The report should follow the style in academic journals and books, with clear elements such as: abstract, background, aim, design and implementation, testing, conclusion and full references, Tables and figures should be numbered and referenced to in the report.</li> <li>• The final project presentation with demonstration (UE) will be evaluated by the project guide (appointed by the college) and one external examiner (appointed by the University).</li> </ul> <p><b>Recommended Documentation contents:</b></p> <p><b>Abstract</b></p> <p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>• motivation</li> <li>• problem statement</li> <li>• purpose/objective and goals</li> <li>• literature survey</li> <li>• project scope and limitations</li> </ul> <p><b>System analysis</b></p> <ul style="list-style-type: none"> <li>• Existing systems</li> <li>• scope and limitations of existing systems</li> <li>• project perspective, features</li> <li>• stakeholders</li> <li>• Requirement analysis - Functional requirements, performance requirements, security requirements etc.</li> </ul> <p><b>System Design</b></p> <ul style="list-style-type: none"> <li>• Design constraints</li> <li>• System Model: Using OOSE</li> <li>• Data Model</li> <li>• User interfaces</li> </ul> <p><b>Implementation details</b></p>		

- Software/hardware specifications

#### **Outputs and Reports Testing**

- Test Plan, Black Box Testing or Data Validation Test Cases, White Box Testing or Functional Validation Test cases and results

#### **Conclusion and Recommendations**

#### **Future Scope**

#### **Bibliography and References**

### **Project Related Assignments**

#### **Guidelines:**

- The project assignments are a compulsory part of the project course and should be carried out by each project group.
- Project assignments are to be given by the guide for continuous internal evaluation.
- The project assignments are to be allotted to each group separately by the project guide on the basis of the implementation technology. A suggested list of assignments is given below.
  1. Project Time management: plan (schedule table), Gantt chart, Roles and responsibilities, data collection, Implementation
  2. Simple assignments to evaluate choice of technology
  3. Assignments on UI elements in chosen technology
  4. Assignments on User interfaces in the project
  5. Assignments on event handling in chosen technology
  6. Assignments on Data handling in chosen technology
  7. Online and offline connectivity
  8. Report generation
  9. Deployment considerations
  10. Test cases
- Each student within the group must work actively and contribute to the assignments, project work and report writing.

#### **Evaluation guidelines:**

IA (15 marks)			UE (35 marks)		
First presentation	Second presentation	Assignments	Project Logic/ Presentation	Assignments and Project Documentation	Viva
05	05	05	20	10	05

## 20. B. Voc. RETM

### a. Course Structure

**Curriculum of Bachelor of Vocation (B. Voc.)**

**In**

**Renewable Energy Technology and Management**

**Designed by**

**Department of Skill Development**



**Ahmednagar Jilha Maratha Vidya Prasarak Samaj's**

**NEW ARTS, COMMERCE AND SCIENCE COLLEGE, PARNER**

**DIST. AHMEDNAGAR -414302**



Course Code	Course Title	Credit
<b>SEMESTER - I</b>		
	<b>Theory Component</b>	
RET-1-1	Introduction to Renewable Energy Sources	4
RET-1-2	Basics Electronics	4
RET-1-3	Basic Mechanical Engineering	4
	<b>Skill Component</b>	
REP-1-4	Practical – I (Based on Theory)	6
REP-1-5	Practical – II (On Job Training)	12
<b>SEMESTER - II</b>		
	<b>Theory Component</b>	
RET-2-1	Sustainable Development and Energy	4
RET-2-2	Applications of Solar Energy	4
RET-2-3	Bio-Energy	4
	<b>Skill Component</b>	
REP-2-4	Practical – III (Based on Theory)	6
REP-2-5	Practical – IV (On Job Training)	12
	<b>Total Credits</b>	<b>60</b>

Course Code	Course Title	Credit
<b>SEMESTER - III</b>		
	<b>Theory Component</b>	
RET-3-1	Soft Skills and Communications	4
RET-3-2	Rooftop and Wind Energy	4
RET-3-3	Solar Cell Technology & Its applications	4
	<b>Skill Component</b>	
REP-3-4	Practical – V (Based on Theory)	6
REP-3-5	Practical – VI (On Job Training )	12
<b>SEMESTER – IV</b>		
	<b>Theory Component</b>	
RET-4-1	Components of Photovoltaic Systems	4
RET-4-2	Solar Photovoltaic Systems: Design & Integration	4
RET-4-3	Solar Photovoltaic Systems: Installation & Maintenance	4
	<b>Skill Component</b>	
REP-4-4	Practical – VII (Based on Theory)	6
REP-4-5	Practical – VIII (On Job Training )	12
	<b>Total Credits</b>	<b>60</b>

Course Code	Course Title	Credit
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<b>SEMESTER – V</b>			
	<b>Theory Component</b>		
RET-5-1	Roof Top & Grid Connected PV System		4
RET-5-2	Net Metering Concept & Government Policies		4
RET-5-3	Introduction to PV Software's		4
	<b>Skill Component</b>		
REP-5-4	Practical – IX (Based on Theory)		6
REP-5-5	Practical – X( On Job Training )		12
<b>SEMESTER – VI</b>			
	<b>Theory Component</b>		
RET-6-1	Operation and Maintenance		4
RET-6-2	Feasibility Report		4
RET-6-3	Entrepreneurship Skills		4
	<b>Skill Component</b>		
REP-6-4	Practical – XI (Based on Theory)		6
REP-6-5	Practical – XII (On Job Training)		12
		<b>Total Credits</b>	<b>60</b>
<b>STRUCTURE FOR SEMESTER</b>			
<b>Title</b>	<b>Credits</b>	<b>Hrs</b>	<b>Marks</b>
Total No. of Theory courses = 3	12 (4 Credits each)	180	300
Total No. of Skill based courses = 3	18 (6 Credits each)	270	450
	<b>30</b>	<b>450</b>	<b>750</b>

<b>STRUCTURE FOR SEMESTER</b>			
<b>Title</b>	<b>Credits</b>	<b>Hrs</b>	<b>Marks</b>
Total No. of Theory courses = 3	12 (4 Credits each)	180	300
Total No. of Skill based courses = 3	18 (6 Credits each)	270	450
	30	450	750

## b. Course Syllabus

**Course Code: REP-5-4**

**Course Title: Practical – IX (Based on Theory)**

**(6 Credit)**

The user/ individual on the job need to know and understand.

**Unit I: Core/Generic Skills**

**(1 credits)**

Writing Skills: Prepare and maintain documentation

(Ref.: SA1)

Reading Skills: Health and safety instructions, Memos, other company documents, screens in machines and signage, Read various color codes, as per standard electrical, mechanical and civil nomenclature.

(Ref.: SA2 to SA5)

**Oral Communication**

**(1 credits)**

Express statements or information clearly so that others can hear and understand, Participate in and understand the main points of simple discussion, Respond appropriately to any queries Communicate with employees. (Ref.: SA6 to SA7)

**Unit II: Professional Skills**

**(1 credits)**

**Decision making:** Define organization rule- based decision making process, Take decision with systematic course of actions and/or response.

**Plan and organize:** Plan and organize work schedule to meet deadlines, Work constructively and collaboratively with others.

**Customer centricity:** Prepare organization code of conduct. Manage relationships with customers with intent on satisfying its requirements for service delivery.

**Problem solving:** Recognize problems and search for solutions, Choose best methods to complete assigned tasks

**Critical thinking:** Critically evaluate information obtained from customers and workers to perform day to day activities, any other questions for better understanding.

(Ref.: SB1 to SB11)

**Unit III:**

**(3 credits)**

Assignments and Practical's: To design small and large solar photovoltaic plants with the help of PVSYST and PVSOL software's.

## 21. B. Voc. RETM

### a. Course Structure

**Curriculum of Bachelor of Vocation (B. Voc.)**

**In**

**Renewable Energy Technology and Management**

**Designed by**

**Department of Skill Development**



**Ahmednagar Jilha Maratha Vidya Prasarak Samaj's**

**NEW ARTS, COMMERCE AND SCIENCE COLLEGE, PARNER**

**DIST. AHMEDNAGAR -414302**

Course Code	Course Title	Credit
<b>SEMESTER - I</b>		
	<b>Theory Component</b>	
RET-1-1	Introduction to Renewable Energy Sources	4
RET-1-2	Basics Electronics	4
RET-1-3	Basic Mechanical Engineering	4
	<b>Skill Component</b>	
REP-1-4	Practical – I (Based on Theory)	6
REP-1-5	Practical – II (On Job Training)	12
<b>SEMESTER - II</b>		
	<b>Theory Component</b>	
RET-2-1	Sustainable Development and Energy	4
RET-2-2	Applications of Solar Energy	4
RET-2-3	Bio-Energy	4
	<b>Skill Component</b>	
REP-2-4	Practical – III (Based on Theory)	6
REP-2-5	Practical – IV (On Job Training)	12
	<b>Total Credits</b>	<b>60</b>

Course Code	Course Title	Credit
<b>SEMESTER - III</b>		
	<b>Theory Component</b>	
RET-3-1	Soft Skills and Communications	4
RET-3-2	Rooftop and Wind Energy	4
RET-3-3	Solar Cell Technology & Its applications	4
	<b>Skill Component</b>	
REP-3-4	Practical – V (Based on Theory)	6
REP-3-5	Practical – VI (On Job Training )	12
<b>SEMESTER – IV</b>		
	<b>Theory Component</b>	
RET-4-1	Components of Photovoltaic Systems	4
RET-4-2	Solar Photovoltaic Systems: Design & Integration	4
RET-4-3	Solar Photovoltaic Systems: Installation & Maintenance	4
	<b>Skill Component</b>	
REP-4-4	Practical – VII (Based on Theory)	6
REP-4-5	Practical – VIII (On Job Training )	12
	<b>Total Credits</b>	<b>60</b>

Course Code	Course Title	Credit
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<b>SEMESTER – V</b>			
	<b>Theory Component</b>		
RET-5-1	Roof Top & Grid Connected PV System		4
RET-5-2	Net Metering Concept & Government Policies		4
RET-5-3	Introduction to PV Software's		4
	<b>Skill Component</b>		
REP-5-4	Practical – IX (Based on Theory)		6
REP-5-5	Practical – X( On Job Training )		12
<b>SEMESTER – VI</b>			
	<b>Theory Component</b>		
RET-6-1	Operation and Maintenance		4
RET-6-2	Feasibility Report		4
RET-6-3	Entrepreneurship Skills		4
	<b>Skill Component</b>		
REP-6-4	Practical – XI (Based on Theory)		6
REP-6-5	Practical – XII (On Job Training)		12
		<b>Total Credits</b>	<b>60</b>
<b>STRUCTURE FOR SEMESTER</b>			
<b>Title</b>	<b>Credits</b>	<b>Hrs</b>	<b>Marks</b>
Total No. of Theory courses = 3	12 (4 Credits each)	180	300
Total No. of Skill based courses = 3	18 (6 Credits each)	270	450
	<b>30</b>	<b>450</b>	<b>750</b>

<b>STRUCTURE FOR SEMESTER</b>			
<b>Title</b>	<b>Credits</b>	<b>Hrs</b>	<b>Marks</b>
Total No. of Theory courses = 3	12 (4 Credits each)	180	300
Total No. of Skill based courses = 3	18 (6 Credits each)	270	450
	30	450	750

**b. Course Syllabus**

**Course Code: REP-6-4**

**Course Title: Practical –XI (Based on Theory)**

**(6 credits)**

Assignments, Case Studies and Practical's on O & M, Feasibility Report of Solar photovoltaic Plants based on theory.

Students should follow the SPPU and Skill Council for Green Jobs (SCGJ) guidelines to earn credits in this subject.

## 22. M.A. Marathi

### a. Course Structure



सावित्रीबाई फुले पुणे विद्यापीठ, पुणे

M. A. भाग – १

मराठी विषयाचा पुनर्रचित अभ्यासक्रम- जून २०१९ पासून

**Choice Based Credit System [CBCS]**

निवड आधारित श्रेयांक पद्धत



**सावित्रीबाई फुले पुणे विद्यापीठ, पुणे**  
**मानवविज्ञान विद्याशाखा**  
**M. A. मराठी**

जून २०१९ पासून निवड आधारित श्रेयांक पद्धतीच्या (Choice Based Credit System) [CBCS] एम. ए. मराठी विषयाच्या पुनर्रचित अभ्यासक्रमाची रचना :

सत्र	Core Courses (CC) (मुख्य अभ्यासक्रम)	Credit (श्रेयांक)	Choice Based Optional Paper (निवड आधारित वैकल्पिक)	Credit (श्रेयांक)	Total Credit		
1	CC - 1	भाषाव्यवहार आणि भाषिक कौशल्ये - भाग १	4	CBOP - 4	ग्रामीण साहित्य	4	16
	CC - 2	मराठी साहित्याचा इतिहास (इ.स.१८१८ ते इ.स.१९२०)	4		मराठी वाङ्मयाची सांस्कृतिक पार्श्वभूमी ( प्रारंभ ते १८१८ )		
	CC - 3	ऐतिहासिक भाषाविज्ञान	4		तौलनिक साहित्याभ्यास - भाग १		
					वाङ्मयेतिहासलेखनविद्या - भाग १		
			मराठी व्याकरण - भाग १				
2	CC - 5	भाषाव्यवहार आणि भाषिक कौशल्ये - भाग २	4	CBOP - 8	दलित साहित्य	4	16
	CC - 6	मराठी साहित्याचा इतिहास (इ. स. १९२० ते इ. स. २०१०)	4		मराठी वाङ्मयाची सांस्कृतिक पार्श्वभूमी (इ.स. १८१८ ते १९६०)		
	CC - 7	समाजभाषाविज्ञान	4		तौलनिक साहित्याभ्यास भाग - २		
					वाङ्मयेतिहासलेखनविद्या - भाग २		
			मराठी व्याकरण - भाग २				
		<b>24</b>			<b>08</b>	<b>32</b>	

**b. Course Syllabus****दुसरे सत्र****विषयाचे नाव : भाषाव्यवहार आणि भाषिक कौशल्ये भाग-२ (CC-5)**

- घटक १.** भाषांतर व अनुवाद लेखन
- १.१ भाषांतराचे स्वरूप
  - १.२ भाषांतराची आवश्यकता व महत्त्व
  - १.३ भाषांतराचे विविध प्रकार
  - १.४ भाषांतर, अनुवाद, भावानुवाद आणि रूपांतर यातील साम्य-भेद
  - १.५ इंग्लिश उताऱ्याचे मराठीत भाषांतर करणे
  - १.६ हिंदी उताऱ्याचे मराठीत भाषांतर करणे.
- १५ तास १ श्रेयांक**
- घटक २** निवेदन कौशल्ये
- २.१ निवेदनाची आवश्यकता व स्वरूप
  - २.२ निवेदनाची तंत्रे, निवेदनाची शैली
  - २.३ विविध कार्यक्रमांचे नियोजन-आयोजन
  - २.४ विविध कार्यक्रमांचे निवेदन आणि सूत्रसंचालन ( सांस्कृतिक कार्यक्रम, जाहीर कार्यक्रम आकाशवाणी व दूरदर्शनवरील कार्यक्रम)
  - २.५ प्रभावी निवेदनाचे गुणविशेष
- १५ तास १ श्रेयांक**
- घटक ३** जनसंपर्क : संकल्पना व स्वरूप
- ३.१ जनसंपर्काचे स्वरूप व आवश्यकता
  - ३.२ जनसंपर्क कौशल्याची तंत्रे, जनसंपर्क कौशल्याची भाषा
  - ३.३ माहिती व जनसंपर्क अधिकारी
  - ३.४ शासन, विद्यापीठे, शैक्षणिक संस्था, बँका, कंपन्यांसाठी जनसंपर्काचे महत्त्व व आवश्यकता
- १५ तास १ श्रेयांक**

**घटक ४ प्रकल्पलेखन : स्वरूपचर्चा**

- ४.१ वाङ्मयीन प्रकल्पलेखनाचे स्वरूप
- ४.२ प्रकल्पलेखनातील घटक
- ४.३ प्रकल्पलेखनाची भाषा
- ४.४ प्रकल्पलेखनातील संदर्भ नोंदी
- ४.५ प्रत्यक्ष प्रकल्पलेखन (प्रकल्पलेखनास १० गुण असतील)
- ४.६ प्रकल्पलेखनासाठी काही विषयक्षेत्रे (नमुना सूची)

आकाशवाणीवरील प्रमुख कार्यक्रम, दूरचित्रवाणीचे सांस्कृतिक क्षेत्रातील कार्य.  
आकाशवाणी / दूरचित्रवाणी / नियतकालिकासाठी प्रत्यक्ष मुलाखत घेणे, शैक्षणिक सहल आयोजित करणे, प्रसारमाध्यमांचे कार्यालय, प्रकाशन संस्था यांना भेटी देणे, लेखनातील संगणकाचा वापर इत्यादी.

**१५ तास १ श्रेयांक****संदर्भ ग्रंथ**

- |  |  |
|--|--|
| १. व्यावहारिक मराठी                    | पुणे विद्यापीठ प्रकाशन                             |
| २. व्यावहारिक मराठी                    | डॉ.कल्याण काळे, डॉ.दत्तात्रय पुंडे                 |
| ३. व्यावहारिक मराठी                    | संपादक डॉ. स्नेहल तावरे                            |
| ४. व्यावहारिक मराठी                    | डॉ. लीला गोविलकर, डॉ.जयश्री पाटणकर                 |
| ५. व्यावहारिक मराठी                    | डॉ. सयाजीराजे मोकाशी, प्रा. रंजना नेमाडे,          |
| ६. व्यावहारिक मराठी                    | ल. रा. नसिराबादकर                                  |
| ७. व्यावहारिक मराठी विशेषांक           | नवभारत, ऑ.-सप्टेंबर १९८२, प्राज्ञ पाठशाळा, वाई     |
| ८. मराठी शुद्धलेखन प्रदीप              | मो.रा.वाळंबे, जुनी आवृत्ती, नितीन प्रकाशन, पुणे-३० |
| ९. मराठी शुद्धलेखन प्रदीप              | मो.रा.वाळंबे, संपा. अरुण फडके,पुणे-३०              |
| १०.मराठी लेखन मार्गदर्शिका             | राज्य मराठी विकास संस्था,यास्मिन शेख               |
| ११.मराठी शब्दलेखनकोश                   | यास्मिन शेख, हर्मीस प्रकाशन, पुणे.                 |
| १२.पॉप्युलर रीतिपुस्तक                 | रामदास भटकळ, मृदुला जोशी, पॉप्युलर प्रकाशन         |
| १३.शुद्धलेखन विवेक                     | डॉ. द.न.गोखले,सोहम प्रकाशन, पुणे-३०                |
| १४.भाषांतरमीमांसा                      | डॉ अंजली सोमण.डॉ ,कल्याण काळे .                    |
| १५.भाषांतर                             | सदा कऱ्हाडे, लोकवाङ्मयगृह, मुंबई.                  |
| १६.भाषांतर शास्त्र की कला              | म. वि. फाटक, रजनी ठकार, वरदा प्रकाशन               |
| १७.भाषांतर आणि भाषा                    | विलास सारंग, मौज प्रकाशन                           |
| १८.अनुवादमीमांसा                       | संपादक केशव तुपे, साक्षात, औरंगाबाद                |
| १९. मराठी भाषेची संवाद कौशल्ये         | य.च.म.मुक्त विद्यापीठ, नाशिक;पुस्तक क्र.१ते ८      |
| २०. प्रसार माध्यमांसाठी लेखनकौशल्ये    | य.च.म.मुक्त विद्यापीठ, नाशिक                       |
| २१. संपादन: स्वरूप व कौशल्ये )MCJ-305) | य.च.म.मुक्त विद्यापीठ, नाशिक                       |
| २२. प्रशासनिक मराठी भाषेचा विकास       | गीता भागवत,राज्य मराठी विकास संस्था,प्रशासन, मुंबई |
| २३. मुद्रित शोधन                       | वाय.ए.धायगुडे,दि.पूना प्रेस ओनर्स असोसिएशन         |
| २४. मराठी लेखनकोश                      | अरुण फडके,ढवळे प्रकाशन, मुंबई                      |

## 23. M.A. M.Sc. Geography

### a. Course structure

M.A./M. Sc. [II]

Geography



## **Savitribai Phule Pune University**

*(Formerly University of Pune)*

M.A./M.Sc.-II (Geography)

**Choice Based Credit System Syllabus**

**To be implemented from Academic Year 2020-2021**

**Savitribai Phule Pune University**  
Faculty of Science and Technology  
Geography MA/MSc – II  
Semester – III

Course Code	Core Compulsory Theory Paper (CCTP)	Choice Based Optional Paper (CBOP)	Theory / Practical	Credit	Core Compulsory Practical Paper (CCPP)	Credit
GGUT-235	Geoinformatics-II	-	-	04	-	04
GGUT-236	Geographical Thoughts	-	-	04	-	04
<b>One of the following according to specialization from CCTP</b>						
GGUT-237	Tropical Geomorphology	-	-	04	-	04
GGUT-238	Applied Climatology	-	-	04	-	
GGUT-239	Geography of Rural Development	-	-	04	-	
GGUT-240	Urban Geography	-	-	04	-	
<b>Choice Based Optional Paper (CBOP) ( 1 Theory + 1 Practical )</b>						
		GGDP-241	Practical in Geoinformatics	02	-	04
		GGUT-242	Hydrology	02	-	
		GGUT-243	Watershed Management	02	-	
		GGDP-244	Practical in Multivariate Statistics	02	-	
<b>One of the following according to specialization from CCPP</b>						
				GGUP-245	Practical in Geomorphology	04
				GGUP-246	Practical in Climatology	
				GGUP-247	Practical in Economic Geography	
				GGUP-248	Practical in Population and Settlement Geography	
<b>Total Credits of Semester - III</b>						<b>20</b>

M.A./M. Sc. [II]

Geography

**Savitribai Phule Pune University**  
**Faculty of Science and Technology**  
**Geography MA/MSc – II**  
**Semester - IV**

	<b>Core Compulsory Theory Paper (CCTP)</b>	<b>Choice Based Optional Paper (CBOP)</b>	<b>Theory / Practical</b>	<b>Credit</b>	<b>Core Compulsory Practical Paper (CCPP)</b>	<b>Credit</b>
GGUT-249	Geography of India	-	-	-	-	04
GGUT-250	Oceanography	-	-	-	-	04
GGUT-251	Research Methodology	-	-	-	-	04
<b>Choice Based Optional Paper (CBOP) ( 1Theory + 1Practical )</b>						
		GGUT-252	Geography of Soils	02		04
		GGDP-253	Practical in Geostatistics	02		
		GGUT-254	Political Geography	02		
		GGUT-255	Regional Planning	02		
		GGDP-256	Practical in Watershed Analysis	02		
		GGDP-257	Interpretation of Topographical Maps and GPS Survey	02		
<b>Core Compulsory Practical Paper (CCPP)</b>						
				GGUT-258	Geography of World	04
				GGUP-259	Dissertation/ Research Project	04
<b>Total Credits of Semester - IV</b>						<b>20</b>

## b. Course Syllabus

M.A./M. Sc. [II]

Geography

### SAVITRIBAI PHULE PUNE UNIVERSITY

Geography MA/MSc-II (Credit System)

Revised Syllabus (From June-2020)

**Course: GGUP – 259 Dissertations****No. of Credits: 04****Total Periods: 60**

- 1 The students shall declare the option of dissertation at the beginning of the 3<sup>rd</sup> semester.
- 2 A Post Graduate recognized teacher in the department is eligible to guide maximum two students per year.
- 3 **General Guide Lines :-**
  - i. Introduction to the problem
  - ii. Aims and objectives of the study
  - iii. Data and Methodology
  - iv. Analysis, description and interpretation
  - v. Results and Conclusions
  - vi. References/Bibliography  
(Fieldwork/data collection/field visits wherever necessary)
- 4 Every table, figure, photograph should have a caption and with references.
- 5 The list of references should be given at the end and all the references should be complete in all respects (author(s)) name, year, title of the article or book, name of the journal, name of the publisher of the book and place of publication, volume of journal and page numbers)
- 6 The minimum page limit for the dissertation is 50, including text, figures, tables, photographs, references, and appendices.
- 7 At the time of viva-voce, presentation must be given with the help of power point.

## 24. M.Com

### a. Course Syllabus

#### SPECIAL ELECTIVE SUBJECT - Group G (Advanced Banking & Finance)

Subject: Project Work / Case Studies

Course Code: 416

Total Credits: 04

The following are the topics suggested for Project Work:

1. A study of trends in mutual funds
2. Financial Inclusion & unskilled worker.
3. Rural Development & role of NABARD
4. A study of Bank portfolio
5. Banking Development Problems & Perspectives
6. Role of IT in Banking industry: constraints & challenges
7. A study of New Banking products
8. A study of Marketing of Banking products
9. A study of Companies (Amendment) Act 2013 with reference to Banking
10. Capital Adequacy Norms: constraints & challenges
11. Project Evaluation Tools & Techniques
12. Assessment of Financial Health through Ratio Analysis
13. Study of Bank Balance Sheet.
14. Study of Urban Co-Operative Bank.
15. Study of Non-Performing Assets.
16. Study of Capital adequacy of Public sector, Private sector and Co-Operative Banks.
17. Study of Foreign bank branch working in India.
18. Study of forex operation of Indian banks located in your city.
19. Study of National securities depository and Demat Account.
20. Study of Social banking (Prime Minister Rozgar Yojana, Suwarna Jayanti Sahara Rozgar Yojana, NAREGA, The Urban Self employment programe.)
21. Study of Self help group in Maharashtra.
22. Study of Recent Mergers and acquisition in banks.
23. Study of recent mergers of banks and its implication on bank employee.
24. Study of Foreign institutional investments.
25. Study of Recent reforms in capital market.
26. Study of R.B.I. recent monetary policy.
27. Study of Stock Exchange.



28. Study of Non-Banking Finance Companies.
29. Study of Role of N.G.O's.
30. Study of International Financial Institutions.
31. Study of International Investors.
32. Skill Development for unemployment Youth.
33. Study of Self Help Groups.
34. Study of investor's portfolio.
35. Study of investor's awareness and education by SEBI.
36. Study of role of SEBI.
37. Study of different schemes of mutual funds.
38. Study of companies deposits.
39. Study of GDR and ADR.
40. Study of FDI.

**Note:**

- Clarity with respect to any topic mentioned above be given by the concerned subject teacher / Guide.
- Student is required to choose one institution / scheme at a time.
- The topics mentioned are for guidelines and the concerned subject teachers have the privilege to choose and suggest any other topic other than the above

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## 25. M.Sc. Physics

### a. Course Structure

**Faculty of Science and Technology**

**M. Sc. (Physics)**

**Choice Based Credit System (CBCS)**

**To be implemented from Academic Year 2020-2021**

**Structure and Syllabus**

### Structure of M. Sc. Physics (Choice Based Credit System)

To be implemented from the Academic Year 2020-21

Subject Name	Year	Semester	Course Type	Course Code	Course Name	Credit		
Physics	1	I	Core Compulsory Theory Paper (CCTP)	PHCT-111	Mathematical Methods in Physics	4		
				PHCT-112	Classical Mechanics	4		
				PHCT-113	Electronics	4		
			Choice Based Optional Paper (CBOP-I)	PHOT-114	Choose any one from Group I	Theory	4	
				PHOP-114		Practical	0	
			<b>OR</b>					
			CBOP-I	PHOT-114	Choose any one from Group I	Theory	2	
				PHOP-114		Practical	2	
			Core Compulsory Practical Paper (CCPP)	PHCP-115	Physics Lab-I	4		
			II	CCTP	PHCT-121	Electrodynamics	4	
		PHCT-122			Atoms and Molecules	4		
		PHCT-123			Quantum Mechanics	4		
		CBOP-II		PHOT-124	Choose any one from Group I	Theory	4	
				PHOP-124		Practical	0	
		<b>OR</b>						
		CBOP-II		PHOT-124	Choose any one from Group I	Theory	2	
				PHOP-124		Practical	2	
		CCPP		PHCP-125	Physics Lab-II	4		

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Year	Semester	Course Type	Course Code	Course Name		Credit	
2	III	CCTP	PHCT-231	Statistical Mechanics		4	
			PHCT-232	Solid State Physics		4	
			PHCT-233	Experimental Techniques in Physics - I		4	
		CBOP-III	PHOT-234	Special-I from Group II	Theory		4
			PHOP-234		Practical		0
		<b>OR</b>					
		CBOP-III	PHOT-234	Special-I from Group II	Theory		2
			PHOP-234		Practical		2
		CCPP	PHCP-235	Physics Laboratory - III		4	
		IV	CCTP	PHCT-241	Nuclear Physics		4
	PHCT-242			Experimental Techniques in Physics-II		4	
	CBOP-IV		PHOT-243	Choose any one from Group I	Theory		4
			PHOP-243		Practical		0
	<b>OR</b>						
	CBOP-IV		PHOT-243	Choose any one from Group I	Theory		2
			PHOP-243		Practical		2
	CBOP-V		PHOT-244	Special-II from Group II	Theory		4
			PHOP-244		Practical		0
	<b>OR</b>						
	CBOP-V	PHOT-244	Special-II from Group II	Theory		2	
PHOP-244		Practical		2			
CCPC	PHCP-245	Project		4			
<b>Total credits of M. Sc. Physics course</b>						<b>80</b>	

# 26. M.Sc. Organic Chemistry

## a. Course Structure



## **Savitribai Phule Pune University**

(Formerly University of Pune)

### **Two Year Post-Graduate Program in Chemistry**

(Faculty of Science & Technology)

**Choice Based Credit System Syllabus (2019 Pattern)**  
of

### **M.Sc. (Chemistry) Part-II**

**Physical Chemistry, Inorganic Chemistry, Organic Chemistry  
Drug Chemistry and Analytical Chemistry**

for

**Colleges Affiliated to Savitribai Phule Pune University**

**Implemented from Academic Year  
2020-2021**

**Title of the Course: M.Sc. (Chemistry) (Part-II)****1. Structure of the Course:**

Basic structure/pattern (Framework) of the proposed postgraduate syllabus for the two years integrated course leading to M.Sc. (Chemistry) in the colleges affiliated to Savitribai Phule Pune University. The general structure for the M. Sc-II year Chemistry (all specializations) is as follows:

<b>Semester - III</b>			
<b>Sr. No.</b>	<b>Paper No</b>	<b>Description</b>	<b>Credit</b>
1	CCTP-7	Core Compulsory Theory Paper	4
2	CCTP-8	Core Compulsory Theory Paper	4
3	CCTP-9	Core Compulsory Theory Paper	4
4	CBOP-3	Choice Based Optional Paper - Theory	4
5	CCPP-3	Core Compulsory Practical Paper	4
<b>Semester-IV</b>			
6	CCTP-10	Core Compulsory Theory Paper	4
7	CCTP-11	Core Compulsory Theory Paper	4
8	CBOP-4	Choice Based Optional Paper - Theory	4
9	CBOP-5	Choice Based Optional Paper – Practical/ Project	4
10	CCPP-4	Core Compulsory Practical Paper	4

**Choice of the optional papers:** All colleges are encouraged to give the choice of optional papers to the students and conduct the separate classes if 40% or more students opt a different course than 60% or less students.

**The specializations are:**

1. Physical Chemistry
2. Inorganic Chemistry
3. Organic Chemistry
4. Drug Chemistry
5. Analytical Chemistry
6. Biochemistry

**2. Teaching Hours**

**a) Theory** – Each credit of theory is equivalent to 12 teaching hours + 3 tutorial hours. For 1 credit of theory there will be 1 L of 1 hour per week. Thus, 1 theory course will have total 15 weeks of teaching and it will be distributed as of 48 h for teaching and 12 h for tutorials and internal evaluation. In case of theory paper consisting of sections, each section is of 2 credits and time allotted will be 24 h teaching and 6 h for tutorials and internal evaluation.

**b) Practical** – Each credit of practical is equivalent to 24 teaching hours + 6 tutorial hours. For 1 credit of practical there will 2 L of 1 h per week. Thus, 1 practical course will have total 15 weeks of teaching and it will be distributed as of 96 h for performing practical and 24 h for tutorials and internal evaluation. i) Each experiment will be allotted 4 h time (one practical session) and for 1 course two sessions of 4 h per week should be allotted or ii) In case practical course is extended for one year, then total 30 weeks (15 week per sem.) and 4 h

## b. Course Syllabus

CBCS: 2019 Pattern	M. Sc-II	Chemistry
<b>CBOP-5, CHO-453: Practical-III: Select ANY TWO Section I, II and III [96 L + 24 T]</b>		
<b>Section-I: Ternary Mixture Separation [48 L + 12 T]</b>		
Separation of minimum 12 mixtures containing three components. The mixtures should also involve separation of nitrophenols, amino acids, low boiling and water soluble and insoluble compounds solids and liquids with <b>multifunctional groups</b> . The mixture separation should be carried out on micro-scale using ether or water.		
<b>The students should be able to</b>		
<ol style="list-style-type: none"> <li>1. Understand and employ concept of type determination and separation</li> <li>2. Meticulously record physical constants</li> <li>3. Perform micro scale chemical elemental analysis</li> <li>4. Perform qualitative estimation of functional groups</li> <li>5. Recrystallize /distill the separated compounds</li> <li>6. Extend these skills to organic synthesis</li> </ol>		
<b>Section-II: Carbohydrates Synthesis and Isolation Natural Products [48 L + 12 T]</b>		
<b>Unit I: Carbohydrate Synthesis (Any 3)</b>		
<ol style="list-style-type: none"> <li>1) Synthesis and structural determination of <math>\alpha</math>- and <math>\beta</math>-D-glucose penta- acetate.</li> <li>2) Selective deacylation of <math>\alpha</math>- and <math>\beta</math>-D-glucose penta-acetate.</li> <li>3) Benzoylation of D-glucose to D-glucose penta-benzoate.</li> <li>4) Selective debenzoylation of D-glucose penta-benzoate</li> <li>5) Synthesis 1,2:5,6-di-O-isopropylene-D-glucofuranose.</li> <li>6) Synthesis of 1,2: 5,6 – di-O-isopropylene-3-O-benzyl –D-glucofuranose.</li> </ol>		
<b>Note:</b>		
Carbohydrate (sugar molecules) are highly soluble in water, to derivatives the sugar molecules require special practical skill in order to get product in hand.		
<ol style="list-style-type: none"> <li>i) To understand the meaning of dry condition in reaction.</li> <li>ii) How to prepare dry solvents.</li> <li>iii) Workup of reaction in minimum quantity of water.</li> <li>iv) To acquire skill in handling of carbohydrates reaction.</li> </ol>		
<b>Unit II: Isolation of pigments from the natural products (Any 3)</b>		
<ol style="list-style-type: none"> <li>1. Orange Marigold</li> <li>2. Rose</li> <li>3. Sunflower</li> <li>4. Hibiscus</li> <li>5. Any colored flowers/fruits available in the local area (<b>only one is allowed</b>).</li> </ol>		
<b>Note:</b> Students should be able to collect reasonable quantities of color pigments to do the characterization (Physical Constant, Elemental analysis functional group test etc) and should also form the appropriate derivative. They are encouraged to use these pigments for developing food grade natural colors from lesser known plant sources.		
<b>Unit III: Isolation of essential oils from the natural products (Any 3)</b>		
<ol style="list-style-type: none"> <li>1. Ginger</li> <li>2. Lemongrass</li> <li>3. Garlic</li> <li>4. Ajwain/ajowan/Trachyspermum ammi</li> <li>5. Vekhand (achourus calamus) root</li> </ol>		

<p>6. Any natural products available in the local area (<b>only one is allowed</b>)</p> <p><b>Note:</b> Students should be able to collect a reasonable quantities of essential oils to do the characterization(Physical Constant, Density, Elemental analysis functional group test) Should form the appropriate derivative. They are encouraged to use these essential oils for the development of the products like soap, perfumes etc.</p> <p><b>Unit IV: Isolation of medicinally important component from the natural products (Any 3)</b></p> <ol style="list-style-type: none"> <li>1. Nimbin from Neem leave</li> <li>2. Amyrin from Apati/Apta bark</li> <li>3. Eujenol from Tulsi leaves</li> <li>4. D-Galacturonic Acid from Jeshtamadh</li> <li>5. Piper from Betel leaf</li> <li>6. Any medicinally important plants available in the local area (<b>only one is allowed</b>)</li> </ol> <p><b>At least one natural product should be isolated by using column chromatographic techniques (Use micro columns to avoid excess use of solvents)</b></p> <p><b>Note:</b> Students should be able to collect a reasonable quantities natural products to do the characterization (Physical Constant, solubility, Elemental analysis functional group test etc ) and should also form the appropriate derivative. They are encouraged to study novel medicinal plants from their local area.</p>
<p><b>References for Carbohydrates:</b></p> <ol style="list-style-type: none"> <li>1. Essentials of Carbohydrate and Chemistry and Biology: Thisbe K. Lindhorst, WILEY-VCH, 2000.</li> <li>2. Kawanata , K. P. R. Tetrahedron Lett. 1986, 27, 3415.</li> <li>3. Bessodes, M., Shamszar, J. Antonakies, K., Synthesis, 1988, 560.</li> </ol>
<p><b>Section-III: Project [48 L + 12 T]</b></p> <p><b>Project/ Industrial Training/Summer Training/ Internships</b></p> <ol style="list-style-type: none"> <li>1. Students should carry out a small research project.</li> <li>2. This should make them familiar with       <ol style="list-style-type: none"> <li>i. Literature survey, research methodologies</li> <li>ii. Data Analysis</li> <li>iii. Column and TLC chromatographic techniques</li> <li>iv. Characterization of the products by analytical and spectral methods.</li> </ol> </li> <li>3. <b>Project report must be written and submitted in a proper format as follows;</b> <ol style="list-style-type: none"> <li>i) Certificate (Signed by Project guide and Head of the Department)</li> <li>ii) Certificates for Poster/Paper presented in conferences (if any)</li> <li>iii) Self declaration certificate for plagiarism</li> <li>iv) Introduction ( not more than 6 pages)</li> <li>v) Results and Discussions</li> <li>vi) Experimental Section</li> <li>vii) Conclusion</li> <li>viii) References ( Use ACS format)</li> <li>ix) Spectroscopic or other relevant supporting data</li> <li>x) Acknowledgement</li> </ol> </li> <li>4. Interdisciplinary projects shall be encouraged; however there <b>must be some organic chemistry component</b>.</li> <li>5. Students should spend enough time for the project works ( <b>at least 4 hours per week for 15 weeks</b>)</li> <li>6. At least 30% students should undertake projects/summer training/Internships etc.</li> <li>7. If student is performing project in another institute, for such a student, internal mentor must be allotted and he will be responsible for internal assessment of a student. In this</li> </ol>



CBCS: 2019 Pattern

M. Sc-II

Chemistry

case student has to obtain certificate from both external and internal mentor. *Systematic record of attendance of project students must be maintained by a mentor.* Project will be evaluated jointly by three examiners and there will not be any practical performance during the examination. Typically, student has to present his practical work, discuss results and conclusions in details (20-30 min.) which will be followed by question-answer session (10 min). It is open type of examination.

# 27. M.Sc. Computer Science

## a. Course Structure

M. Sc. [I]

Computer Science



## **Savitribai Phule Pune University**

*(Formerly University of Pune)*

**Two Year Degree Program in Computer Science**

**(Faculty of Science & Technology)**

Revised Syllabi for

**M.Sc. (Computer Science) Part-I**

**(For Colleges Affiliated to Savitribai Phule Pune University)**

**Choice Based Credit System Syllabus**

**To be implemented from Academic Year 2019-2020**

**Course Structure:**

Year/ Sem	Course Type	Course Code	Course Name	Credit	% of Assessment		
					IA	UE	Total
I Year Sem-I	Core Compulsory Theory Paper	CSUT111	Paradigm of Programming Language	4	30	70	100
		CSUT112	Design and Analysis of Algorithms	4	30	70	100
		CSUT113	Database Technologies	4	30	70	100
	Choice Based Optional Paper	CSDT114A	Cloud computing	2	15	35	50
		CSDP114A	Cloud Computing Practical	2	15	35	50
		OR					
		CSDT114B	Artificial Intelligence	2	15	35	50
		CSDP114B	Artificial Intelligence Practical	2	15	35	50
		OR					
		CSDT114C	Web Services	2	15	35	50
		CSDP114C	Web Services Practical	2	15	35	50
Core Compulsory Practical Paper	CSUP115	PPL and Database Technologies Practical	4	30	70	100	

Year/ Sem	Course Type	Course Code	Course Name	Credit	% of Assessment		
					IA	UE	Total
I Year Sem-II	Core Compulsory Theory Paper	CSUT121	Advanced Operating System	4	30	70	100
		CSUT122	Mobile Technologies	4	30	70	100
		CSUT123	Software Project Management	4	30	70	100
	Choice Based Optional Paper	CSDT124A	Project	2	15	35	50
		CSDP124A	Project related Assignments	2	15	35	50
		OR					
		CSDT124B	Human Computer Interaction	2	15	35	50
		CSDP124B	Human Computer Interaction Practical	2	15	35	50
		OR					
		CSDT124C	Soft Computing	2	15	35	50
		CSDP124C	Soft Computing Practical	2	15	35	50
Core Compulsory Practical Paper	CSUP125	Practical on Advanced OS & Mobile Technologies	4	30	70	100	