PUNE DISTRICT EDUCATION ASSOCIATIONs

WAGHIRE COLLEGE OF ARTS, COMMERCE AND SCIENCE, SASWAD

COURSE OUTCOMES (COs) FOR UNDERGRADUATE COURSES

1) Program: B. A. (English)	
Course Code:-11011	**FYBA: Compulsory English Sem I**
CO1	To sensitize students about the literay and artistic relevence
CO2	To instill cross cutting issues among students as responsible citizens of the world
CO3	To develop the ability to appreciate ideas and think critically
CO4	To develop linguistic competence and communicative skills
Course Code:-11012	**FYBA: Compulsory English Sem II**
CO1	To aware students about the literay and artistic relevence
CO2	To instill cross cutting issues among students as responsible citizens of the world
CO3	To develop the ability to appreciate ideas and think critically
CO4	To develop linguistic competence and communicative skills

Course Code:- 11331	**F.Y. B.A.: Optional English General Paper I Sem I**
CO1	To develop communicative abilities among the students
CO2	To make students aware of the cultural values and the major problems in the world today
CO3	To sensitize the students about social, environmental and ethical values
CO4	To develop overall linguistic competence
Course Code:- 11332	**F.Y. B.A.: Optional English General Paper I Sem II**
CO1	To expose students to the basics of literature and language
CO2	To prepare students to go for detailed study and understanding of literature and language
CO3	To introduce the basic units of language so that they become aware of the technical aspects and their practical usage
CO4	To develop students' interest in reading literary pieces
Course Code:- 22011	**SYBA .: Compulsory English (Core Courese-CC) Sem III**
CO1	To sensitize students about the literay and artistic relevence
CO2	To instill universal human values through best pieces of literature in English
CO3	To develop the ability to appreciate ideas and think critically
CO4	To revise and reinforce the learning of some important areas of grammar for better linguistic competence

Course Code:- 22012	**SYBA .: Compulsory English (Core Courese-CC) Sem IV**
CO1	To sensitize students about the literay and artistic relevence
CO2	To instill universal human values through best pieces of literature in English
CO3	To develop the ability to appreciate ideas and think critically
CO4	To revise and reinforce the learning of some important areas of grammar for better linguistic competence
Course Code:- 22331	**SYBA .: Skill Enhancement Course-SEC-1A_ Sem III**
CO1	To familiarize students with the various components of language
CO2	To develop overall linguistic competence of the students
CO3	Ti introduce students to some advanced areas of language study
CO4	to prepare studetns to go for detailed study and understandig of language
Course Code:-22332	**SYBA .: Skill Enhancement Course-SEC-1A_ Sem IV**
CO1	To familiarize students with the various components of language
CO2	To develop overall linguistic competence of the students
CO3	Ti introduce students to some advanced areas of language study
CO4	to prepare studetns to go for detailed study and understandig of language
Course Code:-	**SYBA .: Discipline Specific Course (DSC-1A) Appreciating Drama Sem III**

CO1	To introduce Drama as a major form of literature
CO2	To acquaint and enlighten students regarding the literary and the performing
CO3	dimensions of drama
CO4	To acquaint and familiarize the students with the elements and the types of Drama
CO5	To encourage students to make a detailed study of a few sample masterpieces of English Drama from different parts of the world
CO6	To enhance students' awareness regarding aesthetics of Drama and to empower them to evaluate drama independently
Course Code:-	**SYBA .: Discipline Specific Course (DSC-1A) Appreciating Drama Sem IV**
CO1	To introduce Drama as a major form of literature
CO2	To acquaint and enlighten students regarding the literary and the performing
CO3	dimensions of drama
CO4	To acquaint and familiarize the students with the elements and the types of Drama
CO5	To encourage students to make a detailed study of a few sample masterpieces of English Drama from different parts of the world
CO6	To enhance students' awareness regarding aesthetics of Drama and to empower them to evaluate drama independently
Course Code:-	**SYBA .: Discipline Specific Course (DSC-2A) Appreciating Poetry Sem III**
CO1	To acquaint students with the terminology in poetry criticism

CO2	To encourage students to make a detailed study of a few sample masterpieces of English poetry
CO3	To enhance students awareness in the aesthetics of poetry and to empower them to read,appreciate and critically evaluate poetry independently
Course Code:-	**SYBA .: Discipline Specific Course (DSC-2A) Appreciating Poetry Sem IV**
CO1	To acquaint students with the terminology in poetry criticism
CO2	To encourage students to make a detailed study of a few sample masterpieces of English poetry
CO3	To enhance students awareness in the aesthetics of poetry and to empower them to read,appreciate and critically evaluate poetry independently
Course Code:	**SYBA .: Skill Enhancement Course-SEC-2A_ Sem III**
CO1	Enhancing the skill of using English for everyday communication
CO2	To acquaint the students with the verbal and nonverbal communication
CO3	To create opportunities to access exposure of speaking in various contexts
CO4	To acquaint and familiarize the students with soft skills
CO5	To develop interest among the students to interact in English
Course Code:-	**SYBA .: Skill Enhancement Course-SEC-2A_ Sem IV**
CO1	Enhancing the skill of using English for everyday communication
CO2	To acquaint the students with the verbal and nonverbal communication

CO3	To create opportunities to access exposure of speaking in various contexts
CO4	To acquaint and familiarize the students with soft skills
CO5	To develop interest among the students to interact in English
Course Code:- 32011	**TYBA .: Compulsory English (Core Courese-CC) Sem V**
CO1	To enable studetns to to become comepetent and Effective users of English
CO2	To instill humanitarian human values through best pieces of literature in English
CO3	To train the students inb practical writing skills
CO4	To revise and reinforce the learning of soft skills to enhance their employability
Course Code:- 32012	**TYBA .: Compulsory English (Core Courese-CC) Sem VI**
CO1	To enable studetns to to become comepetent and Effective users of English
CO2	To instill humanitarian human values through best pieces of literature in English
CO3	To train the students inb practical writing skills
CO4	To revise and reinforce the learning of soft skills to enhance their employability
Course Code:- 32331	**TYBA .: Skill Enhancement Course-SEC-1C_ Enhancing Employability Skills Sem V**
CO1	To familiarize students with the career oppotunities availble to them
CO2	To develop competence in using English language for the career of their choice

CO3	To introduce students to some advanced areas of language study
CO4	to prepare studetnsfor using vebal and nonverbal communication effectively
Course Code:-32332	**TYBA .: Skill Enhancement Course-SEC-1D_ Enhancing Employability Skills Sem VI**
CO1	To familiarize students with the career oppotunities availble to them
CO2	To develop competence in using English language for the career of their choice
CO3	To introduce students to some advanced areas of language study
CO4	to prepare studetnsfor using vebal and nonverbal communication effectively
Course Code:- 33331	**TYBA .: Discipline Specific Course (DSC-1C) Appreciating Novel Sem V**
CO1	To introduce novel as a major form of literature
CO2	To acquaint and enlighten students by exploring the history of the novel
CO3	To aware students about different types and aspects of the novel
CO4	To acquaint and familiarize the students with the elements and the types of Novel
CO5	To encourage students to make a detailed study of a few sample masterpieces of English novels from different parts of the world
CO6	To develop literary sensibility and sense of cultural diversity
Course Code:-34331	**TYBA .: Discipline Specific Course (DSC-1D) Appreciating Novel Sem VI**

CO1	To introduce the best examples from the novel with elements
CO2	To acquaint students the characterstics of the novel
CO3	To aware students about different types and aspects of the novel
CO4	To acquaint and familiarize the students with the elements of Novel through the prescribed novels
CO6	To develop literary sensibility and sense of cultural diversity through the prescribed novels
Course Code:- 33332	**TYBA .: Discipline Specific Course (DSC-2C) Introduction to Literary Criticism Sem V**
CO1	To acquaint students with the basics of literary criticism
CO2	To make them aware of the nature and the historical development of the Criticism
CO3	To enhance awareness about significant critical approches anmd critical terms
CO4	To develop aptitude for critical analysis
Course Code:-34332	**TYBA .: Discipline Specific Course (DSC-2D) Introduction to Literary Criticism Sem VI**
CO1	To acquaint students with the basics of literary criticism
CO2	To make them aware of the nature and the historical development of the Criticism
CO3	To enhance awareness about significant critical approches anmd critical terms
CO4	To develop aptitude for critical analysis
Course Code:33334	**TYBA .: Skill Enhancement Course-SEC-2C_ Mastering Life Skills and Life Values Sem V**

CO1	To equip the students with the social skills
CO2	To train the students interpersonal skills
CO3	To build self- confindence and communicate effectively
CO4	To learn stress management and positive thinking
CO5	To enhance ledearship qualities
Course Code:-34334	**TYBA .: Skill Enhancement Course-SEC-2D_ Mastering Life Skills and Life Values Sem VI**
CO1	To acquint the students with the Life skills and Life Values
CO2	To aware the students about the interpersonal skills
CO3	To instill self- confindence anmong them and communicative skills effectively
CO4	To learn transctional analysis and positive thinking
CO5	To enhance ledearship qualities and social skills
2) Program: B. A. (Marathi)	
Course Code:[CC-1A]	**FYBA - Name of Course/paper:मराठी साहित्य कथा भाषिक कौशल्य विकास**
CO1	कथा या साहित्यप्रकाराची ओळख करून देणे ,

CO2	कथा या साहित्यप्रकाराचे स्वरूप , घटक आणि प्रकार यांची ओळख करून देणे ,
CO3	विविध साहित्यप्रवाहांमधील कथा या साहित्यप्रकारातील निवडक कथांचे अध्ययन करणे .
CO4	भाषिक कौशल्यविकास करणे ,
Course Code:[CC-1 A]	**FYBA - Name of Course/paper मराठी साहित्य : एकांकिका आणि भाषिक कौशल्यविकास**
CO1	एकांकिका या साहित्यप्रकाराची ओळख करून देणे
CO2	एकांकिका या साहित्यप्रकाराचे स्वरूप , घटक आणि प्रकार यांची ओळख करून देणे
CO3	मराठी साहित्यातील निवडक एकांकिकांचे अध्ययन करणे .
CO4	भाषिक कौशल्यविकास करणे
Course Code: | CC -C (3)]	**SYBA Name of Course/paperभाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कादंबरी**
CO1	कादंबरी या साहित्यप्रकाराचे स्वरूप , घटक , प्रकार आणि वाटचाल समजून घेणे ,
CO2	नेमेलेल्या कादंबरीचे आकलन , आस्वाद आणि विश्लेषण करणे .
CO3	मराठी साहित्यातील विविध प्रवाह आणि प्रकार लक्षात घेणे.
CO4	भाषिक कौशल्यविकास करणे .
Course Code: -| CC - 1D (3) |	**SYBA Name of Course/paperभाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : ललितगद्य**
CO1	ललितगद्य या साहित्यप्रकाराचे स्वरूप , घटक , प्रकार आणि वाटचाल समजून घेणे ,
CO2	नेमलेल्या अभ्यासपुस्तकातील ललितगद्याचे आकलन , आस्वाद आणि विश्लेषण करणे . ३

CO3	मराठी साहित्यातील विविध प्रकार लक्षात घेणे.
CO4	भाषिक कोशल्यविकास करणे .
Course Code:| DSE 1 A (3)]	**आधुनिक मराठी साहित्य : प्रकाशवाटा**
CO1	आत्मचरित्र या साहित्यप्रकाराचे स्वरूप , संकल्पना समजावून घेणे .
CO2	आत्मचरित्र या साहित्यप्रकाराच्या प्रेरणा आणि वाटचाल यांची ओळख करून घेणे .
CO3	ललित गद्यातील अन्य साहित्यप्रकारांच्या तुलनेत आत्मचरित्राचे वेगळेपण समजावून घेणे .
CO4	नेमलेल्या या आत्मचरित्राचे आकलन , आस्वाद आणि विश्लेषण करणे .
Course Code:[DSE 2 A (3)]	**SYBA Name of Course/paper मध्ययुगीन मराठी साहित्य : निवडक मध्ययुगीन गद्य , पद्य**
CO1	मध्ययुगीन गद्य - पद्य साहित्यप्रकारांची ओळख करून घेणे .
CO2	
	नेमलेल्या अभ्यासपुस्तकातील मध्ययुगीन गद्य - पद्याचे आकलन , आस्वाद आणि विश्लेषण करणे .
Course Code:| DSE 1 B (3)]	**साहित्यविचार**
CO1	भारतीय आणि पाश्चात्य साहित्यविचाराच्या आधारे साहित्याची संकल्पना , स्वरूप आणि प्रयोजनविचार समजावून घेणे
CO2	साहित्याची निर्मितिप्रक्रिया समजावून घेणे .
CO3	साहित्याची भाषा आणि शैली विषयक विचार समजावून घेणे .

Course Code: [DSE 2 B (3) |	**SYBA Name of Course/paper साहित्य समीक्षा**
CO1	साहित्य समीक्षेची संकल्पना , स्वरूप यांचा परिचय करून घेणे ,
CO2	साहित्य आणि समीक्षा यांचे परस्पर संबंध समजावून घेणे व अभ्यासणे
CO3	साहित्यप्रकारानुसार समीक्षेचे स्वरूप समजावून घेणे व अभ्यासणे .
	ग्रंथ परिचय , परीक्षण व समीक्षण यातील फरक समजावून घेणे .
Course Code: - [CC - 1E (3)]	**TYBA Name of Course/paper भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : प्रवासवर्णन**
CO1	मुद्रित माध्यमासाठी लेखन कौशल्ये आत्मसात करणे.
CO2	प्रवासवर्णन या साहित्यप्रकाराचे स्वरूप, प्रेरणा, प्रयोजने, वैशिष्ट्ये आणि वाटचाल समजून घेणे.
CO3	नेमलेल्या प्रवासवर्णनाचे आकलन, आस्वाद आणि विश्लेषण करणे.
Course Code: - [CC - 1F (3)]	**TYBA Name of Course/paper नाव भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कविता**
CO1	मराठी साहित्य, भाषिक कौशल्यविकास आणि शासनव्यवहार यांची माहिती घेणे.
CO2	कविता या साहित्यप्रकाराचे स्वरूप, वाटचाल, प्रेरणा, प्रवृत्ती आणि वैशिष्ट्ये, समजून घेणे.
CO3	नेमलेल्या अभ्यासपुस्तकातील निवडक कवितांचे आकलन, आस्वाद आणि विश्लेषण करणे.
CO4	कविता या साहित्यप्रकारातील विविध आविष्कार व भाषा रूपांची अभ्यासपुस्तकातील कवितांच्या आधारे ओळख करून घेणे.
[DSE 1 C (3 + 1)]	TYBA Name of Course/paper मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : प्रारंभ ते इ.स.

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CO1	वाङ्मयेतिहास संकल्पना, स्वरूप, प्रेरण , प्रवृत्ती समजून घेणे.
CO2	मध्ययुगीन कालखंडाची सामाजिक, सांस्कृतिक पार्श्वभूमी समजून घेणे.
CO3	मराठी भाषा, साहित्याची कालखंडानुरूप इतिहास समजून घेणे.
[DSE 1 C (3 + 1)]	TYBA Name of Course/paper मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : इ.स.१६०१ ते इ.स.१८१७
CO1	वाङ्मयेतिहास संकल्पना, स्वरूप, प्रेरण , प्रवृत्ती समजून घेणे.
CO2	मध्ययुगीन कालखंडाची सामाजिक, सांस्कृतिक पार्श्वभूमी समजून घेणे.
CO3	मराठी भाषा, साहित्याची कालखंडानुरूप इतिहास समजून घेणे.
[DSE 2C (3)+1]	TYBA S4 Name of Course/paper वर्णनात्मक भाषाविज्ञान : भाग १
CO1	भाषा स्वरूप, वैशिष्ट्ये व कार्ये समजावून घेणे.
CO2	भाषा अभ्यासाची आवश्यकता स्पष्ट करणे.
CO3	भाषा अभ्यासाच्या शाखा आणि विविध पद्धतींचा थोडक्यात परिचय करून घेणे.
CO4	वागिन्द्रियाची रचना , कार्य आणि स्वननिर्मितीची प्रक्रिया समजावून घेणे.
CO	स्वनविज्ञान, स्वनिमविचार आणि मराठीची स्वनिमव्यवस्था समजावून घेणे.
[DSE 2D (3)+1]	**TYBA Name of Course/paper वर्णनात्मक भाषाविज्ञान : भाग २**

CO1	रूपविन्यास आणि मराठीची रूपव्यवस्था समजावून घेणे.
CO2	वाक्यविन्यास आणि वाक्यव्यवस्थेचा मराठी भाषेच्यासंदर्भात परिचय करून देणे.
CO3	अर्थविन्यास या संकल्पनेचा भाषावैज्ञानिक अंगाने परिचय करून देणे.

3) Program: B. A. (Hindi)

Course Code:- ---	**F.Y.B.A. : Paper Title वैकल्पिक हिंदी प्रश्नपत्र - 1A**
CO1	छात्रों को हिंदी काव्य साहित्य का परिचय देना।
CO2	हिंदी कहानी साहित्य से अवगत कराना।
CO3	हिंदी भाषा द्वारा संवाद कौशल विकसित करना।
CO4	अनुवाद संबंधी जानकारी देना।
Course Code:- ---	**F.Y.B.A. : Paper Title वैकल्पिक हिंदी प्रश्नपत्र - 1B**
CO1	छात्रों को हिंदी काव्य साहित्य का परिचय देना।
CO2	हिंदी कहानी साहित्य से अवगत कराना।
CO3	निबंध लेखन कौशल को विकसित करना।
CO4	छात्रों को विज्ञापन लेखन से अवगत कराना।
Course Code 2097	**S.Y.B.A. : Paper Title CC-1C (G-2) आधुनिक काव्य, कहानी तथा व्यावहारिक हिंदी**

CO1	छात्रों को काव्य साहित्य से अवगत कराना।
CO2	छात्रों को कहानी साहित्य से अवगत कराना।
CO3	संक्षेपण लेखन का प्रत्यक्ष बोध कराना।
CO4	हिंदी कारक व्यवस्था समझाना।
Course Code:	**S.Y.B.A. : Paper Title SEC-2A अनुवाद स्वरुप एवं व्यावहार**
CO1	अनुवाद कौशल से अवगत कराना।
CO2	अनुवाद का स्वरुप समझाना।
CO3	अनुवाद क्षेत्र से परिचय कराना।
CO4	प्रत्यक्ष अनुवाद कार्य कराना।
Course Code- 2098	**S.Y.B.A. : Paper Title DSE-1A (S-1) काव्यशास्त्र**
CO1	भारतीय काव्यशास्त्र का परिचय देना।
CO2	काव्य, परिभाषा, तत्व आदि अवगत कराना।
CO3	काव्य के तत्व, शब्द शक्तियों का परिचय देना।
CO4	रस का स्वरुप समझाना।
Course Code: 2099	**S.Y.B.A. : Paper Title DSE-2A (S-2) मध्ययुगीन काव्य तथा उपन्यास साहित्य**
CO1	कबीर के साहित्य से परिचित कराना।

CO2	मीराबाई के काव्य से अवगत कराना।
CO3	भारतीय उपन्यास की अवधारणा समझाना।
CO4	रहीम और बिहारी के काव्य का बोध कराना।
CO5	हिंदी नाटक और रंगमंच से अवगत कराना।
Course Code: 25091	**TYBA - DSE 1 C (S3) HINDI SAHITYA KA ITIHAS - Adi, Bhakti, Ritikal Tak (5TH SEMESTER)**
CO1	To orient students regarding Hindi Literary writing
CO2	To introduce to chronology and nomenclature of Hindi literature
CO3	To acquints about Hindi literary trends
CO4	To orient regarding Hindi Liteary gerne
Course Code: 26091	**TYBA - DSE 1 D (S3) HINDI SAHITYA KA ITIHAS- ADHUNIK KAL (6TH SEMESTER)**
CO1	To acquaint with the background of modern times
CO2	To introduce the features of poetry
CO3	To explain modern-day composers and creations in Hindi lietrature
CO4	To make aware of the origin and development of hindi prose
Course Code: 25092	**TYBA - DSE 2 C (S4) BHASHA VIDNYAN (5TH SEMESTER)**
CO1	To aware students about Linguistics in Hindi

CO2	To explain the scope of linguistics in Hindi Language
CO3	To Introduce the directions of the study of linguistics
CO4	To understand the Application and use of Linguistics
CO5	To explain the utility of linguistics in literary studies in Hindi
Course Code: 26092	**TYBA - DSE 2 D (S4) HINDI BHASHA AUR USAKA VIKAS (6TH SEMESTER)**
CO1	To aware students about Linguistics in Hindi
CO2	To explain the scope of linguistics in Hindi Language
CO3	To Introduce the directions of the study of linguistics
CO4	To understand the Application and use of Linguistics
CO5	To explain the utility of linguistics in literary studies in Hindi
Course Code: 25093	**TYBA - CC 1E (G-3) KATHETAR VIDHAYE (5TH SEMESTER)**
CO1	To introduce the Hindi memoirs
CO2	To introduce the sketch of Hindi literature
CO3	To develop an assessment approach in Literarture
CO4	To develop a meeting chronicle writing growth
CO5	To build dialogue writing skills vision in Hindi

Course Code: 26093	**TYBA - CC 1F (G-3) GAJAL VIDHA AUR PATRACHAR (6TH SEMESTER)**
CO1	Exposure to ghazal literature
CO2	To know the personality of the Ghazalkar
CO3	To develop an assessment approach
CO4	To train for Government letter writing
CO5	
Course Code: 25096	**TYBA - SEC 2 C - PATKATHA LELHAN (5TH SEMESTER)**
CO1	To acquint the Script Writing in Hindi
CO2	To aware for writing about dialogues
CO3	To familiarize with the story, screenplay and dialogue
Course Code: 26096	**TYBA - SEC 2 D - SAHITYA AUR FILMANTRAN (6TH SEMESTER)**
CO1	To orient the elements of Hindi Cinema
CO2	To introduce films based on Hindi Novels.
CO3	To acquint students about relation of cimena with hindi Literature

4) Program: B. A. (Economics)

Course Code:- ----------	**F.Y. B.A.SEM-I : G-1 Indian Economic Environment**
CO1	To explain the students with the background of the Indian Economy with focus on contemporary issues like economic environment.
CO2	To discuss Challenges of Indian Economy: Natural Resources, Energy Resources, Education, Health, Environment, etc.
CO3	To explain Recent Trends in Indian Agriculture: Cropping pattern, Technology, Crop Insurance, Water Management, AgriBusiness
CO4	To describe Liberalization, Privatization and Globalization (LPG) and Recent trends in Indian Industry- Indian Multinationals & NewPolicies
Course Code:- ----------	**F.Y. B.A.SEM-II : G-1 Indian Economic Environment**
CO1	To explain Service Sector in Indian Economy
CO2	To discuss Banking- Definition, Functions, Changing Structure of Banking in India
CO3	To discuss Recent Trends in Indian Banking Environmen
CO4	To identify Challenges of Indian Economy- Poverty, Employment, Inequality, Informal Sector
Course Code:- CC-1D	**S.Y.B.A.SEM-I : Financial System G2**
CO1	To explain Indian Financial System
CO2	To describe banking in india (Public Sector Banks, Private Sector Banks, Foreign Banks): Management, Organization and Functions.
CO3	To Classification of Financial Market.
CO4	To discuss Importance of Financial Institutions. Stock Markets: NSE and BSE: Meaning & Functions.

Course Code:- DSE-1A	**S.Y.B.A.SEM-I : Micro Economics S1**
CO1	To explain Importance of Micro economics
CO2	To explain Theory of Consumer Behavior
CO3	To use Theory of Demand
CO4	To discuss Supply and Production Analysis
Course Code:- DSE-1B	**S.Y.B.A.SEM-I : Macro Economics S2**
CO1	To explain Importance of Macro economics
CO2	To apply Concepts of National Income – GDP, GNP, NNP, PCI, Personal Income, Disposable Income
CO3	To explain Theory of Employment and Output
Course Code:- CC-1D	**S.Y.B.A.SEM-II : Financial System G2**
CO1	To apply Reserve Bank of India
CO2	To explain SEBI and IRDA: Role and Functions.
CO3	To explain International Financial Institution
CO4	To discuss Developments in Indian Financial Sector
Course Code:- DSE-1A	**S.Y.B.A.SEM-II: Micro Economics S1**
CO1	To discuss Cost Concepts : Fixed Costs, Variable Costs, Total Cost, Average Cost, Marginal Cost, Economic

	Cost and Accounting Cost, Opportunity Cost
CO2	To explain Meaning & Classifications of Market Structure
CO3	To apply Productivity Theory Of Distribution
CO4	To explain Welfare Economics and Thought of Amartya Sen on Welfare Economics
Course Code:- DSE-1B	**S.Y.B.A.SEM-II : Macro Economics S2**
CO1	To define Value of Money – Meaning, Quantity Theory of Money, Cash Balance Approach
CO2	To explain Meaning, Types, Causes – Demand Pull and Cost Push Inflation, Effects
CO3	To apply Business Cycles
CO4	To explain Macro economic Policies
Course Code:- G3	**T.Y.B.A. : Economic Development & Planning G3**
CO1	To define of Economic Development and Growth
CO2	To compare Theories of Economic Development
CO3	To describe Foreign Capital and Development
CO4	To summarize the Economic Planning- Economic, Social and Political
Course Code:- S3	**T.Y.B.A. : International Economics S3**
CO1	To describe Theories of International Trade

CO2	To explain Equilibrium and disequilibrium in balance of payments; causes and consequences
CO3	To discuss India's Foreign Trade and Policy
Course Code:- S4	**T.Y.B.A. : Public Finance S4**
CO1	To describe The role of Government in an economy
CO2	To identify Sources of Public Revenue
CO3	To identify Sources of internal and external Public Debt
CO4	To explain Centre-State Financial Relationship
5) Program: B. A. (Geography)	
Course Code:-Gg- 110 (A)	**F.Y. B.A: Paper Title 1 Semester I Gg- 110 (A) Physical Geography Geography DSE - 1**
CO1	To introduce the students to the basic concepts in Physical geography.
CO2	To introduce latest concept in Physical geography
CO3	To acquaint the students with the utility and application of Physical geography in different regions and environment.
CO4	To make the students aware about Earth system (Lithosphere, Atmosphere, Biosphere and Hydrosphere)

Course Code:-Gg- 110 (B)	**F.Y. B.A: Paper Title 2 Semester – II Gg- 110 (B) Human Geography Geography DSE - 2**
CO1	The geographical maturity of students in their current and future courses shall develop.
CO2	The student develops theoretical, applied and computational skills
Course Code**Gg: 210(A)**	**S.Y. B.A. : Paper Title Gg: 210(A)Environmental Geography I**
CO1	To create the awareness about dynamic environment among the student.
CO2	To acquaint the students with fundamental concepts of environment geography for development in different areas.
CO3	The students should be able to integrate various factors of Environment and dynamic aspect of Environmental geography.
CO4	To make aware the students about the problems of environment , their utilization and conservation in the view of sustainable development
Course Code:Gg.210 (B)	**S.Y. B.A.. : Paper Title Environment Geography- II**
CO1	To create awareness about dynamic environment among the students.
CO2	To acquaint students with the fundamental concepts of Environment Geography.
CO3	To acquaint students about the past, presents and future utility and potentials of natural resources.
CO4	To make aware students about the problems of environment, its utilization and conservation in the view of sustainable development.
Course Code- Gg.220 (A)	**S.Y. B.A. : Paper Title Geography of Maharashtra**
CO1	To acquaint students with Geography of our State.

CO2	To make students aware of the magnitude of problems and prospects in Maharashtra
CO3	To help students understand the inter relationship between the subject and the society.
CO4	To help students understand the recent trends in regional studies
Course Code- Gg.220 (B)	**S.Y. B.A. : Paper Title Geography of Maharashtra**
CO1	To make students aware about the Agriculture problems and prospects of Maharashtra.
CO2	To understand the population distribution and settlement pattern in Maharashtra.
CO3	To understand the concept of rural development
CO4	To understand the prospectus in Tourism activity in Maharashtra and the role of MTDC and Role of MIDC in industrial development in rural area of Maharashtra
Course Code- Gg. 201 (A)	**S.Y. B.A. : Paper Title Practical Geography-I(Scale and Map Projection)**
CO1	To introduce the basic concepts in Practical Geography
CO2	To enable students to use various Scales and Projection Techniques in Geography.
CO3	To acquaint students with the utility of various Projections in Geographical knowledge.
CO4	To explain the elementary and essential principles of practical work in Geography
Course Code- Gg. 201 (B**)**	**S.Y. B.A. : Paper Title Practical Geography-I(Cartographic Techniques, Surveying and Excursion)**

CO1	To introduce the students to the basic and contemporary concepts in Cartography.
CO2	To acquaint the students with the utility and applications of various Cartographic Techniques.
CO3	To introduce the latest concepts regarding the modern cartography in the field of Geography.
CO4	To explain the elementary and essential principles of practical work in Geography.
Course Code: CC1E	**TYBA- Name of Course/paper - Geography of Tourism- I**
CO1	To enhance knowledge of Tourism, through Geography.
CO2	To developed Tourism industry from the perspective of Geography.
CO3	Career opportunities in Tourism sector.
CO4	Role of Geography in overall development of Tourism sector.
CO5	To spread cultural heritage from one country to another country, through the medium of Tourism.
Course Code: DSE 1 C	**TYBA- Name of Course/paper - Geography of India –I**
CO1	To understand India's physical condition from Geographical perspective.
CO2	To understand India's river system and drainage pattern.
CO3	To understand the weather pattern of India.
CO4	To study various soil types and their textural pattern.
CO5	To study the administrative boundaries of India and its neighbouring countries.

Course Code: DSE 2 C	**TYBA- Name of Course/paper - Practical Geography – I**
CO1	To introduce the basic concepts and techniques of Geographical Analysis.
CO2	To introduce the students with SOI Toposheets and acquire the Knowledge of Toposheet interpretation.
CO3	To introduce the students with Aerial Photographs and Satellite Images and acquire knowledge to interpret it .
CO4	To acquaint students with the spatial and structural characteristics of Practical Geography.
CO5	To explain the elementary and essential principles on field of practical work.
Course Code: SEC 2C	**TYBA- Name of Course/paper - Research Methodology – I**
CO1	To develop the understanding of the basic concept of research
CO2	To develop the understanding of the basic framework of sampling and data collection
CO3	To develop the understanding of various sampling methods and techniques
CO4	To develop technique of research design.
CO5	To understand the research problem.
Course Code: CC1F	**TYBA- Name of Course/paper - Geography of Tourism - II**
CO1	To understand the history of Tourism.
CO2	To introduce the students to the basic concepts in Tourism Geography.
CO3	To understand the types of Tourism.

CO4	To gain knowledge different aspects of Tourism Geography.
CO5	To understand economic impact of tourism.
Course Code: DSE 1D	**TYBA- Name of Course/paper - Geography of India - II**
CO1	To acquaint the students with geography of our Nation.
CO2	To make the student aware of the magnitude of problems and Prospects at National level.
CO3	To help the students to understand the inter relationship between the subject and the society.
CO4	To help the students to understand the recent trends in regional studied.
CO5	To understand the Agricultural scenairo of India and it importance.
Course Code: DSE 2D	**TYBA- Name of Course/paper - Practical Geography – II (Techniques of Spatial Analysis, Surveying and Excursion / Village / Project Report**
CO1	To study the types of Geographical Data : Spatial and Temporal.
CO2	To study the calculation techniques for Central tendency and Dispersion. (Mean, Mode & Median)
CO3	To understand the technique for testing the Application of Hypothesis.
CO4	To study the Parametric & Non parametric tests: i) Chi-square test, Spearman Rank order.
CO5	Field Excursion/ Village Survey/Project Report.
Course Code: SEC 2 D	**TYBA- Name of Course/paper - Research Methodology – II**
CO1	To identify various sources of information for data collection.

CO2	Understanding of the conducting survey on various issues and develop the Report writing skill of students.
6) Program: B. A. (Politics)	
Course Code: -11162	**FYBA/- Name of Course/paper: _Introduction to indian Constitution G-1(sem-I & II)**
CO1	• Students are aware about their Rights.
CO2	• Students are aware about importance of voting
CO3	• Students are having ability to analyses the election result as well as survey.
CO4	• Students are interpreted the political events
CO5	• Students have skill to face Competitive exams.
	Sem-II
CO1	Students aware about history of Constitution of India
CO2	Importants of Constitution
CO3	Importants of Fundamental Rights ,
CO4	Fetures of Constitution of India
CO5	Importans of Parliamentri System

Course Code: -22999	**F.T.B.A(Extra Credit Course)Name of Course/paper: Democracy,Election and Governance Sem-II**
CO1	Importants of Democracy
CO2	Fetures of Democracy of India
CO3	Importants of Election
CO4	Fetures of Election of India
CO5	Fetures of Government of India ,Good Governance,E Governance
Course Code: -23161	**SYBA- Name of Course/paper Western Political Thoughts Semester III DSE-1A (3)**
CO1	Major traditions of thought that have shaped political discourse in different parts of the world.
CO2	The great diversity of social contexts and philosophical visions.
CO3	The history of political thought as a series of critical, interconnected and open-ended conversations about the ends and means of the good life.
CO4	Importants of Western Thoughts
Course Code: -23161	**SYBA- Name of Course/paper Western Political Thoughts Semester III DSE-1B (3)**
CO1	To introduce the students to the Thoughtsof Political Thinkers
CO2	Fetures of western political Thoughts
CO3	Contribution of Western Political Thinkers

Course Code: 23162-	**SYBA Name of Paper Political journalism_Semester III DSE-2A (3)**
CO1	To introduce Political Journalism
CO2	Students understand the agencies of political jouranalism
CO3	To introduce different methods of political journalism
CO4	students aware about history of political journalism
CO5	To introduce students about important of journalism
Course Code: 23162--	**SYBA Name of Paper Political journalism_Semester IV DSE-2B (3)**
CO1	Complex relationship between the communication, media and power politics.
CO2	Critical appraisal of practices of political image management, campaigns, propaganda and censorship.
CO3	Indian context of political Journalism
Course Code: -23164	**SYBA- Name of Course/paper Semester III CC-1 C (3) AN INTRODUCTION TO POLITICAL IDEOLOGIES**
CO1	To introduce the students to the structure of Political Ideologies
CO2	to inculcate human values and social awareness.
CO3	Students are aware about western Ideologies.
CO4	Students are aware about importance of Gandhisim

CO5	To introduce students feminism and Marxism.
Course Code: -23164	**SYBA- Name of Course/paper Semester IVCC-1 D (3) AN INTRODUCTION TO POLITICAL IDEOLOGIES**
CO1	Role of different political ideologies and their impact in politics
CO2	Close link between an idea and its actual realization in public policy
CO3	Legacy of all the major ideologies
Course Code: -23165	**SKILL ENHANCEMENT COURSE (SEC)(Value / Skill Based Course Semester III SEC 2A (2) BASICS OF INDIAN CONSTITUTION**
CO1	1. To acquaint students with the important features of the Constitution of India and with the basic framework of Indian government.
CO2	To familiarize students with the working of the Constitution of India.
Course Code: -23165	**SKILL ENHANCEMENT COURSE (SEC)(Value / Skill Based Course Semester IV SEC 2B (2) BASICS OF INDIAN CONSTITUTION**
CO1	Objectives: This paper focuses in detail on the political processes and the actual functioning of the political system.
CO2	It emphasizes on local influences that derive from social stratification of castes and jatis, from language, religion, ethic and economic determinants and critically assesses its impact on the political processes.
Course Code:	**TYBA - Name of Course/paper Semester V DSE 1 C (3)+1 Public Administration**
CO1	To introduce the students to the structure of Public Administration.
CO2	To Make Students aware of the various local Leadership in Development.

CO3	To identity the role of local Government.
CO4	To introduce the students to the structure of Good Governace.
CO5	To introduce the students to the structure of New Public Administration.
	Semester VI DSE 1 D (3)+1 Public Administration
CO1	This paper is an introductory course in Public Administration.
CO2	
CO3	The importance of legislative and judicial control over administration is also highlighted
CO4	
Course Code:	**TYBA/ Name of Course/paper Semester V DSE 2 C (3)+1 INTERNATIONAL RELATIONS**
CO1	To introduce the students to the structure of Intrnational Politics.
CO2	To Make Students aware of the various of Approaches to the study of International Relation.
CO3	To introduce the students Theories of Idealism and Realism.
CO4	Students majoring in Political Science or International Politics.
CO5	Know how laws are made, policies are developed, programs implemented.
Course Code:	**TYBA/ Name of Course/paper Semester VI DSE 2 D (3)+1 INTERNATIONAL RELATIONS**

CO1	This paper deals with concepts and dimensions of International Relations and makes an analysis of different theories highlighting the major debates and differences within the different theoretical paradigms. The dominant theories of power and the question of equity
CO2	The dominant theories of power and the question of equity and justice, the different aspects of balance of power leading to the present situation of a and justice, unipolar world are included. It's highlights various aspects of conflict .
Course Code: -	**TYBA/ Name of Course/paper Semester V CC-1 E (3) LOCAL SELF GOVERNMENT IN MAHARASHTRA**
CO1	To introduce the students to the structure of Maharashtra Government,
CO2	to inculcate human values and social awareness & Political Awareness
CO3	Students are aware about Election Of Local Self Government
CO4	Students are aware about importance of 73 &74 Amendment.
CO5	To introducing Students to Local Politics,& Women Politics.
Course Code:	**TYBA/ Name of Course/paper Semester VI CC-2 E (3) LOCAL SELF GOVERNMENT IN MAHARASHTRA**
CO1	To introduce the evolution of Local Self Government in Maharashtra
CO2	To make students aware about 73rd and 74th Constitutional Amendments
CO3	To make students aware about composition, power and functions of local bodies
CO4	To make students aware about 73rd and 74th Constitutional Amendments
Course Code:	**SKILL ENHANCEMENT COURSE (SEC)** **(Value / Skill Based Course) Semester V SEC 2C (2)**

	SAMYUKTA MAHARASHTRA MOVEMENT
CO1	This Course is an introduction to the political process in Maharashtra with special reference to regionalism sub-regionalism and Samyukta Maharashtra Movement
CO2	The aim of the course is that students are expected to understand both the historical evolution of Maharashtra's politics and different analyses of politics of the state.
Course Code:	**SKILL ENHANCEMENT COURSE (SEC)** **(Value / Skill Based Course) Semester VISEC 2D(2)** **SAMYUKTA MAHARASHTRA MOVEMENT**
CO1	It tries to acquiant students with the main issues and concerns in the public life of a regional society as it shaped in the concept of colonialism, nationalism and modernity
CO2	Indian National Congress and Regionalism
7) Program: B. A. (Psychology)	
Course Code:- 11221	**F.Y. B.A. Course DSC-PSY- 1A: Foundations of Psychology**
CO1	Understand the basic psychological processes and their applications in day to day life.
CO2	Develop the ability to evaluate cognitive processes, learning and memory of an individual.
CO3	Understand the importance of motivation and emotion of the individual.
CO4	Understand the personality and intelligence of the individuals by developing their psychological processes and abstract potentials.
Course Code:- 11222	**F.Y.B.A.Course DSC-PSY- 1B : Introduction to Social Psychology**
CO1	Understand the basics of social psychology.

CO2	Understand the nature of self, concept of attitude and prejudice of the individual.
CO3	Assess the interactional processes, love and aggression in our day today life.
CO4	Understand group dynamics and individual in the social world.
Course Code:- 2228	**SYBA- Name of Course/paper : Abnormal Psychology**
CO1	Students should define the recent mental disorder and should get clear idea about various types of mental illness
CO2	Students should understand types the DSM V base classification of mental disorders.
CO3	Students should know what mental illness; criteria's of abnormal behaviour is and understand causes of mental illness.
CO4	Students should understand the various symptoms of psychological disorder.
Course Code:- 2229	**SYBA Name of Course/paper : Development Psychology**
CO1	Students should know the basic concepts of human development processes.
CO2	Students should understand various factors that influencing on development, also understood the various stages of developments.
CO3	Students should know the different theories of development and also understood the various perspectives of developments.
CO4	Students should understand the developments process of human and hereditary and environmental factor involve in developments.
Course Code 2227	**SYBA Name of Course/paper : Social Psychology**
CO1	Students should define and understand the field of social psychology, they should know history of social psychology.

CO2	Students should understand what is a self? And concepts related to self. Also they understand what is Gender, Gender role development? And Gender difference in self- esteem.
CO3	Students should know and understand behaviour in groups and social influence.
CO4	Students should understand what is a Attitude and Prejudice? Its definition, nature characteristics, types. They should understand relationship between Prejudice, discrimination and exclusions.
Course Code: DSE 1C (3) + (1)	**TYBA- Name of Course/paper : Testing Project Psychology Testing (Testing)**
CO1	Students should know the basic concepts of Psychology test, reliability, validity and norms.
CO2	Students should able to classify and categorize Psycholological tests, reliability- validity and norms types.
CO3	Students should identify the realiability and validity of Psychological tests.
CO4	Students should evaluate the types of norms.
CO5	Students should able to conduct tesing project for behaviour analysis.
Course Code: DSE 1D (3) + (1)	**TYBA- Name of Course/paper : Research Project Exprimental Psychology (Theory)**
CO1	Students should know the basic concepts of experimental psychology and research methodology.
CO2	Students should develop the skill scientific inquiry, and also develop some basic skill require to do research project.
CO3	Students should understand how to generate ideas for research, as well as develop hypotheses and operational definitions for variables.
CO4	Students should understand the basic steps in scientific research, and also know the process of scientific research.
Course Code- 3227	**TYBA- Name of Course/paper : Industrial And Organizational Psychology**

CO1	Students should define Nature and Scope of industrial psychology. They should understand history, present and future of I/O Psychology.
CO2	Students should understand personnel selection and training. Also they should know Recruitment Techniques and Assessment Techniques, Psychological principles in training and training for knowledge skill. They should know evaluation of training program.
CO3	Students should know and understand uses of performance evaluation. They should understand different sources of evaluation. Also they should understand Appraisal Rating Scale and Non-rating evaluation methods, 360 degree evaluation.
CO4	Students should understand how motivation works at workplace? They should know different motivation theories like Need theory, Cognitive theory. They should understand Seven Steps Process of self-discipline.
Course Code: 3229	**TYBA- Name of Course/paper : Pychology Practicals: Tests And Experiments**
CO1	Students should understood the elementary statistical techniques such as mean, median, mode, Standard deviation, Q, Q3, Q1, Rank different correlation.
CO2	Students should acquire the skill of administering and scoring psychological tests.
CO3	Students should acquire the skill of interpreting the scores of psychological tests.
CO4	Students should able to conduct psychological experiments by following basic experimental procedure.
CO5	Students should do a small-scale research project.
CO6	Students should learn practical application of psychological knowledge through study tour and visit.
CO7	Students should know the basic statistical concepts
CO8	Students should learn skill to solving simple statistical problems.
Course Code SEC 1 D (3):	**Applied Psychology**

CO1	Students should be able to describe the concept of applied psychology educational psychology family structure and developmental patterns.
CO2	student should know the Clinical Psychology related mechanism social issues and criminal behaviour.
CO3	student should able to classify the intellectual ability abnormality and criminal behaviour.
CO4	students should able to identify the problem and solution in the field of education.
CO5	Students should able to evaluate the interpersonal relations.
CO6	students should able to apply psychological remedies to assess the abnormal behaviour to tackle the social issues and to rectify the problematic behaviour.
Course Code: SEC DSE 1 D (3):	**Experimental psychology(Theory) + (1) Research project**
CO1	student should be able to describe the process of experiment in psychology concept of psychophysics.
CO2	students should be able to explain problem hypothesis variable sampling in experiment.
CO3	students should be able to identify and classify the learning system method of psychophysics.
CO4	students should be able to compare law of psychophysics type of hypothesis.
CO5	Students should able to conduct research based project
Course Code: DSE 2 D (3):	**Psychological experiment + 1 statistics**
CO1	students should be able to explain psychophysics, various cognitive processes of human being.
CO2	students should be able to classify and compare psychological experiment.

CO3	students should able to conduct laboratory experiment.
CO4	students should be able to analyse statistical base of human behaviour.
Course Code: SEC 2 C (2) (value / skill based courses) :	**Personality development-1**
CO1	Students should be able to describe the concept of personality.
CO2	student should be able to identify and classify the various personality traits.
CO3	students should be able to correlate real-life behaviour pattern with the theoretical assumptions.
CO4	students should able to apply psychological skill in daily life situation.
Course Code SED D (2) (value/ skill based courses):	**Personality Development-2**
CO1	student should be able to describe the concept of self esteem in personality development.
CO2	students should be able to identify and classify behavioral assessment techniques.
CO3	students should be able to integrate personality of individuals.
CO4	student should be able to apply psychological skill to develop own personality.
8) Program: B. Com.	

Course Code:117	**FYBcom/ Name of Course/paper भाषा साहित्य कौशल्य विकास SEM I&II**
CO1	विविध क्षेत्रातील भाषा व्यवहाराचे स्वरूप व गरज समजावून देणे.
CO2	व्यवहार क्षेत्रातील मराठी भाषेचे स्थान स्पष्ट करणे व त्यातील मराठीच्या प्रत्यक्ष वापराचा अभ्यास करणे.
CO3	विविध क्षेत्रीय मराठी भाषेच्या वापराची कौशल्ये विकसित करणे.
CO4	.विविध लेखनप्रकारांचा अभ्यास व प्रत्यक्ष लेखनाची कौशल्ये वापरण्यास सक्षम करणे.
CO5	.विद्यार्थ्यांमध्ये नैतिक , व्यावसायिक व वैचारिक मूल्यांची जोपासना करणे.
Course Code:111	**FYBCom: Compulsory English Sem I**
CO1	To expose students to native cultural experiences and situations so that they understand theimportance and utility of English language
CO2	To develop overall linguistic competence and communicative skills among the students
CO3	To develop overall linguistic competence and communicative skills among the students
CO4	To expose students to a good blend of old and new literary extracts having various themes
Course Code:-112	**FYBCom: Compulsory English Sem II**
CO1	To make students aware of the cultural values and the major problems in the world today
CO2	To develop competence among the students for self-learning

CO3	To develop students' interest in reading literary pieces
CO4	To familiarize students with excellent pieces of prose and poetry in English
Course Code:-127	**FYBCom: Additional English Sem I**
CO1	To introduce students to some advanced areas of language study
CO2	To expose students to some of the best samples of Indian English Poetry
CO3	To make them understand creative uses of language in Indian English
CO4	To introduce students to some advanced areas of language study
Course Code:-127 A	**FYBCom: Additional English Sem II**
CO1	To introduce the basics of short story, one of the literary forms and language
CO2	To expose students to the elements of poetry
CO3	To introduce some advanced units of language so that they become aware of the technical aspects and their practical usage
CO4	To inculcate a sense of cultural diversity through language and literature
Course Code----------	**F.Y.B.COM. : Paper Title वैकल्पिक हिंदी प्रश्नपत्र 1B**
CO1	छात्रों को हिंदी काव्य साहित्य का परिचय देना।
CO2	हिंदी कहानी साहित्य से अवगत कराना।

CO3	हिंदी भाषा द्वारा संवाद कौशल विकसित करना।
CO4	पारिभाषिक शब्दावली से अवगत कराना।
Course Code:- ----------	**F.Y.B.COM. : Paper Title वैकल्पिक हिंदी प्रश्नपत्र 1A**
CO1	छात्रों को हिंदी काव्य साहित्य का परिचय देना।
CO2	हिंदी कहानी साहित्य से अवगत कराना।
CO3	हिंदी भाषा द्वारा संवाद कौशल विकसित करना।
CO4	मौलिक लेखन की रुझान बढ़ाना।
Course Code: PR 112	**FYBcom- Name of Course/paper Financial Accounting- I**
CO1	Able to impart knowledge of basic accounting concepts
CO2	Able to create awareness about application of these concepts in business world
CO3	Able to impart skills regarding Computerised Accounting
CO4	Able to impart knowledge regarding finalization of accounts of various establishments.
Course Code: 114 A	**FYBcom- Name of Course/paper Business Business Mathematics & Statistics- I**
CO1	Students Will learne the basic concepts in Finance and Business Mathematics and Statistics
CO2	Students Will familiar the students with applications of Statistics and Mathematics in Business
CO3	Students Will acquaint students with some basic concepts in Statistics.

CO4	Students Will learn some elementary statistical methods for analysis of data.
CO5	The main outcome of this course is that the students are able to analyze the data by using some elementary statistical methods
Course Code: 115A	**FYBcom- Name of Course/paper Organizational Skills Development- I**
CO1	Students will get knowledge about the emerging changes in the modern office environment
CO2	Students will get knowledge about conceptual , analytical , technical and managerial skills of students efficient office organization and records management
CO3	Students will develop the organizational skills of students
CO4	Students will develop Technical skills among the students for designing and developing effective means to manage records , consistency and efficiency of work flow in the administrative section of an organsation
CO5	Students will develop employability skills among the students
Course Code: 116D	**FYBcom-Name of Course/paper Consumer Protection and Business Ethics - I**
CO1	Students will develop general awareness of consumerism among the students.
CO2	Students will understand the consumers rights, responsibility and role of United Nations.
CO3	Students will able to comprehensive understanding about the existing law on consumer protection in India.
CO4	Students will get knowledge about dispute redresses machinery and basic procedures for handling consumer dispute.
CO5	Abale to understand the issues relating to e-commerce, e-Banking emerging issues and internet regulations.
Course Code: 116C	**FYBcom- Name of Course/paper Marketing and Salesmanship- I (Fundamentals of Marketing)**

CO1	Students will understand the introduce the basic concepts in Marketing.
CO2	Students will understand the of the basic knowledge of Market Segmentation and Marketing Mix
CO3	Able to impart knowledge on Product and Price Mix.
CO4	Able to establish link between commerce, business and marketing.
CO5	Abale to understand to apply knowledge in practicality by enhancing their skills in the field of Marketing.
Course Code: PR 122	**FYBcom- Name of Course/paper Financial Accounting- II**
CO1	Able to impart knowledge of various software used in accounting
CO2	Able to impart knowledge about final accounts of charitable trusts
CO3	Able to impart knowledge about valuation of intangible assets
CO4	Able to impart knowledge about accounting for leases
Course Code: 124 A	**FYBcom- Name of Course/paper Business Business Mathematics & Statistics- II**
CO1	Students Will understand the basic concepts in Finance and Business Mathematics and Statistics
CO2	Students Will familiar the students with applications of Statistics and Mathematics in Business
CO3	Students Will acquaint students with some basic concepts in Statistics.
CO4	Students Will learn some elementary statistical methods for analysis of data.
CO5	The main outcome of this course is that the students are able to analyze the data by using some elementary

	statistical methods
Course Code: 115A	**FYBcom- Name of Course/paper Organizational Skills Development- II**
CO1	Students Will able to understand the qualities of a good manager and develop the necessary skill sets
CO2	Students Will able to develop the technical skills of the students to keep up with the technological advancements and digitalization
CO3	Students Will able to develop the communication skills of students and introducing them to the latest tools in communication
CO4	Students Will able to develop writing, presentation, interpersonal skills of the students for effective formal corporate reporting.
CO5	Students Will able to educate the students on the recent trends in communication technology and tools of office automation
Course Code: 126D	**FYBcom-Name of Course/paper Business Ethics - II**
CO1	Students Will able to understand ethical dilemmas at work.
CO2	Students Will able to understand differing perceptions of interests in business-related situations
CO3	Students Will able to understand concept of Corporate Social Responsibility, corporate Governance and explore its relevance to ethical business activity
CO4	Students Will able to examine whether ethics set any boundaries on Accounting, marketing, IT, Social Media and workplace.
CO5	Students Will able to play a constructive role in improving the sustainable development with which they may become involved.
Course Code: 126C	**FYBcom- Name of Course/paper Marketing and Salesmanship- II**
CO1	Students Will able to understand the concept of Salesmanship.

CO2	Students Will able to understand various techniques required for the salesman.
CO3	Students Will able to understand inculcatethe importance of Rural Marketing.
CO4	Students Will able to understand recent trends in marketing and social media marketing.
Course Code:-231	**S.Y. B.COM : Paper Title:- Business Communication**
CO1	To develop awareness regarding new trends in business communication
CO2	To understand the concept, process and importance of communication.
CO3	To provide knowledge of various media of communication.
CO4	To develop business communication skills through the developed technologies.
Course Code:-232	**S.Y. B.COM : Paper Title:- Corporate Accounting**
CO1	To make aware the students about the conceptual aspect of corporate accounting
CO2	To enable the students to develop awareness about Corporate Accounting in conformity with the provisions of Companies Act and Accounting as per Indian Accounting Standards
CO3	To develop the knowledge among the student about consolidation of financial statement with the process of holding
CO4	To update the students with knowledge of the process of liquidation of a company
CO5	To introduce the students with the recent trends in the field of accountancy
Course Code:-234	**S.Y. B.COM : Paper Title:- Business Management**

CO1	To provide an understanding about various functions of management.
CO2	To provide basic knowledge and understanding about various concepts of Business Management.
CO3	To help the students to develop cognizance of the importance of management principles.
CO4	To provide them tools and techniques to be used in the performance of the managerial job.
Course Code:-235	**S.Y. B.COM : Paper Title:- Elements of Company Law**
CO1	To develop general awareness of Elements of Company Law among the students.
CO2	To understand the Companies Act 2013 and its provisions.
CO3	To create awareness among the students about legal environment relating to the company law
CO4	To acquaint the students on e-commerce, E governance and e-filling mechanism relating to Companies
CO5	To enhance capacity of learners to seek the career opportunity in corporate sector.
Course Code:-236 (A)	**S.Y. B.COM : Paper Title:- Business Administration**
CO1	To provide basic knowledge about various forms of business organizations
CO2	To make them aware about the recent trends in business.
CO3	To acquaint the students about business environment and its implications thereon.
Course Code:- 236 (E)	**S.Y. B.COM : Paper Title:- Cost and Works Accounting**
CO1	To prepare learners to know and understand the basic concepts of cost.

CO2	To understand the elements of cost
CO3	To facilitate the learners to understand, develop and apply the techniques of inventory control
CO4	To enable students to prepare a cost sheet.
Course Code:-351	**T.Y. B.COM : Paper Title:- Business Regulatory Framework-I**
CO1	To create awareness among the students about legal environment relating to the Contract Law, Partnership Act, Sale of Goods Act in India.
CO2	To provide conceptual knowledge about the framework of business Law in India.
CO3	To understand the emerging issues relating to e-commerce, e-transaction issues and E Contracts
CO4	To acquaint students with the basic concepts, terms & provisions of Mercantile and Business Laws..
CO5	To seek the career opportunity in corporate sector relating to business law in India
Course Code:-352	**T.Y. B.COM : Paper Title:-Advanced Accounting-I**
CO1	To update the students with knowledge for preparation of final accounts of a Banking Companies with the provisions of Banking Regulation Act 1949.
CO2	To acquaint the student with knowledge about various concepts, objectives, and applicability of some important accounting standards.
CO3	To develop the knowledge among the students about reorganization of business regarding restructuring the capital.
CO4	To empower to students with skills to prepare the investment account in simple and summarized manner.
Course Code:-354	**T.Y. B.COM : Paper Title:- Auditing**
CO1	To get knowledge about concept of Checking, Vouching, Verification and Valuation, Types of Audit Report and Auditing Assurance Standard.

CO2	To acquaint themselves about the Definition, Nature,Objectives and Advantages of Auditing, Types of Audit, Errors and Fraud, Audit Program, Notebook, Working Paper, Internal Control, Check
CO3	To understand the provision related Qualification, Disqualification, Appointment, Removal, Rights ,Duties and Liability of Company Auditor and Provisions regarding Tax Audit as per Income Tax Act 1961 (Section 44 AA to 44AE).
CO4	To know the various new concepts in computerized system and Forensic Audit.
Course Code:-355 (a)	**T.Y. B.COM : Paper Title:- Business Administration-II (Human Resource Management)**
CO1	To acquaint the student with knowledge about various Concepts , Objectives of the Human Resource Function , to identify the difference between Human Resource Management and Human Resource Development
CO2	To develop understanding among the students the process of Recruitment and Selection, understanding the various means and methods associated with the Recruitment and Selection function
CO3	To update the students on the emerging trends in the area of Human Resource Management
CO4	To educate the students on the importance of Training and Development and its impact on Career Planning and Development
CO5	To acquaint the students on the concept of Performance Appraisal ,d the process for effective Performance appraisal and imbibe the values of Ethical Performance appraisal among the students
Course Code:-355 (e)	**T.Y. B.COM : Paper Title:- Cost and Works Accounting. Special Paper II**
CO1	To provide knowledge about the concepts and principles of overheads.
CO2	To Introduce the cost accounting standards and the cost accounting standard board.
CO3	To understand the stages involved in the accounting of overheads.
CO4	To build an ability towards strategic overhead accounting under Activity Based Costing
Course Code:- 356 (a)	**T.Y. B.COM : Paper Title:- Business Administration – III (Finance)**

CO1	To develop the Financial Planning Skills among the Students by introducing them to the process of efficient Financial Planning
CO2	To acquaint the student with knowledge about Corporate Finance and the structure if the Indian Financial Market
CO3	To educate the students on the importance of Capitalisation and the importance to maintaining an optimum capital structure
CO4	To create awareness among the students in the various sources of Finance available for raising corporate capital
Course Code:- 356 (e)	**T.Y. B.COM : Paper Title:- Cost and Works Accounting Special Paper III**
CO1	To understand the learner, application of Cost Accounting techniques in cost control and decision making.
CO2	To prepare learners to understand the basic techniques in Cost Accounting
CO3	To enable the learners to prepare various types of Budgets.
CO4	To learn the basic concept of Uniform Costing and Inter-firm comparison
CO5	To enhance the knowledge of students about MIS and Supply Chain Management.
9) Program: B. Sc. (Chemistry)	
Course Code:- CH-101	**F.Y.B.Sc. : Physical Chemistry (Semester-I)**
CO1	Students should able to apply thermodynamic principles to physical and chemical process
CO2	Students should able to calculations of enthalpy , Bond energy, Bond dissociation energy , resonance energy

CO3	Students should understand relation between Free energy and equilibrium and factors affecting on equilibrium constant.
CO4	Students should understand concept to ionization process occurred in acids, bases and pH scale
CO5	Students should able to apply ommon ion effect hydrolysis constant, ionic product, solubility roduct
Course Code:- CH-102	**F.Y.B.Sc. : Organic Chemistry (Semester-I)**
CO1	The students are expected to understand the fundamentals, principles, and recent developments in the subject area.
CO2	Students should inspire and boost interest of the students towards chemistry as themain subject
CO3	Students should familiarize with current and recent developments in Chemistry.
CO4	Students should able to apply create foundation for research and development in Chemistry.
Course Code:- CH-103	**F.Y.B.Sc. : Chemistry Practical –I (Semester-I)**
CO1	Students should understand importance of chemical safety and Lab safety while performing experiments in laboratory
CO2	Students should able to determine thermochemical parameters and related concepts
CO3	Students should learn the techniques of pH measurements
CO4	Students should able to analyse elements in organic compouns
CO5	Students should able to prepare buffer solutions
CO6	Students should able to use chromatographic Techniques for separation of constituents of mixtures

Course Code:- CH-201	**F.Y.B.Sc. : Inorganic Chemistry (Semester-II)**
CO1	Students should know significance of quantum numbers
CO2	Students should able to describe stability of half-filled and completely filled orbitals.
CO3	Students should understand various theories and principles applied to revel atomic structure
CO4	Students should understand periodicity of elements
CO5	Students should able to explain characteristics of ionic bond, types of ions, energy consideration in ionic bonding, lattice and solvation energy and their importance in the context of stability and solubility of ionic compounds
CO6	Students should understand geometry and effect of lone pairs with examples such as ClF3, Cl2O, BrF5,
	XeO3 and XeOF4.
Course Code:- CH-202	**F.Y.B.Sc. : Analytical Chemistry (Semester-II)**
CO1	Students should know perspectives of analytical Chemistry
CO2	Students should able to describe term mole, millimole, molar concentration, molar equilibrium concentration and Percent Concentration.
CO3	Students should understand various theories and principles applied to revel atomic structure
CO4	Students should understand basics of type determination, characteristic tests and classifications, reactions of different functional groups.
CO5	Students should able to explain characteristics of ionic bond, types of ions, energy consideration in ionic bonding, lattice and solvation energy and their importance in the context of stability and solubility of ionic compounds

CO6	Students should understand Basics of chromatography and types of chromatography and theoretical background for Paper and Thin Layer Chromatography
CO7	Students should know working of pH meter and applications of pH meter
Course Code:- CH-203	**F.Y.B.Sc. : Chemistry Practical –II (Semester-II)**
CO1	Students should able to carry inorganic estimations using volumetric analysis
CO2	Students should able to synthesise of Inorganic compounds
CO3	Students should learn analysis of commercial products
CO4	Students should able to analyse elements in organic compouns
CO5	Students should able to purify of organic compounds
CO6	Students should understand preparations and mechanism of reactions involved
Course Code: **CH -301**	**S.Y.B.Sc.: Physical and Analytical Chemistry (Semester-III)**
CO1	Students should able to define / explain adsorption, classification of given processes into physical and chemical adsorption.
CO2	Students should discuss factors influencing adsorption, its characteristics, differentiates types as
	physisorption and Chemisorption
CO3	Students should able to define / Explain concept of kinetics, terms used, rate laws, molecularity, order.
CO4	Students should understand basics of type determination, characteristic tests and classifications, reactions of different functional groups.

CO5	Students should able to determine order of reaction by integrated rate equation method, graphical method, half-life method and differential method.
CO6	Students should apply statistical methods to express his / her analytical results in laboratory.
CO7	Students should able to construct acid – base titration curves and performs choice of indicator for particular titration.
CO8	Students should able to prepare standard solution and perform standardization of solutions.
Course Code:CH-302	**S.Y.B.Sc. : Inorganic and Organic Chemistry.(Semester-III)**
CO1	Students should understand basic concept/principles of Inorganic and Organic chemistry.
CO2	Student will able to define different terms related to the coordination chemistry,their IUPAC names,
CO3	Students should understand structures, names,chemical properties of various functional groupes in organic chemistry. Get familiar with the concept of Reaction mechanism.
CO4	Students should prepare background for advanced and applied studies in chemistry.
Course Code:CH-402	**S.Y. B.Sc.: Paper Title Inorganic and Organic Chemistry.(Semester-IV)**
CO1	Students should understand concepts of inorganic chemistry and organic chemistry
CO2	Students should get aqanted with various theories trying to explain formation of coordinate compounds
CO3	Students should able to explain / discuss synthesis ,important reactions of some organic compounds.
CO4	Students should get familiar with stereoisomerism shown by cyclic hydrocarbons

Course Code:CH-403	**S.Y.B.Sc. : Chemistry Practical - IV (Semester-IV)**
CO1	Students should able to verify theoretical principles experimentally and interpret the experimental data on the basis of theoretical principles.
CO2	Students should able to correlate theory to experiments. Understand/verify theoretical principles by experiment observations; explain practical output / data with the help of theory.
CO3	Students should understand systematic methods of identification of substance by chemical methods
CO4	Students should able to analyse elements in organic compouns
CO5	Students should perform organic and inorganic synthesis and is able to follow the progress of the chemical reaction by suitable method (colour change, ppt. formation, TLC).
CO6	Students should perform the quantitative chemical analysis of substances explain principles behind it.
Course Code: CH-501	**TYBSc- Name of Course/paper: Physical Chemistry - I**
CO1	Students learns and know the historical of development/background of quantum mechanics in chemistry.
CO2	Students understand and explain the differences between classical and quantum mechanics.
CO3	Students understand the idea of wave function, De Broglie hypothesis and the uncertainty principle and the operators: Position, momentum and energy. Students derive and write Schrodinger equation for 1D, 2D and 3D model
CO4	Students understands the refraction, molar refreaction, additive and constitutive properties, electrical polarization of molecule -polar and non polar molecule.
CO5	Students should understand the electromagnetic radition, chracteristics of electromagnetic radiation, Rotational and vibrational changes of the molecules.
CO6	Students understands the phenomenon of scattering of light, rayleigh scattering, stokes and antistokes lines.
CO7	Students explains the concept of polarizability, selection rule for Raman Spectroscopy

CO8	Students explains difference between thermal and photochemical processes. Students understands photochemical laws: Grothus - Draper law, Stark-Einstein law,
CO9	Students understands the Quantum yield and reasons for high and low quantum yield, students explains factors affecting the quantum yield and Experimental method for the determination of quantum yield
CO10	Students understand and learns types of Photochemical reactions: photosynthesis, photolysis, photocatalysis, photosensitization . Students know and explain the concept of fluorescence and phosphorescence, Chemiluminescence
Course Code:CH- 502	**T Y B Sc - Name of Course / Paper : Analytical Chemistry-I**
CO 1	Students understands the qualitative and quantitative chemical analysis by Gravimetry.
CO 1	Explain different principles involved in the gravimetry, spectrophotometry, parameters in instrumental analysis, qualitative analysis
CO2	students understands the parameters such as Gravimetry, precipitation, solubility product, ionic product, common ion effect, precipitating agent, washing of ppt., drying and ignition of ppt.
CO3	Students should understands basic principles and instrumentation of spectrophotometry, Beers law, absorbance, transmittance, molar absorptivity, monochromator, wavelength of maximum absorbance
CO4	students should know the group reagent for I, II,IIIA, IIIB, IV, V and VI groups.
CO5	students should perform a dry tests, wet test, confirmatory test.
CO6	Students explains the theermal methods of chemical analysis such as thermogravimetry, thermogram, percent wt. loss, differential thermal analysis.
CO7	students are able to Differentiate / distinguish / Compare among the different analytical terms, process and analytical methods.
CO8	students are able to estimate the amount of substance by gravimetrically.
CO9	Students correlate and explain the theoretical principles involved with help of practical.

Course Code: CH-503	**TYBSc- Name of Course/paper: Physical Chemistry Practical - I**
CO1	Students should understands and learns instrumentation of refractometry
CO2	Students are able to determine refractive index, specific reaction and molar refreaction of given liquids.
CO3	Studentds should understands the basic principle of spectrophotometry and colorimetry: Fundamental laws of colorimetry.
CO4	Students should perform the titration and estimate the amount of Cu2+ ion with EDTA photometrically.
CO5	Students are able to determine indicator constant of methyl red indicator
CO6	Students understands the basic principles of conductometric titrations.
CO7	Students are able to perform and analyse the conductometric titration of 1) strong acid Vs strong base 2) strong acid Vs weak base 3) weak acid Vs Strong base 4) Mixture of weak acid and strong base.
CO8	Students are able to determine the velocity constant of hydrolysis of ethyl acetate by NaOH solution by conduct metric method
CO9	Students are able to determine the normality of citric acid in given fruit by titrating it against standard NaOH solution by conductometric method
CO10	Students perform and determine $\lambda\infty$ of strong electrolyte (NaCl or KCl) and to verify Onsager equation
CO11	Students are able to determine the relative strength of monochloro acetic acid and acetic acid conductometrically
CO12	Students are able to determine the molecular weight of a high polymer by using solutions of different concentrations by Viscosity method.
CO13	Students are able to determine the radius of glycerol molecule from viscosity measurement
CO14	Students understand principle of photoflorimetry and able to analyse of Riboflavin from vitamin supplementary capsules / syrup / tablet sample by Photoflurometry
CO15	Students perform table work ,explain and analyse vibration-rotation spectrum of HCl(g)

Course Code CH: 504	**T Y B Sc - Name of Course / Paper : Inorganic Chemistry-I**
CO1	Students are able to understands the co-ordination Chemistry
CO2	Students are able to Explain electroneutrality principle and different types of pi bonding.
CO3	Students understands and explain Nephelauxetic effect towards covalent bonding.
CO4	Students should Able to explain Charge Transfer Spectra.
CO5	Students learns the Molecular Orbital Theory and apply MOT for Octahedral complexes with sigma bonding.
CO6	Students understands and explain the advantages of MOT over VBT and CFT.
CO7	Studends understands inert and labile complexes, Stability of Complexes in aqueous solution
CO8	Students understnds the basic mechanisms of lignad substitution ractions of octaherdral and square planner complexes.
CO9	Students are able to understands Tran's effect and applications of Trans effect and Steriochemistry of mechanisms
CO10	Students understnds the position of d and f -block elements in periodic table.
CO11	Students are able to know trends in periodic properties of these elements w.r.t. size of atom and ions, reactivity, catalytic activity, oxidation state, complex formation ability, color, magnetic properties, non-stoichiometry, density, melting point, boiling point.
CO12	Students are able to know the inner transition elements, lanthanides, actinides
CO13	Students calculate and understnds Oxidation states of lanthanides and actinides and common oxidation states.

CO14	Students know the Separation of lanthanides by modern methods.
CO15	students are able to undestnds the chemistry transuranic elements
CO16	Students understands the meaning and difference between metals , Semiconductorsand insulators
CO17	Students are able to diffrentiate between conductor, semiconductors and insulators
CO18	Students are able to explain the metallic bonding and band theory of metals
CO19	Students are able to explain the effect of temperature and impurity on conductivity of metals and semiconductors
CO20	Students explain intrensic and extrensic semiconductors, n and p type semiconductors
CO21	Students explain the Meaning of super conductors and their structure and Discovery and applications of superconductors.
Course Code: CH- 505:	**TYBSc-Chemistry Name of Course/paper-Industrial Chemistry**
CO1	The students are expected to learn about Importance of industrial chemistry and the terms involved in Industrial Chemistry
CO2	The students should also know the physico-chemical principals involved in manufacturing process
CO3	The students are expected to learn the importance of Sugar industry
CO4	The students should know the Manufacturing of ethyl alcohol by using molasses and fruit juice
CO5	The students are expected to learn Different types of soap products

Course Code: CH-506	**TYBSc- Name of Course/paper:Physical Chemistry Practical-I**
CO 1	Students should familiar with principles and procedure of seperation and identyfication of a binary inorganic mixture
CO2	students shold capable to analtses mixtures containing borates and phosphates.
CO 3	They becomes acquinted with the principle and procedure of gravimetric analysis.
CO 4	They should prepare some of inorganic coplexes by reading the procedure.
CO 5	Student becomes familiar with Analysis of sodium bicarbonate from mixture, water of crystallization by thermal decomposition, by thermal decomposition and Analysis of Food/Pharmaceutical sample for ash and sulphated ash
Course Code: CH-507	**TYBSc- Name of Course/paper: Organic Chemistry - I**
CO1	Students should explain the reactivity and the reactions and mechanisms of polynuclear and hetreonuclear aromatic hydrocarbons.
CO2	Students should describe dynthetic applications ethyl acetoacetate and malonic ester.
CO3	Students should able to write the mechanism of some named rearrangement reactions and their applications.
CO4	Students should explain E1, E2 and E1cB mechanisms with evidences of these reactions.
CO5	Students should understand stereochemistry by using models and learn reactivity of geometrical isomers.

Course Code: CH-508	**TYBSc- Name of Course/paper: Chemistry of Biomolecules**
CO1	Student should explain Cell types, Difference between a bacterial cell, Plant cell and animal cell.
CO2	Student should understand the types of carbohydrates and their biochemical significance, structure and reactions of carbohydrates.
CO3	Students should know the types of lipids with examples, structure of lipids, properties of lipids.
CO4	Students should understand the structure, types, reactions and properties of amino acids.
CO5	Students should know the classes, subclasses, examples, specificity of enzymes.
CO6	Students should describe Types of Endocrine glands, their hormones and Biochemical nature of hormones..
Course Code: CH-509	**TYBSc- Name of Course/paper: Organic Chemistry Practical-I**
CO1	Student should Perform the quantitative chemical analysis of binary mixture, explain principles behind it.
CO2	Student should understand Learn the basic principles of green and sustainable chemistry.
CO3	Students should know the techniques involving drying and recrystallization by various method.
CO4	Students should Understand principle of Thin Layer Chromatographic techniques.
CO5	Students should able to Separate, purify and analyse binary water-soluble and insoluble mixture.
Course Code: CH-510(B)	**TYBSc- Name of Course/paper:Polymer Chemistry**

CO 1	student should able to understand History of polymers,Difference between simple compounds and polymer, Names of polymers
CO2	student should know Various ways of nomenclature
CO 3	Students understands the basic Difference between natural, synthetic, organic and inorganic polymers
CO 4	Students understands the Terms-Monomer, Polymer, Polymerization, Degree of polymerization, Functionality, Number average, Weight average molecular weight.
CO 5	Students are able to know Mechanisms of polymerization.
CO 6	Students are able to know Polymerization techniques.
CO 7	Students are able to know Uses & properties of polymers.
CO 8	Students are able to identify the Role of polymer industry in the economy.
CO 9	Students must know the knowledge of Advantages of polymers.
Course Code: CH-511(A)	**TYBSc-Chemistry Name of Course/paper-Environmental Chemistry**
CO1	Student becomes familiar with Importance and conservation of environment.
CO2	Students should know-Water resources,Water quality parameters
CO3	Student should know-Various analyticalTechniques used to determine water quality.
CO4	Students should know-methods of purification of polluted water.

Course Code: CH-601	**TYBSc- Name of Course/paper: Physical Chemistry-II**
CO1	Students understands the Electrochemical cells: Daniell cell, Conventions to represent electrochemical cells
CO2	Students learns and explain EMF of electrochemical cell and its measurement. Students also know the termodynamic condition for Reversible and Irreversible Elctrochemical Cells.
CO3	Students understands working and construction of primary refrence electrodes (SHE) and Secondary refrence electrode (Calomel Electrode). Students also able to explains the classification of electrodes.
CO4	Students understands the classification of electochemical cells : Concentration and Chemical electrochemical cells
CO5	Students understnads the Nernst Equation and its application for determination of EMF.
CO6	Students understands and learns the different application of e.m.f. measurements.
CO7	Students understands about working and construction of primary battries, secondary batteries and Full cells. Students are able to solve numericals based on electrochemical cells
CO8	Students understands and distinguish between crystalline and amorphous solids / anisotropic and isotropic solids.
CO9	Students understands and Explain the term crystallography and laws of crystallography.
CO10	Students are able to determine miller indices of the planes from weiss indices.
CO11	Students understands Bravais lattices, space groups, seven crystal systems and fourteen Bravais lattices,Cubic lattice and types of cubic lattice and distance between the planes for 100, 110 and 111 for cubic lattice
CO12	Methods of Crystal structure analysis: The Laue method and Braggs method: Derivation of Bragg's equation.
CO13	Students understnads the X ray analysis of NaCl crystal system and Calculation of d and λ for a crystal system
CO14	Studennts understands structure of atom (nucleus its inner (Proton+neutron) and outer part(electrons)

CO15	Students understands and explain the classification of nuclides, Isotopes, Isobars, Isotones and Nuclear Isomers
CO16	Students understand and explain the radioactiviy and types of radioactivity
CO18	Students explains the different applications of radioisotopes
Course Code: CH-602	**TYBSc- Name of Course/paper: Physical Chemistry - III**
CO 1	Students understands and explains the terms the terms-Solution, electrolytes, nonelectrolytes and colligative properties Lowering of vapour pressure of solvent in solution,Elevation of B.P. of solvent in solutionfreezing point depression,Osmosis and Osmotic pressure.
CO2	Students are able describe the application of colligative properties to determine molecular weight of nonelectrolyte, abnormal molecular weight
CO3	Students understands the kinetics of solid state reactions
CO4	Students explains Factors affecting on solid state reactions
CO5	Students are able to write Rate laws for reactions in solid state
CO6	Students are able to applying rate laws for solid state reactions
CO7	Students are able to study and discuss the results of kinetics studies
CO8	Students learns and explains Cohesive Energy of ionic crystals based on coulomb's law and Born Haber Cycle
CO9	Students understands the Band structure in solids – Na , Ca and diamond
CO10	students are able to know Conductors and insulators with sui

CO11	Students understands Semiconductors – Role of impurity in transformation of insulator into semiconductor
CO12	students understands the Temperature dependant conductivity semiconductors
CO13	Students know the historicals background of polymers and its application
CO14	Students are able to explains the classification of polymers
CO15	Students are able to know the methods of determination molecular wight of polymers
Course Code: CH-603	**TYBSc- Name of Course/paper: Physical Chemistry Practical-II**
CO1	Students should able to calculate the pKa value of monobasic weak acid by potentiometric titration
CO2	Studends should able to determine formal redox potential Fe2+/Fe3+ system by potentiometry
CO3	Students should able to understand the allication of e.m.f measurements in determination of solubility of sparingly soluble salts
CO4	Students should able to estimate the amount of halides (Cl, Br and I) from given mixture
CO5	Students are able to determine the pH of buffer solutions from emf measurements
CO6	Students are able to determine the degree of hydrolysis of aniline hydrochloride by pH metric method
CO7	Students should able to determine the dissociation constant of oxalic acids by pH metric tititration method
CO8	Students should able to determine the molecular weight of solute by depression in freezing point methods
CO9	Students should understands the principle of turbidometry

CO10	Students sholud able to determination of SO42-and Cl by turbidimetric method (turbidimetric titration or calibration curve method)
CO11	Students should able to determine the molecular weight of a given polymer by turbidometry
CO12	Students should able to analyse the crystal structure from X-ray diffraction spectra of given compounds
Course Code: CH-604	**TYBSc- Name of Course/paper: Inorganic Chemistry -II**
CO1	Students are able to define organometallic chemistry
CO2	Students should understands the nature of Metal -Carbon bond
CO3	Student should understand the multiple bonding due to CO ligand
CO4	They should know methods of synthesis of binary metal carbonyls
CO5	Students should understand the structure and bonding using valence electron count
CO6	They should know the uses of organometallic compounds in homogenous catalysis and Chemistry of ferrocene
CO7	Students are able to define and differentiate homogeneous and heterogeneous catalysis, Wilkinson's Catalysis, hydroformylation reaction, Monsanto acetic acid synthesis, Heck reaction and Hydrogenation of olefins , Zeolites in catalysis, biodiesel synthesis, Automotive Exhaust catalysts
CO8	Students able to Identify the biological role of inorganic ions & compounds,the abundance of elements in living system and earth crust, classification of metals as enzymatic and non-enzymatic,Understand the role of metals in non-enzymatic processes
CO9	Students able to Know the metalloproteins of iron,Explain the functions of hemoglobin and myoglobin in O2 transport and storage
CO10	Inorganic liquid crystals,Ionic liquids, their preparations, and their significance w.r.t green chemistry

CO11	Students are able to explain Technological importance of ionic liquids,know thy types of Inorganic polymers
CO12	Students are able to describe the synthesis, structural aspects of Inorganic polymers and their Uses
Course Code: CH-605	**TYBSc- Name of Course/paper: Inorganic Chemistry -III**
CO 1	Student should explain the concept of acid base and their theories
CO2	Students are able to know Strength of various types acids, and how strengths get affected in non-aqueous solvents
CO 3	Students Know the nature of solids, the crystal structures of solids, capable to draw the simple cubic, BCC and FCC structures
CO 4	Students are able to Identify the C.N. of an ion in ionic solid.
CO 5	Students are able to Know the effect of radius ratio in determining the crystal structure.
CO 6	Students are capable draw Born-Haber cycle
CO 7	students shouls explain the defects in Ionic solids, able to differentiate between the defects, Different Zeolite Framework Types and their classification
CO 8	Students understands the Zeolite synthesis and their structure and application
CO 9	Students understands the Various methods of nanoparticle synthesis,Stabilization of Nanoparticles in solution,Properties and Application of Nanoparticles
CO 10	Students Know about carbon nanotube and its application
CO 11	Students understands and know toxic chemical in the environment, the impact of toxic chemicals on enzyme

CO 12	Students are able to know the biochemical effect of Arsenic, Cd, Pb, Hg
Course Code: CH-606	**TYBSc- Name of Course/paper: Inorganic Chemistry Practical-II**
CO1	Students are able to estimate the amount of Phosphate (PO43-) from Fertilizer.
CO2	Students are able to estimate the amount of Iodine from Iodized salt
CO3	Students are able to calculate the amount of Calcium from milk powder
CO4	Students are learns and perform the estimation of Cu from Cu-Fungicide
CO5	Students understands the basic principles of flame photometry
CO6	Students are able to identify and find out Na by flame photometry by calibration curve method
CO7	Students are able to identify and find out by Na by flame photometry by regression method.
CO8	Students are able to identify and find K by flame photometry by calibration curve method
CO9	Students are able to identify and find K by flame photometry by regression method
CO10	Students understands the basic principles of column chromatography and Purification of water using cation/anion exchange resin and analysis by qualitative analysis
CO11	Students are able to know Synthesis of Silver nanoparticles
CO12	Students understands methods of Synthesis of ZnO nanoparticles.
CO13	Students are able to apply theorotical knowladge and Verify of periodic trends using solubility of alkaline earth metal hydroxides Ca(OH)2,Mg(OH)2, Cr(OH)2, Ba(OH)2.

CO14	Studends are able to know the determination of the Metal to ligand ratio (M : L) in complexes
Course Code: CH-607	**TYBSc- Name of Course/paper: Organic Chemistry - II**
CO1	Students should know the interaction of radiations with matter, different regions of electromagnetic radiations and different wave parameters.
CO2	Students should understand the principle of UV spectroscopy and the nature of UV spectrum and types of electronic excitations.
CO3	Students should understand the principle of IR spectroscopy, types of vibrations and the nature of IR spectrum.
CO4	Students should understand the principle of NMR spectroscopy and will understand various terms used in NMR spectroscopy.
CO5	Students should able to draw different types of disubstituted cyclohexanes in chair form.
CO6	Students should explain stability, energy calculations and optical activity of conformers of disubstituted cyclohexanes.
Course Code: CH- 608:	**TYBSc-Chemistry Name of Course/paper-Organic Chemistry**
CO1	The students are expected to learn about Different terms used – Disconnection, Synthons, Synthetic equivalence, FGI, TM. One group disconnection
CO2	The students should know Retrosynthesis and Synthesis of target molecules
CO3	The students are expected to understand Chemistry of reactive intermediates (carbocations, carbanions, free radicals, carbenes, nitrenes, benzynes etc…)
CO4	The students are expected to learn about Different rearrangement and various reactions such as:- 1. Wolff rearrangement (Step up), 2. Hofmann rearrangement (Step down), 3. Simmons-Smith reaction, 4. Michael reaction, 5. Wittig reaction and McMurry reaction, 6. Diels-Alder reaction, etc.

CO5	Students are expected to learn Preparation and Applications of following oxidising and reducing reagents
CO6	Students are able to do the Isolation and Classification of Natural Products
Course Code: CH-609	**TYBSc- Name of Course/paper: Organic Chemistry Practical-II**
CO1	Student should able to Interpret IR and NMR spectra of organic compounds.
CO2	Student should Calculate coupling constants from 1 H NMR spectra.
CO3	Students should able to determine the molecular weight of given tribasic acids.
CO4	Students should Explain the processes of a chromatography analysis .
CO5	Students should Apply the principles of extraction and understand the equipment for extraction.
Course Code: CH-610(A)	**TYBSc-Chemistry Name of Course/paper-Chemistry of Soil and Agrochemicals**
CO1	Student should know-components of soil and soil properties
CO2	Students should know-classification of the soil
CO3	Students should know-Reclamation and management of soil
CO4	Students should acquanted with-analytical and instrumentation methods used in the determinamation of soil profile

Course Code: CH-611(A)	**TYBSc- Name of Course/paper:Analytical Chemistry-II**
CO 1	student should able to explain principle of solvent extraction
CO2	student should know basics of chromatography, HPLC, GC, and AAS and AES
CO 3	student should know terms like aqueous and organic phase, distribution ratio and coefficient, percent extraction, ion association complex, theoretical plate, HETP, retention time, selectivity, resolution, stationary phase, normal and reverse phase, ion exchange, column efficiency, carrier gas, split and spitless injection, packed column, tubular column,
CO 4	student should know atomic absorption and emission spectroscopy, electronic excitation in atoms, nebulization, atomization, reduction of metal ions in flame, absorbance by atoms in flame, flame atomizers, furnace atomizers, interference in AES and FES, HCL, hydride generator, etc.
CO 5	student should able Identify parameters in analytical estimations like minimum analyte concentration , reagent concentration,selection of reagent , reaction condition to convert analyte into measurable form, wavelength selection in HPLC with spectrophotometric and fluorometric detector, solvent or carrier gas in HPLC and GC,
CO 6	student should able to solve problems and quantitative calculations on the basis of theory.
10) Program: B. Sc. (Botany)	
Course Code:- BO 111	**F.Y.B.Sc. : Paper Title -Plant life and Utilization I--- Sem –I**
CO1	Students can understand the General identification characters of the lower cryptogams, higher cryptogams and phanerogams.
CO2	General characteristics and classification of the Algae, fungi, lichens and Bryophytes
CO3	Life cycle of the *Spirogyra*, *Mushrooms* and *Riccia* with Utilization.

Course Code:- BO 112	**F.Y.B.Sc. :Paper –II Plan Morphology and Anatomy--- Sem –I**
CO1	Students know about the importance of the Morphology for the identification, Nomenclature, Classification, Phylogeny and Plant breeding
CO2	Understanding about the parts, types and functions of the Inflorescence, flower and fruit
CO3	Understand the Internal organization of the plant body and different types of the tissue and its functions
Course Code:- BO 121	**F.Y.B.Sc - Paper –I Plant life and Utilization II--- Sem –II**
CO1	Introduction of the Plant diversity with study of the Pteridophytes, Gymnosperms and Angiosperms
CO2	Study of the General characteristics and classification of the Pteridophytes, Gymnosperms and Angiosperms.
CO3	Know the Utilization and economic importance of the Pteridophytes, Gymnosperms and Angiosperms
CO4	Study of life cycle of the Nephrolepis, Cycas
Course Code-**BO 122**	**F.Y.B.Sc - Paper –II Principles of plant Science --- Sem –II**
CO1	Know the basic concepts about the plant physiology and cell biology
CO2	Understand the physiological processes like Diffusion, Imbibition, Osmosis, Plasmolysis, plant growth and growth regulators.
CO3	The study of the types and Ultrastructure of the cell and different cell organelles
CO4	Study the cell cycle in plants
Course Code:BO 113 BO 123	**Practical based on BO 111 and BO 112 Practical based on Bo 121 and Bo 122**

CO1	Study life cycle of the Lower and Higher cryptogamic plants with respect to morphological and Anatomical characteristics
CO2	Economic importance's of the plants
CO3	Study the Plasmolysis process of the plant
CO4	Estimation of the chlorophyll content of the plant
CO5	Extraction of the DNA from the plant tissue
CO6	Study of the cytological techniques –Mitosis and Meiosis
CO7	Documentation of the biodiversity
Course Code:BO 231	**S.Y.B.Sc. : Paper-I Title -Taxonomy of Angiosperms and Plant Ecology--- Sem –III**
CO-1	Importance of Angiosperm Taxonomy and different types of classification systems of the Angiosperms
CO-2	Study of different plant families like Annonaceae, Brassicaceae, Myrtaceaee, Rubiaceae, Solanaceae, Apocynaceae, Nyctaginaceae and Amaryllidaceae
CO-3	International Code for Nomenclature of Algae, Fungi and Plants (ICN)- Principles, Rules and Recommendations
CO-4	Alpha, Beta and Gamma diversity,Methods of vegetation sampling,Genetic,species and Ecosystem biodiversity
CO-5	Ecological Adaptations of The a) Hydrophytes, b) Mesophytes c) Xerophytes and d) Halophytes
Course Code:BO 232	**S.Y.B.Sc. : Paper-II Title -Plant Physiology--- Sem –III**
CO1	Credit I: Students understood water and plant relationship, importance of water absorption, translocation and transpiration.

CO2	Credit I: Importance of various process like ascent of sap, transpiration, nitrogen metabolism etc. in plants for growth in life of plants.
CO3	Credit II: Students understood importance of Nitrogen in plants and how plant can obtain Nitrogen by various nitrogen fixation process, how it affects the yield of crop plants.
CO4	Credit II: Importance of seed dormancy breaking methods and factors affect the germination and process will help student to break seed dormancy of some plants by using techniques learnt in this topic.
CO5	Credit II: Importance of photo light effect and chilling effect important for flowering and fruit setting, techniques learnt in this chapter can be use for inducing flowering in some important crop or ornamental plants.
Course Code:BO 241	**S.Y.B.Sc. : Paper-I Title -Plant Anatomy and Embryology--- Sem –IV**
CO-1	To understand the Importance and scope of plant anatomy and embryology.
CO-2	To study different plant examples for anatomical characters.
CO-3	To study male and female gametophyte.
CO-4	Tetrasorangiate anther and types of ovules.
Course Code:BO 242	**S.Y.B.Sc. : Paper-II Title -Plant Biotechnology--- Sem –IV**
CO1	**Credit I:** Student will understand the term biotechnology and its applications for mankind
CO2	**Credit I:** Student will learn about techniques of plant cloning, plant tissue culture and micropropagation
CO3	**Credit I:** Student will able to produce of SCP from algae (Spirulina) and fungi (Yeast) and its economic importance.
CO4	**Credit II:** Phytoremediation with the help of various methods can be achieved.
CO5	**Credit II:** DNA isolation and its important in gene cloning.

CO6	**Credit II:** Gene transfer by different vectors and *Agrobacterium* mediated gene transfer in plants, genetic engineering for crop improvement.
CO7	**Credit II:** Student will understand field of Biofuel technology and it's applications
Course Code:BO 233 BO 243	**Practical based on BO 231 & BO 232 and Practical based on BO 241 & BO 242**
CO-1	Study of the different tools used for study of the plants and ecologucal instruments used for the ecological study , General characters and Description of the Plant families
CO-2	Ecological adaptation of the Hydrophytes and Xerophytes
CO-3	Study of the different types of the vegetation
CO-4	Estimate the rate of trnaspiration of plants under different climatic conditions.
CO-4	Calculation of the deed germination percentage and vigor index
CO-5	Perform phytochemical test for for the protein content and the starch from Germinating and Non-Germinating seeds
CO-6	Environmental and Commercial importance of the Biofertilizers
CO-7	Study of the different types of the Epidermal and Mechanical tissue systems and staining procedures
CO-8	The Normal and Abnormal type of the secondary growths in the plants with the examples and concept of the the Autumn wood and spring wood with the Annual Growth Rings.
CO-9	Concept and different steps of the Plant tissue cuture technology like Equipments required, Chemicals, Design of the Laboratory, Cleaning and sterilization of the Glasswares, Media preperation and sterilization, Concept of the Explants, Incoculation and Incubation of the Explants and Hardening techniques with commercial utilization.
CO-10	Laboratory cultivation of the Spirulina and demonstration of the Transgenic crops

CO-11	Demonstrations of the different Equipments like Agarose Gel Electrophoresis, Spectophotometer and Centrifuge machine
Discipline specific Elective courses Course Code:BO 351	**T.Y.B.Sc. : Paper-I Title -Cryptogamic Botany -Algae and Fungi- Sem –V**
CO-1	Identification of the Algae with respect to General characters and their classification according to G.M.Smith
CO-2	Life cycle and economic importance of the Algae with the study of Nostoc, Oedogonium Chara, Sargassum and Batrachospermum.
CO-3	Identification of the Fungi with respect to General characters and their classification according to Alexopolous and mims(1979)
CO-4	Study of the Life Cycle of Mucor (Zygomycotina), Saccharomyces (Ascomycotina), Puccinia (Basidiomycotina), Penecillium and Cercospore (Deuteromycotina)
CO-5	Symbiotic Associations and significance of the Fungi
Course Code:BO 352	**T.Y.B.Sc. : Paper-II Title -Archegoniate- Sem –V**
CO-1	Basic study of Bryophytes and Pteridophytes w.r.t Habit, Habitat, Morphology, Anatomy, and Embryology etc.
CO-2	Understands the evolution in plants through Bryophytes and Pteridophytes
CO-3	Knowledge of Economic importance of Bryophytes and Pteridophytes will be helpful in future career prospective.
Course Code:BO 353	**T.Y.B.Sc. : Paper-III Title -Spermatophyta and Paleobotany- Sem –V**
CO1	Students get information about Gymnosperm identification with respect to Morphology and anatomy.
CO2	Students get knowledge about Angiosperm identification with respect to Morphology and anatomy.

CO3	Students learnt to prepare of taxonomic key on the basis of morphological characters.
CO4	Students learnt identification and plant authentication process in Plant taxonomy.
CO5	Students get knowledge of Speciation & Endemism, concept, Integrative Taxonomy is synthetic Science, Evidences from Anatomy, Cytology, Palynology & Molecular Biology
CO6	Students get knowledge of Palaeobotany, Fossil- Definition, process of fossil formation
Course Code:BO 354	**T.Y.B.Sc. : Paper-IV Title -Plant Ecology- Sem –V**
CO-1	Understands inter-relation between living and nonliving world.
CO-2	To understand plant ecoogy with biogeographic regions .
CO-3	To know the concept of plant indicators.
CO-4	To understand environmental audit as well environmental impact assesment .
CO-4	To know regarding the concept of remote sensing and ecological management
Course Code:BO 355	**T.Y.B.Sc. : Paper-V Title -Cell and Molecular Biology- Sem –V**
CO1	**Credit-I:** To understand Cell biology, pioneering work in Cell Biology, its scopes and interdisciplinary approaches of Cell Biology.
CO2	**Credit-I:** Students get information about various organelles present in the cell, their functions and importance. Sites of biochemical process this basic information is useful for further practical applications.
CO3	**Credit-I:** Students get knowledge about signaling molecules and receptors, Calcium signaling pathway in plants
CO4	**Credit-II:** Students get an idea about Molecular biology and importance of central Dogma and Experimental knowledge DNA as genetic material.

CO5	**Credit-II:** Student will learn idea of synthesis of DNA in laboratory by process of DNA Replication, enzyme involved in both Prokaryotes and Eukaryotes.
CO6	**Credit-II:** Student will understand gene organization this will help in practical knowledge of gene location. Students will get information of protein synthesis and regulation of gene expression that knowledge will used in research experiments based on Molecular biology.
Course Code:BO 356	**T.Y.B.Sc. : Paper-VI Title -Genetics- Sem –V**
CO-1	Concept , branches and applications of the Genetics
CO-2	Mendels laws of Inheritance and different types of the Gene Interactions
CO-3	Know the Concept and examples of the Multiple Alleles
CO-4	Mechanism of the Linkage , recombination and crossing over with construction of the Linkage Map using two point and three point test cross
CO-5	Understand the Structural and Numerical changes in the Chromosomes and significance
CO-6	Concept , mechanism and types of the Cytoplasmic and Quantitative Inheritance
CO-7	Concept and different types of the Sex linked inheritance like X-linked inheritance, Y-Linked Inheritance, Sex -influenced genes and sex limited genes
Course Code:BO 357	**T.Y.B.Sc. : Practical based on BO 351 & BO 352- Sem –V**
CO-4	**Study of physicichemical properties of water and BOD of water sample**
CO-5	Study of suitable ecosystem by line/belt transect method/ nested quadrate method
CO-6	Acquisition of ecological data of particular locality by using GPS/ altimeter/geographicloa maps etc
CO-7	Study of polluted water with reference to BOD.

CO-8	Study of physicochemical properties of water body by using sacchi disc, Ph meter and electric conducitivity meter.
CO-9	Acquisition of ecological data of particular locality by using GPS/ altimeter/geographicloa maps etc
CO-10	Study of suitable ecosystem by line/belt transect method/ nested quadrate method.
Course Code:BO 358	**T.Y.B.Sc. :Practical based on BO 353 & BO 354- Sem –V**
CO-1	Study of plant families Nymphaeaceae, Oleaceae, Amaranthaceae, Cannaceae
CO-2	Preperation of Botanical Keys, Internal and Experanal study of *Gnetum* and *Pinus*
CO-3	Study of the Fossils
CO-4	Study of physicichemical properties of water and BOD of water sample
CO-5	Study of suitable ecosystem by line/belt transect method/ nested quadrate method
CO-6	Acquisition of ecological data of particular locality by using GPS/ altimeter/geographicloa maps etc
Course Code:BO 359	**T.Y.B.Sc. :Practical based on BO 355 & BO 356- Sem –V**
CO-1	Study of mitosis and meiosis and their stages
CO-2	Isolation and estimation of DNA by various method
CO-3	Polutene chromosome study and importance
CO-4	Concept , branches and applications of the Genetics, Know the Concept and examples of the Multiple Alleles

CO-5	Structural heterozygotes (multiple translocations) in Rhoeo and Problems on quantitative inheritence
Skill Enhancement Course Code BO 3510	**T.Y.B.Sc. : Medicinal Botany- Sem –V**
CO-1	Understand various Indigenous system of Medicine
CO-2	Understand biochemicals present in plant
CO-3	Methology of extraction of medicinally important biochemicals
CO-4	Study of activity of Drug
CO-5	Conservation of Medicinally important Endangered and Endemic plants
CO-6	Study of Propagation methods of Mecinally important plants for bussiness oriented aspect
CO-7	TO know the relation between Ethnobotany and Folk Medicine
Skill Enhancement Course Code BO 3511	**T.Y.B.Sc. : Plant Diversity and Human Health- Sem –V**
CO-1	Types of the Biodiversity and its importance
CO-2	Importance of the Agrobiodiversity and its importance
CO-3	Current scenario of the Biodiversity loss, threats to biodiversity loss and Management of the biodiversity methods
CO-4	Biodiversity conservation methods like In-situ and Ex-situ conservation and importance of the awareness programe and sustainable development
CO-5	Importance of the plants in relation to the Human welfare

Discipline specific Elective courses Course Code:BO 361	**T.Y.B.Sc. : Paper-I Title -Plant Physiology- Sem –VI**
CO-1	Study of Physiological activities of Plant e.g. Photosynthesis, Respiration, Transportation, Stomatal Biology, PGR, and Photomorphogenesis
CO-2	To know the relation between Plant Anatomy and Plant Physiology
CO-3	To know the mineral nutrition of for to overcome plant dieseases
CO-4	Development of Salt, Water, Tempreture resistant crop plant varieties in future research
Course Code:BO 362	**T.Y.B.Sc. : Paper-I Title -Biochemistry- Sem –VI**
CO-1	To know the biochemicals present in Plant.
CO-2	Study of Various Biomolecules e.g. Carbohydrates, Proteins, Lipids, Vitamins etc.
CO-3	Identification of medicinall active Biochemicals for drug formation
CO-4	To know enzyme activity to alter biochemical synthesis in plant for medicinal use.
Course Code:BO 363	**T.Y.B.Sc. : Paper-I Title -Plant Pathology- Sem –VI**
CO-1	Disease development with the concept of the Disease cycle
CO-2	Pre existing and Induced defense mechanisms of the plants
CO-3	Different methods of the study of plant diseases
CO-4	Fungal, Bacterial, Mycoplasmal, Nematodal, Viral and Non-Parasitic diseases of the plants

CO-5	Principles of the plant disease control
Course Code:BO 364	**T.Y.B.Sc. : Paper-I Title -Evolution and Population genetics- Sem –VI**
CO-1	To understand the distinction between original life and evolution.
CO-2	To know various evidences for evolution.
CO-3	Concept of population genetics and evolution.
Course Code:BO 365	**T.Y.B.Sc. : Paper-I Title -Advanced Plant Biotechnology- Sem –VI**
BO 365: CO1	**Credit I:** Significant achievements in Indian plant Biotechnology Global Impact and Current status of plant Biotechnology. Impact of Biotechnology on Health care, Agriculture, and Environment.
BO 365: CO2	**Credit I:** Students know the technique and applications of callus culture, cell suspension culture, protoplast culture, somatic hybridization and cyprids, Haploid production, Micropropagation, embryo culture-and embryo rescue.
BO 365: CO3	**Credit I:** Student understood process involved in Genetically engineering also methods of gene transfer in plants.
BO 365: CO4	**Credit-II:** Student will learn definition and concept of Cryopreservation and Germplasm Conservation techniques.
BO 365: CO5	**Credit-II:**GMO and Recombinant foods and acceptance problems in society, importance of recombinant therapeutic product for human health care for improvement of future products.
BO 365: CO6	**Credit-II:** Student will get an idea about Microbial Biotechnology, in that they will learn Biochemistry of fermentation, Microorganism used in fermentation, fermentable substrate, Ethanol fermentation methods, Distilleries producing alcohols. Also techniques of Commercial production: Alcoholic beverages, organic acids, citric acids. Advantages of fermentation.
BO 365: CO7	**Credit-II: S**tudents will learn about Transgenic Plants as Bioreactors like Metabolic engineering of starch, Bioplastics, protein factories, Production of therapeutic proteins from plants.

BO 365: CO8	**Credit-II :** Student will get an idea about Nano-biotechnology and its Applications of nanotechnology in agriculture (fertilizers and pesticides).
Course Code:BO 366	**T.Y.B.Sc. : Paper-I Title -Plant Breeding and Seed Technology- Sem –VI**
CO-1	Primary and secondary Introduction, procedure, merits and demerits and Achievments
CO-2	Concept of the Mass, pureline and clonal selection with merits , dmerits and Achievments
CO-3	Hybridization procedure and pedigree and Bulk method of hybridization
CO-4	Concept of Hybrid Vigor and Heterosis
CO-5	Mutation Breeding-Application and Limitations
CO-6	To Know different classes of seeds and seed Act in India
CO-7	Objectives of the National and State seed corporation and General seed production procedure
CO-8	Seed certification and seed testing procedure
CO-9	Seed management during the storage
Course Code:BO 367	**T.Y.B.Sc. : Practical based on BO 361 & BO 362- Sem –VI**
CO-1	Practical demonstration and experimentation of plant physiological concepts like plasmolysis
CO-2	Calculation of stomatal index and stomatal frequency of a mesophyte and a xerophyte.
CO-3	Comparison of the rate of respiration in any two parts of a plant.

CO-4	Separation of amino acids by paper chromatography.
CO-5	Demonstration of Enzyme aactivity: Amylase /invertase /catalase
CO-6	Qualitative tests for starch, lipids and proteins.
Course Code:BO 368	**T.Y.B.Sc. : Practical based on BO 363 & BO 364- Sem –VI**
CO-1	Preparation culture media for isolation of plant pathogens.
CO-2	Culture technique- Streak plate methods, pour plate methods, Spread plate
CO-3	Study of the Fungal, Bacterial, Mycoplasmal, Viral and Non-Parasitic diseases of the plants
CO-4	Preparation of 1% Bordeaux mixture and Bordeaux paste 10%.
CO-5	Preparation of Jivamruta.
CO-6	Study of Geological time scale
CO-7	Study of Fungicides and Microbial pesticides.
CO-8	Study of types of Fossils
CO-9	Study of Koch's Postulates.
CO-10	Numerical Problems based on Allele frequency and Genotype frequency and Hardy-Weinberg Equilibrium
Course Code:BO 369	**T.Y.B.Sc. : Practical based on BO 363 & BO 364- Sem –VI**
CO-1	Demonstration of any three evidences of organic evolution.

CO-2	Numerical problems based on Allele frequency and genotype frequency.
CO-3	Numerical problems basHardy-weinberg equlibrium.
CO-4	Study of sympatric speciation with suitable example.
Skill Enhancement Course Code BO 3610	**BO 3610: Nursery and Gardening Management- 2 Credits**
CO-1	Study different types of Plant propagation methods
CO-2	Study basics of Gardening
CO-3	Encorporate basics of Nursery and Gardening Management into bussiness in future perspective
CO-4	Understand the relation between Nursery & Gardening Management and Environment
Skill Enhancement Course Code BO 3611	**T.Y.B.Sc. : Biofertilizers- Sem –VI**
CO-1	Study basics and types of Biofertilizers
CO-2	Understand the neccessity of Biofertilizers over Chemical fertilizers
CO-3	Look forward as a bussiness opportunity
CO-4	Understand the relation between Biofertilizers and Environment
11) Program: B. Sc. (Microbiology)	

MB 111	**FYBSc- Semester I - Name of paper: I Introdution to Microbial world**
CO1	Students will be able to enlist and describe important contributions made by various scientists in the field of microbiology.
CO2	They will be able to review the basics of different concepts important in microbiology.
CO3	Students will be able to recognize various types of microorganisms.
CO4	They will understand the differences between different microorganisms.
CO5	Students will apprentice the role of microorganisms, both useful and harmful.
CO6	They will get the knowledge of scope of microbiology and the fields of microbiology where they could develop their carrier in future.
MB 112	**FYBSc-Semester II - Name of paper: II Basic Techniques in Microbiology**
CO1	Students gather all information about different types of microscopic techniques.
CO2	Students learn how to see bacteria and different bacterial parts by suitable staining processes.
CO3	Students can perform sterilization & disinfection techniques as per requirement.
MB 113	**F.Y.B.Sc. Semester I - Practical course based on theory paper I and II**
CO1	They will inculcate the sense of scientific responsibilities, personal hygiene and safety while working in microbiology lab
CO2	Students will get introduced to the concepts, basic techniques used in handling instruments and their application in Microbiology

CO3	They will get experience of handling compound and binocular microscope
CO4	They will develop skill for keen observation to study microorganisms on the basis of morphological, structural characterization
CO5	They study microorganisms by using different microscopy techniques, different staining techniques and observing motility of bacteria
MB 121	**FYBSc- Semester II - Name of paper: I- Bacterial cell and Biochemistry**
CO1	Students will be able to describe the characteristics that distinguish eukaryotic and prokaryotic cells.
CO2	They will be able to describe chemical, structural, and functions of different components of the bacteria.
CO3	Students learn the elements present in biomolecules and the different monomers and polymers
CO4	Students study the four major complex biomolecules found in living cells and the basis for grouping of biomolecules into those four groups
CO5	Students can explain grouping of bacteria and viruses based on different characteristics
MB 122	**FYBSc-Semester II - Name of paper: II Basic Techniques in Microbiology**
CO1	Students learn how to cultivate microorganisms by knowing requirement of each group of microorganism.
CO2	Students understand different models of bacterial growth & can measure growth using various techniques.
MB123	**F.Y.B.Sc. Semester II- Practical course based on theory paper I and II**
CO1	Students learn characteristics of microbial world by studying their growth nutritioal requirements and growing them by using suitable media
CO2	Students get trained with the different techniques of isolation and enumeration of bacteria and their preservation

CO3	They will get to know and study the normal microflora present on human body
CO4	Students are trained in preparing laboratory manuals, standard operating practices and logbooks
CO5	This practical course will build up skilled human resources for the well-being of humanity
Course Code:- MB211	**S.Y.B.Sc. : Paper Title : Medical Microbiology and Immunology**
CO1	Students will be able to identify common infectious agents and the diseases that they cause and their mode of transmission.
CO2	Students can explain general and specific mechanisms by which an infectious agent causes disease.
CO3	Students will acquire the knowledge of population health, epidemiology principles and the scientific basis of research methods relevant to healthcare
CO4	Students will be able to describe the roles of the immune system in both maintaining health and contributing to disease.
CO5	Students will be able to identify the cellular basis of immune responsiveness.
Course Code:- MB212	**S.Y.B.Sc. : Paper Title : Bacterial Physiology and Fermentation Technology**
CO1	Students learn about Enzyme structure, properties, nomenclature, classification, modes of catalysis and effect of enviornmental factors on enzyme activity.
CO2	Students are made aware of vairous catabolic and anabolic pathways occuring in bacteria.
CO3	Students understand concept of fermentation technology, importance of bacterial strains, basic parts of fermenter.
CO4	Stdents learn about how to monitor various parameters of fermentation, types of fermentation, how to prepare medium and control contamination.
Course Code:- MB213	**S.Y.B.Sc. : Paper Title :Practical based on MB211 & MB 212**

CO1	Students will be able to evaluate methods used to identify infectious agents by morphological, cultural and biochemical characterization of pathogens.
CO2	Students will be able to isolate, identify and screen for industrially important microorganism from natural source.
CO3	Student could identify human blood groups.
CO4	Students could measure the dimensions of microbial cells by micrometry.
Course Code:- MB221	**S.Y.B.Sc. : Paper Title: Bacterial Genetics**
CO1	Students will be able to develop and demonstrate an understanding of the structure and function of genes and the organization of the bacterial genome.
CO2	Students will be able to explain the structure of DNA and the process of prokaryotic DNA replication.
CO3	Students will be able to describe the concept of Genetic code and its properties, the concept of Mutation and Types of mutations.
CO4	Students will be able to explain the importance of bacterial plasmid in biotechnology.
Course Code:- MB222	**S.Y.B.Sc. : Paper Title : Air, Water and Soil Microbiology**
CO1	Students get aquainted with air flora, methods of Air sampling and types of air samplers, air sanitation and air borne infections.
CO2	Students learn about types of water, bacteriological standards of water quality, water purification methods, water borne infections
CO3	Students could identify indicators of faecal pollution and check the potability of water.
CO4	Studets understand role of soil microorganisms in composting, as biofertiliser, as biocontrol agents, in elemental cycles.
Course Code:- MB223	**S.Y.B.Sc. : Paper Title : Practical based on MB221 & MB 222**

CO1	Students could study air flora and mak bacterial and fungal counts present in air of defined space.
CO2	Students can check potability of water samples.
CO3	Students could enrich, isolate and prepare Bioinoculant(Azo-Rhizo / Blue Green Algae (cyanobacteria)
CO4	Students could bring abot mutation in bacteria and isolate mutants.
Course Code: MB 351	**TYBSc- Name of Course/paper: Medical Microbiology I**
CO1	Understand the human anatomy, pathogens associated with diseases.
CO2	Acquire knowledge of principles underlying establishment of pathogens in human body.
CO3	Comprehend of pathogenesis of specific pathogens causing microbial diseases.
CO4	Assess epidemiological patterns of microbial disease transmission as various modes, intensity at local and global level.
Course Code: MB352	**TYBSc- Name of Course/paper: Immunology I**
CO1	Understand immune system structure, composition, function and comparison of different types of immunity.
CO2	Acquire knowledge about antigens, Recognition of pathogens; antigen processing and presentation; Immunity to infection and pathological consequences of immunodeficiencies.
CO3	To learn the applications of Immunology in monoclonal antibodies, vaccines production and Immunotherapy.
Course Code: MB 353	**TYBSc- Name of Course/paper: Enzymology**
CO1	To understand methods of active site determination, role of enzymes and its cofactors in microbial physiology.

CO2	To learn to perform enzyme assay, purification and quantification of enzymes activity, enzyme kinetics in terms of initial, final velocity, mathematical expression of enzyme kinetic parameters.
CO3	To correlate regulation of metabolism at enzymatic levels and apply, methodology for commercial applications of enzymes
Course Code: MB 354	**TYBSc- Name of Course/paper: Genetics**
CO1	To exhibit a knowledge base in Genetics and Molecular Biology
CO2	To understand the central dogma of Molecular Biology
CO3	To construct genetic map of bacteria and fungi
Course Code: MB 355	**TYBSc- Name of Course/paper: Fermentation Technology I**
CO1	To impart technical understanding of commercial fermentations.
CO2	To apply classical, advanced strain improvement and isolation techniques for fermentationprocesses.
CO3	To optimize and sterilize media used in fermentation industry for commerciallyeconomical and efficient fermentations.
Course Code: MB356	**TYBSc- Name of Course/paper: Agricultural Microbiology**
CO1	To understand plant growth improvement with respect to disease resistance, environment tolerance.
CO2	To correlate stages of plant disease development, epidemiology, symptom based classification, control methods.
CO3	To understand the importance of microorganisms in sustainable agriculture, biotechnological application of bio films, edible vaccines.
CO4	To correlate Soil Micro biome and Role of microorganisms in soil health

CO5	To determine the use of Microorganisms as tools in plant genetic engineering.
Course Code: MB357	**TYBSc- Name of Course/paper: Practical course-I Diagnostic Microbiology and Immunology**
CO1	Students are capable of diagnosing of physiological disorders and diseases by routine examination of urine, stool, pus and sputum.
CO2	Students could isolate and identify human bacterial pathogens from clinical samples by cultural examinations.
CO3	Assess epidemiological patterns of microbial disease transmission as various modes, intensity at local and global level.
Course Code: MB358	**TYBSc- Name of Course/paper: Practical course-II Enzymology and Genetics**
CO1	Students would be trained in various biochemical techniques like chromatography, centrifugation, qualitative and quantitative analysis of biochemical biomolecules.
CO2	Students could isolate and purify DNA from bacterial cells.
CO3	Students can perform conjugation process.
Course Code: MB 359	**TYBSc- Name of Course/paper: Practical course-III Fermentation Technology- I and Agricultural Microbiology**
CO1	Students will be trained with various techniques carried out in industries like fermentation.
CO2	Students can isolate and identify various plant pathogens.
CO3	Students can produce bioinoculants and carry out its validation
Course Code: MB 3510	**TYBSc- Name of paper: Marine Microbiology and Practical course: Marine Microbiology**
CO1	To impart the awareness of unseen and unexplored niche of marine ecosystem of microbes.

CO2	To acquire advances in the knowledge of marine microbes and marine ecology.
CO3	To learn the field research on marine processes and laboratory research on microorganisms.
CO4	To comprehend the role of marine microbes in bioremediation and bioprospecting.
CO5	To avail career opportunities in marine education, industry and research.
Course Code:MB 3511	**TYBSc- Name of paper: Dairy Microbiology and Practical course: Dairy Microbiology**
CO1	To understand prospects of dairying at commercial marketing.
CO2	To acquire skills of processing of milk and dairy products.
CO3	To assess quality control in dairy industry.
CO4	To comprehend production of dairy products of commercial significance with emphasis tolocal and global market demand.
Course Code: MB 361	**TYBSc- Name of Course/paper: Medical Microbiology II**
CO1	Gain Knowledge principles of chemotherapy of microbial diseases and development of drug resistance among pathogens and strategies to mitigate.
CO2	Develop identification systems for microbial disease diagnosis, disease treatment and prevention measures.
Course Code: MB362	**TYBSc- Name of Course/paper: Immunology II**
CO1	Understand abnormal working of Immune system in hypersensitivity, auto immune diseases, immune tolerance and transplantation immunology.
CO2	To develop strategies for Diagnosis of diseases based on antigen and antibody reactions with emphasis on prevailing communicable diseases.

Course Code: MB 363	**TYBSc- Name of Course/paper: Metabolism**
CO1	To learn mechanisms of transport of solutes across the membrane
CO2	To get acquainted with mechanism of biosynthesis and degradation of bio molecules
CO3	To comprehend basic concept of autotrophic mode of metabolism of prokaryotes
Course Code: MB 364	**TYBSc- Name of Course/paper: Molecular Biology**
CO1	To get introduced to concept of recombination and bacteriophage Genetics
CO2	To understand the concept cloning in bacteria
CO3	To demonstrate the knowledge of common and advanced laboratory practices in Molecular Biology
Course Code: MB 365	**TYBSc- Name of Course/paper: Fermentation Technology II**
CO1	To recover the product using suitable methods and ensuring quality of the finished productby quality assurance tests.
CO2	To acquaint fermentation economics, process patentability, process validation.
CO3	To comprehend the large scale productions of commercially significant fermentation productsof classical and recent significance.
Course Code: MB366	**TYBSc- Name of Course/paper: Food Microbiology**
CO1	To describe food safety problems and solutions in India and global scale.
CO2	Identify and classify types of microorganisms in food processing and compare their Characteristics and behavior

CO3	To learn food classification based on their perishability, intrinsic and extrinsic factors affecting the growth of microbes in foods, role of microorganisms in food fermentation.
CO4	To acquire knowledge about food spoilage, food borne diseases, predisposition and preventive and control measures.
CO5	To apply principles of sanitation, heat treatment, irradiation, modified atmosphere, antimicrobial preservatives and combination of method (hurdle concept) to control microbial growth with emphasis on HACCP guidelines.
Course Code: MB367	**TYBSc- Name of Course/paper: Practical course-I Diagnostic Microbiology and Immunology**
CO1	Students could isolate and identify human protozoal, bacterial and fungal pathogens from clinical samples by cultural examinations.
CO2	Students can perform immunochromatographic and immuno precipitation techniques.
CO3	Students learn immunohaematological techniques.
Course Code: MB368	**TYBSc- Name of Course/paper: Practical course-II Metabolism and Molecular Biology**
CO1	Students could perform quantitative estimations of serum protein, blood sugar, blood urea, serum cholesterol.
CO2	Students can carry out small scale production of enzyme, purify it and quantify it.
CO3	Stuents can isolate and quantify baceriophages.
Course Code: MB369	**TYBSc- Name of Course/paper: Practical course-III Fermentation Technology- II and Food Microbiology**
CO1	Students can produce alocohol/citric acid on laboratory scale.
CO2	Students learn to decide important parameters of food industry.
CO3	Students study various SOPs of pharmaceutical industry.

Course Code: MB 3610	**TYBSc- Name of paper: Waste Management and Waste Management Practical**
CO1	To understand waste management and it practicable applicability.
CO2	To assess the magnitude and influence of hazardous content of waste, pollution of waters and waste water treatment technologies.
CO3	To learn the design and working of treatment plants and methods used for liquid and solid waste treatment.
CO4	To impart the understanding of kinetics of biological systems used in waste treatment.
CO5	To learn the standards of waste management and competent authorities involved at National and international level.
Course Code: MB 3610	**TYBSc- Name of paper:Nano-biotechnology and Nano-Biotechnology practical**
CO1	To understand design, development and application of Nanomaterials and their application in Nanodevices.
CO2	To learn fundamentals of nanotechnology as to Synthesis and characterization techniques of nanoparticles.
CO3	To acquire knowledge of applications of nanomaterials in different disciplines of human life.
CO4	To compare the merits of using nanotechnology with existing technologies.
12) Program: B. Sc. (Physics)	
Course Code: PHY111	**FYBSc- Paper-I Section -I MECHANICS**

	On successful completion of this course students will be able to do the following
CO1	Demonstrate an understanding of Newton's laws and applying them in
CO2	calculations of the motion of simple systems.
CO3	Use the free body diagrams to analyze the forces on the object
CO4	Understand the concepts of energy, work, power, the concepts of conservation of energy and be able to perform calculations using them.
CO5	Understand the concepts of elasticity and be able to perform calculations using them.
CO6	Understand the concepts of surface tension and viscosity and be able to perform calculations using them.
CO7	Use of Bernoulli's theorem in real life problems.
CO8	Demonstrate quantitative problem solving skills in all the topics covered.
Course Code:PHY122	**FYBSc-PaperI: Section II: HEAT AND THERMODYNAMICS**
	After successfully completing this course, the student will be able to do the following:
CO1	Describe the properties of and relationships between the thermodynamic properties of a pure substance.
CO2	Describe the ideal gas equation and its limitations.
CO3	Describe the real gas equation.
CO4	Apply the laws of thermodynamics to formulate the relations necessary to analyze a thermodynamic process.

CO5	Analyse the heat engines and calculate thermal efficiency.
CO6	. Analyze the refrigerators, heat pumps and calculate coefficient of performance.
CO7	Understand property 'entropy' and derive some thermo dynamical relations using entropy concept.
CO8	Understand the types of thermometers and their usage.
Course Code:PHY112	**FYBSc- Paper-II Section I:PHYSICS PRINCIPLE AND APPLICATIONS.**
	On successful completion of this course students will be able to do the following:
CO1	To demonstrate an understanding of electromagnetic waves and its spectrum.
CO2	Understand the types and sources of electromagnetic waves and applications.
CO3	To understand the general structure of atom, spectrum of hydrogen atom.
CO4	To understand the atomic excitation and LASER principles.
CO5	To understand the bonding mechanism in molecules and rotational and
CO6	To demonstrate quantitative problem solving skills in all the topics covered.
Course Code: PHY122	**FYBSc-Papre II Section II : ELECTROMAGNETIC**
	On successful completion of this course students will be able to do the following:
CO1	Demonstrate an understanding of the electric force, field and potential, and related concepts, for stationary charges.

CO2	Calculate electrostatic field and potential of simple charge distributions using Coulomb's law and Gauss's law.
CO3	Demonstrate an understanding of the dielectric and effect on dielectric due to electric field.
CO4	Demonstrate an understanding of the magnetic field for steady currents using Biot-Savart and Ampere's laws.
CO5	Demonstrate an understanding of magnetization of materials.
CO6	Demonstrate quantitative problem solving skills in all the topics covered.
Course Code:PHY113-A	**FYSC- Paper-III: Physics Practical.**
	After successfully completing this laboratory course, the students will be able to do the following:
CO1	Acquire technical and manipulative skills in using laboratory equipment, tools,and materials.
CO2	Demonstrate an ability to collect data through observation and/or
CO3	experimentation and interpreting data.
CO4	Demonstrate an understanding of laboratory procedures including safety, and scientific methods.
CO5	Demonstrate a deeper understanding of abstract concepts and theories
CO6	gained by experiencing and visualizing them as authentic phenomena.
CO7	Acquire the complementary skills of collaborative learning and teamwork in laboratory settings.
Course Code: PHY211	**SYBSc- Paper I SemI :Mathematical Methods In Physics.**

	After the completion of this course students will be able to
CO1	Understand the complex algebra useful in physics courses
CO2	Understand the concept of partial differentiation.
CO3	Understand the role of partial differential equations in physics
CO4	Understand vector algebra useful in mathematics and physics
CO5	Understand the singular points of differential equation.
Course Code:PHY212	**SYBSc-Paper II Sem I ELECTRONICS.**
CO1	Learning outcomes: On successful completion of this course the students will be able to
	Apply laws of electrical circuits to different circuits.Understand the relations in AC. DC electricity, rectification ,filtration, regulation and designing a power supply.
CO2	Understand the properties and working of transistors.
CO3	Understand the functions of operational amplifiers.
CO4	Design circuits using transistors and operational amplifiers, oscillators.
CO5	Understand the Boolean algebra and logic circuits
Course Code:PHY221	**SYBSc-Paper I Sem-II WAVES OSCILLATIONS AND SOUND.**

	On completion of this course, the learner will be able to:
CO1	Understand the physics and mathematics of oscillations.
CO2	Solve the equations of motion for simple harmonic, damped, and forced oscillators.
	Formulate these equations and understand their physical content in a variety of applications,
CO3	Describe oscillatory motion with graphs and equations, and use these descriptions to solve problems of oscillatory motion.
CO4	Explain oscillation in terms of energy exchange, giving various examples.
CO5	Solve problems relating to undamped, damped and force oscillators and superposition of oscillations.
CO6	Understand the mathematical description of travelling and standing waves.
Course Code: PHY222	**SYBSc- Paper-II Sem II :OPTICS**
	This course will enable you to: Acquire the basic concepts of wave optics.
CO1	Describe how light can constructively and destructively interfere
CO2	Explain why a light beam spreads out after passing through an aperture
CO3	Summarize the polarization characteristics of electromagnetic waves
CO4	Appreciate the operation of many modern optical devices that utilize wave
	optics

CO5	Understand optical phenomena such as polarization, birefringence,
	interference and diffraction in terms of the wave model.
CO6	Analyze simple examples of interference and diffraction phenomena.
CO7	Be familiar with a range of equipment used in modern optics.
Course Code: PHY223	**SYBSc-Paper-III: Physics Practical.**
	After completing this practical course students will be able to
CO1	Use various instruments and equipment
CO2	Design experiments to test a hypothesis and/or determine the value of an unknown quantity.
CO3	Investigate the theoretical background to an experiment.
CO4	Set up experimental equipment to implement an experimental approach.
CO5	Analyse data, plot appropriate graphs and reach conclusions from your data analysis.
CO6	Work in a group to plan, implement and report on a project/experiment.
CO7	Keep a well-maintained and instructive laboratory logbook.

13) Program: B. Sc. (Mathematics)	
Course Code: MT -111	**FYBSc- Paper-I -Sem I- Algebra**
	On successful completion of this course students will be able to do the following
CO1	Understand the concept of sets, relation and function as well as interrelation in between them.
CO2	understand the cocepts of equivalence relations and equivalence classes as well as partition.
CO3	Use of mathematical induction to prove different mathematical results.
CO4	Use of Division algorithm to find the greatest common divisor of any two integers.
CO5	understand the concept of congruence relation.
CO6	Understand the basic concepts such as prime numbers and complex numbers and basic operations on complex numbers.
CO7	Understand how to find roots of complex numbers such as nth root of unity.
Course Code: MT-112	**FYBSc-PaperII: Sem-I: Calculus 1**
	After successfully completing this course, the student will be able to do the following:
CO1	Unsderstand Algebraic and order properties of Real numbers.
CO2	Understand the concept absolute value function and its consequences.
CO3	Understand the concept upper bound , lower bound , infimum, supremum of subsets of real numbers.

CO4	Understand the concept sequences, their limits and convergence of sequence.
CO5	Understand the concept of functions and their graphs and different properties of functions.
CO6	Use of limit to check the continuity and sequential criterian for continuity.
CO7	Use of theorems to find the locations of root of the different functions.
CO8	Understand the concept continuous functions maps closed bounded intervals to closed bounded intervals.
Course Code:MT-121	**FYBSc- Paper-I SemII: Analytical Geometry**
	On successful completion of this course students will be able to do the following:
CO1	Understand the concept Analytical geometry of two dimensions.
CO2	Use of translation and rotation to change the axes.
CO3	Using formulaes easily find out the center of conics and nature of conics.
CO4	Understand the concept of Plane and their properties.
CO5	Understand the concept of lines in three dimension and their properties.
CO6	Understand the conics ,sphere and their properties.
Course Code: MT-122	**FYBSc-Papre II Sem-II Calculus -II**
	On successful completion of this course students will be able to do the following:
CO1	Understand the concept of derivative .

CO2	Use of different theorems and their consequences.
CO3	Understand the use of Taylor's theorem and Maclaurin's theorem to find the series of functions .
CO4	Understand the concept of n th derivative and Leibnitz theorem for successive differentiation.
CO5	Understand the concept of differential equations and their different types and their solutions.
Course Code:MT-113 and 123	**FYBSC- Paper-III: Mathematics Practical.**
	After successfully completing this course, the students will be able to do the following:
CO1	Understand use of maxima software.
CO2	maxima software is better software in android mobile to solve any problem in mathematics by using different commands.
CO3	calculations speed is increased.
CO4	Understand the geometrical meaning of mathematical expressions.
CO5	Learnt use of approprite mathematical formulae and technique in order to process the information and draw the relevant conclusion.
Course Code:MT-231	**SYBSc- Paper I SemI :Calculus of several variables.**
	On successful completion of this course students will be able to do the following:
CO1	They easily find out the domain and range of any function.
CO2	Students easily draw the level curves and graphs of any two and three variable functions.

CO3	Understand the concept of partial differentiation.
CO4	Using differential they find out the approximate value of product as well as roots of any decimal numbers without using calculator.
CO5	Using differentiation they easily find out the extreme values of the given function.
6	Understand the concept of integration.
Course Code:MT-232(A)	**SYBSc-Paper II Sem I - Numerical methods and its application.**
	On successful completion of this course students will be able to do the following:
CO1	Understand the concept of errors and their computations.
CO2	Understand the use of numerical techniques to find the accurate solutions.
CO3	Understand the use of different methods to find the roots any function.
CO4	Understand the use of different operators and their relations.
CO5	Use of different methods to find the numerical solution of first order ODE.
CO6	Understand the concept of numerical differentiation and Integration.
Course Code: MT-241	**SYBSc-Paper I Sem-II -Linear algebra**
	On successful completion of this course students will be able to do the following:
CO1	Understand the basics about the mathematics.

CO2	Understand the concept of matrices and system of linear equations.
CO3	Understand the use of different methods to find the solution of system of equations.
CO4	Understand the concept of vector spaces
CO5	Learnt the concept of Linear dependence and independence of vectors
CO6	Learnt the concept of row space , column space and null space of matrix .
CO7	Understand the concept of linear transformation.
CO8	Learnt the relation between matrices and linear transformation.
CO9	Learnt the concept of linear isomorphism.
Course Code:MT-242(A)	**SYBSc- Paper-II Sem II : Vector Calculus**
	On successful completion of this course students will be able to do the following:
CO1	Learnt the concept curves in a space.
CO2	Understand the concept Integrals of vector functions.
CO3	Recognize basic mathematical concepts and concerned structures.
CO4	Learnt use of approprite mathematical formulae and technique in order to process the information and draw the relevant conclusion.
CO5	They aware about history about the mathematics.

CO6	Learnt the concepts integrals, surface integrals and application of integrals.
Course Code: MT-233 and MT-243	**SYBSc-Paper-III: Mathematics Practical.**
	After completing this practical course students will be able to do the following:
CO1	Understand use of maxima software.
CO2	maxima software is better software in android mobile to solve any problem in mathematics by using different commands.
CO3	calculations speed is increased.
CO4	Understand the geometrical meaning of mathematical expressions.
CO5	Learnt use of approprite mathematical formulae and technique in order to process the information and draw the relevant conclusion.
14) Program: B. Sc. (Zoology)	
Course Code:- ZO-111 & 121	**F.Y.B.Sc. : Animal Diversity I & II**
CO1	The student will be able to understand classify and identify the diversity of animals.
CO2	The student understands the importance of classification of animals and classifies them effectively using the six levels of classification.
CO3	The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.

Course Code:- ZO-112	**F.Y.B.Sc. : Animal Ecology**
CO1	The learners will be able to identify and critically evaluate their own beliefs, values and actions in relation to professional and societal standards of ethics and its impact on ecosystem and biosphere.
CO2	The Learner understands and appreciates the diversity of ecosystems and applies beyond the syllabi to understand the local lifestyle and problems of the community.
CO3	The working in nature to save environment will help development of leadership skills to promote betterment of environment.
CO4	To understand anticipate, analyse and evaluate natural resource issues and act on a lifestyle that conserves nature.
Course Code:- ZO-122	**F.Y.B.Sc. : Cell Biology**
CO1	The learner will understand the importance of cell as a structural and functional unit of life.
CO2	The learner understands and compares between the prokaryotic and eukaryotic system and extrapolates the life to the aspect of development.
CO3	The dynamism of bio membranes indicates the dynamism of life. Its working mechanism and precision are responsible for our performance in life.
CO4	The cellular mechanisms and its functioning depends on endo-membranes and structures. They are best studied with microscopy
Course Code:- ZO-113	**F.Y.B.Sc. : Zoology Practical**
CO1	The student will be able to understand classify and identify the diversity of animals.
CO2	The student understands the importance of classification of animals and classifies them effectively using the six levels of classification.
CO3	The learners will be able to identify and critically evaluate their own beliefs, values and actions in relation to professional and societal standards of ethics and its impact on ecosystem and biosphere due to the dynamics in population.

Course Code:- ZO-123	**F.Y.B.Sc. : Zoology Practical**
CO1	The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.
CO2	The learner will understand the importance of cell as a structural and functional unit of life.
CO3	The learner understands and compares between the prokaryotic and eukaryotic system and extrapolates the life to the aspect of development.
Course Code**: ZO–231 & 241**	**S.Y.B.Sc. : Animal Diversity - III & IV**
CO1	The students will be able to understand, classify and identify the diversity of higher vertebrates.
CO2	The students will able to understand the complexity of higher vertebrates
CO3	The students will be able to understand different life functions of higher vertebrates.
CO4	The students will be able to understand the linkage among different groups of higher vertebrates.
CO5	The student will become aware regarding his role and responsibility towards nature as a protector, to understand his role as a trustee and conservator of life which he has achieved by learning, observing and understanding life.
Course Code:ZO-232 & 242	**S.Y.B.Sc. : Applied Zoology I and II**
CO1	The learner understands the basics about beekeeping tools, equipment, and managing beehives.
CO2	The learner understands the basic information about fishery, cultural and harvesting methods of fishes and fish preservation techniques.

CO3	The learner understands the biology, varieties of silkworms and the basic techniques of silk production.
CO4	The learner understands the types of agricultural pests, Major insect pests of agricultural importance and Pest control practices.
Course Code- ZO – 233	**S.Y.B.Sc. : Zoology Practical**
CO1	The students will be able to understand, classify and identify the diversity of higher vertebrates.
CO2	The students will able to understand the complexity of higher vertebrates
CO3	The students will be able to understand different life functions of higher vertebrates.
CO4	The students will be able to understand the linkage among different groups of higher vertebrates.
Course Code:ZO – 243	**S.Y.B.Sc. : Zoology Practical**
CO1	The learner understands the basics about beekeeping tools, equipment, and managing beehives.
CO2	The learner understands the basic information about fishery, cultural and harvesting methods of fishes and fish preservation techniques.
CO3	The learner understands the biology, varieties of silkworms and the basic techniques of silk production.
CO4	The learner understands the types of agricultural pests, Major insect pests of agricultural importance and Pest control practices.
15) Program: B. Sc. (Computer)	

Course Code: CS-111	**FY BSc(CS)- Name of Course/paper: Problem solving using Computers and C programming**
CO1	Draw the flowchart and design an algorithm for given problem and to develop programming using operators. Understating basic structure of C programming. Develop C programs by using conditional and iterative statements.
CO2	Choose the loops and decision making statements to solve the problem. Exercise user defined functions to solve real time problems
CO3	Exercise user defined data types including structures and unions to solve problems. Exercise file concepts to show input and output of files in C.
CO4	Solving C programs that use conditional statements, control structures, arrays, functions, strings, files, commandline arguments.
Course Code: CS-112	**FY BSc(C.S.)- Database Management Systems**
CO1	Solve real world problems using appropriate set, function, and relational models.
CO2	Principles of Databases
CO3	Design E-R Model for given requirements and convert the same into database tables.
Course Code: CS-113	**FY BSc(C.S.)- Practical course based on CS101 and**
	CS102
CO1	Programming on basic C
CO2	Practical knowledge on DBMS
Course Code: MTC-111	**FY BSc(C.S.)- Matrix Algebra**

CO1	To understand the basic components in electronics with their symbol, working principle and classifications. Demonstrate quantitative problem solving skills in all the topics covered
CO2	Understand the basic characteristics and operation of semiconductor devices such as p-n junctions and Zener diodes, LED etc.
CO3	Understand the basic concepts of Transistor and its configurations. basic construction, equivalent circuits and characteristics of unipolar devices such as UJT,JFET and MOSFET
Course Code: MTC 112	**FY BSc(C.S.)- Discrete Mathematics**
CO1	A students should be able to work with graphs and identify certain parameters and
	properties of the given graphs.
CO2	A students should be able to perform certain algorithms, justify why these algorithms
	work, and give some estimates of the running times of these algorithms.
Course Code: MTC 113	**Mathematics Practicals**
CO1	A students should be able to work with graphs and identify certain parameters and
	properties of the given graphs
CO2	A students should be able to perform certain algorithms, justify why these algorithms
	work, and give some estimates of the running times of these algorithms.
Course Code: ELC-111	**FYBA BSc (C.S.)- Semiconductor**
	Devices and Basic

	Electronic Systems
CO1	To Comprehend Number Systems and Binary codes. Interconversion of different No. Systems and concept of complements.
	Concept of binary logic, function of logic gates , basic digital circuits and use of logic gates to perform Boolean logic.
CO2	Use of Boolean Algebra ,Boolean Function, Implementation ,Karnaugh map and different theorems for simplification of digital circuits.
CO3	Identification of Symbols, Truth tables and working Principles of basic digital electronic circuits for data processing circuits.
Course Code: ELC-112	**FY BSc (CS)-Principles of Digital**
	Electronics
CO1	To familiarize with current and recent technological developments.
CO2	To enrich knowledge through activities such as industrial visits, seminars, projects
	etc.
Course Code: ELC-112	**FY BSc (CS)-Electronics Lab IA**
CO1	To create foundation for research and development in Electronics/ Computer Science.
CO2	To develop analytical abilities towards real world problems
CO3	To help students to build-up a progressive and successful career.
Course Code: CSST 111	**FYB.Sc(CS)- : Descriptive Statistics I**

CO1	Develop skills in presenting quantitative data using appropriate diagrams, tabulations and summaries and Fundamental statistical measures: Average, median, mode, mean, absolute deviations.
CO2	How to calculate and apply measures of location and measures of dispersion -- grouped and ungrouped data cases. Use appropriate statistical skewness and kurtosis methods in the analysis of simple datasets
CO3	To give general idea to distinct value of the random variable for each distinct variable and To study Random variables and their distributions:uniform, binomial, Bernoulli, Poisson, geometric
CO4	Calculate and interprete coefficient of correlation and determination and
	Bivariate and Multivariate Regression and Correlation. To understand real life situations of time series
Course Code: CSST 112	**FYB.Sc(CS)- : Mathematical Statistics**
CO1	To understand revision of theory of probability and advance theory of probability
CO2	Learn random variables and continuous probability distributions.
CO3	Learn about the large and small sample test and non parametric test.
Course Code: CSST 113	**FYB.Sc(CS)- :Statistics Practical Paper I**
CO1	To compute various measures of central tendency, dispersion, Skewness and kurtosis.
CO2	To fit the Binomial and Poisson distributions.
Course Code: CS 121	**FYB.Sc(CS)- :Advanced 'C' Programming**
CO1	To study advanced concepts of programming using the 'C' language.
CO2	To work with files.

Course Code:122	**FYB.Sc(CS)- :Relational Database Management Systems**
CO1	Explain transaction Management in relational database System.
CO2	Use database techniques such as SQL & PL/SQL.
CO3	Design E-R Model for given requirements and convert the same into database tables.
Course Code:123	**FYB.Sc(CS)- :Practical course based on CS201 and CS202**
CO1	Write, debug and execute programs using advanced features in 'C'.
CO2	To perform advanced data structure operations.
Course Code:MTC-121	**FYB.Sc(CS)- :Linear Algebra**
CO1	**Study of vector**
CO2	Orthogonality and Symmetric Matrices
CO3	The Geometry of vector spaces
Course Code:MTC-122	**FYB.Sc(CS)- :Graph Theory**
CO1	Connected graph,tree
CO2	Introduction to graph

Course Code:MTC-123	**FYB.Sc(CS)- :Mathematics Practical**
CO1	Practical based on the applications of articles in MTC- 121 and MTC- 122
Course Code:ELC-121	**FYB.Sc(CS)- :Instrumentation System**
CO1	To create foundation for research and development in Electronics/ Computer Science.
CO2	To enrich knowledge through activities such as industrial visits, seminars, projects etc.
Course Code:ELC-122	**FYB.Sc(CS)- :Basics of Computer Organisation**
CO1	To train students in skills related to computer industry and market.
CO2	To develop analytical abilities towards real world problems
Course Code:ELC-123	**FYB.Sc(CS)- :Electronics Lab IB**
CO1	To help students to build-up a progressive and successful career.
CO2	To develop analytical abilities towards real world problems
Course Code:CSST121	**FYB.Sc(CS)- :Methods of Applied Statistics**
CO1	**To tabulate and make frequency distribution of the given data.**
CO2	To use various graphical and diagrammatic techniques and interpret.
Course Code:CSST122	**FYB.Sc(CS)- :Continuous Probability Distributions and Testing of Hypothesis**
CO1	To compute various measures of central tendency, dispersion, Skewness and kurtosis.

CO2	To fit the Binomial and Poisson distributions.
Course Code:CSST123	**FYB.Sc(CS)- :Statistics Practical Paper II**
CO1	To compute the measures of attributes.
CO2	The process of collection of data, its condensation and representation for real life data.
Course Code: CS 231	**SYB.Sc. (CS) :-Data Structures and Algorithms – I**
CO1	Improve student skill in basic data types in 'C'
CO2	Efficiently use searching and sorting methods
CO3	Improve knowledge of data structures like Linked list, Tree, Graph and Queue
CO4	Developing various data structure programs
Course Code: CS 232	**SYB.Sc. (CS):- Software Engineering**
CO1	Undestood the System Analysis and Design
CO2	Undestood the Software and Software Engineering
CO3	Undestood the Requirements Engineering
Course Code: CS 233	**SYB.Sc. (CS):- Practical course on CS 231 and CS 232**
CO1	Write, debug and execute programs using advanced features in 'C'.
CO2	To perform advanced data structure operations.

Course Code: ELC-231	**SYB.Sc.(CS):- Microcontroller Architecture & Programming**
CO1	Understand design of combinational and counter circuits using K map.
CO2	Understand basics of Memory organization
CO3	Understand basic computer organization
CO4	Understand microprocessor and its development.
Course Code: ELC-232	**SYB.Sc.(CS):- Analog System**
CO1	To list various sensors with their construction ,working principles, and features. Also find the use of these sensors for measurement of various Physical parameters.
CO2	To find the role of different conditioning circuits.
CO3	Concept and construction of various data converters types and their applications in various fields.
CO4	To apply knowledge of above modules to build real life system in different applications.
Course Code: ELC-233	**Practical Course I**
CO1	To design and build his/her own microcontroller based projects.
CO2	To acquire skills of Embedded C programming
Course Code: MTC-231	**SYB.Sc. (CS) Applied Algebra**
CO1	Student will learn real vector space along with basis , rank and nullity. Learn the concept of finding Eigenvalue and eigenvector for diagonalization.

CO2	Understand the concept of linear transformation and find the kernel and range.
CO3	Concepts of groups and it's types. Learn the coding and decoding techniques with public key cryptography.
CO4	To apply the course contains by Scilab and C-programming.
Course Code: MTC-232	**SYB.Sc. (CS) : Numerical Techniques**
CO1	Analyze the Finite difference- Forward andbackward difference table
CO2	Apply the Interpolation methods for solving the problems numerically Apply the numerical methods to solve nonlinear equations. Construct numerical methods to solve ordinarydifferential equations
CO3	Define Numerical differentiation and numerical integration, errors and accuracy
CO4	To apply the course contain by Scilab & C- Programming
Course Code: MTC-233	**Mathematics Practical: Python Programming Language-I**
CO1	A students should be able to perform certain algorithms, justify why these algorithms
CO2	A students should be able to work with graphs and identify certain parameters
Course Code:CS 241	**SYB.Sc. (CS) :Data Structures and Algorithms – II**
CO1	To use well-organized data structures in solving various problems.
CO2	To differentiate the usage of various structures in problem solution.
CO3	Implementing algorithms to solve problems using appropriate data structures

Course Code: CS 222	**SYB.Sc. (CS) :Computer Networks - I**
CO1	To understand the organization of computer networks, factors influencing computer network development and the reasons for having variety of different
CO2	To design a network routing for IP networks and to explain how a collision occurs and how to solve it
CO3	To demonstrate proper placement of different layers of ISO model and illuminate its function. To learn Internet structure and can see how standard problems are solved in that context.
Course Code: CS 222	**SYB.Sc. (CS) :Practical course on CS 241 and CS 242**
CO1	To perform advanced data structure operations on tree, graph,hastable.
CO2	Student able to make small project
Course Code: ELC-241	**SYB.Sc. (CS) :Embedded System Design**
CO1	Able to differentiate microcontroller and microprocessor to describe the architecture of 8051
CO2	Able to write simple assembly language program and C program for 8051 .
CO3	Able to study and write interface programming.
CO4	To understand the basic concepts of advanced Microcontrollers.
Course Code: ELC-242	**SYB.Sc. (CS) :Wireless Communication and Internet of Things**
CO1	Understand the basic concept of communication system.
CO2	Understand AM , FM and demodulation.

CO3	Understand basic concept of digital communication system.
CO4	Understand antenna and wireless communication system
Course Code: ELC-243	**SYB.Sc. (CS) :Practical Course II**
CO1	To know multiplexing and modulation techniques useful in developing wireless application
CO2	Do build and test own network and do settings.
Course Code: MTC-241	**SYB.Sc. (CS) :Computational Geometry**
CO1	To apply the concept of two dimensional transformation for rotation, reflection, shearing, scaling of any point in 2D space.
CO2	Students analyze 3 dimensional space along with the concept of Projection and types of projection (transformation of (n+1)-dimension to n-dimension).
CO3	To learn generation of points on a curve using Circle, Ellipse, Parabola and Hyperbola. The concept of generating n numbers of points on Bezier's curve.
Course Code: MTC-242	**SYB.Sc. (CS) :Operations Research**
CO1	Identify and develop operational research models from the verbal description of the real system.
CO2	Use mathematical software to solve the Simplex Method proposed models .
CO3	Understand the mathematical tools that are needed to solve optimisation problems.
Course Code: MTC-243	**Mathematics Practical: Python Programming Language-II**
CO1	To apply the course contain by Scilab & C- Programming.

CO2	To apply the course contains by Scilab and C-programming.
Course Code: CS - 351	**T.Y. B.Sc.(C.S.)- Name of Course/paper: Operating Systems – I**
CO1	Processes and Thread Scheduling by operating system.
CO2	Synchronization in process and threads by operating system.
CO3	Memory management by operating system using with the help of various schemes.
Course Code: CS - 352	**T.Y. B.Sc.(C.S.)- Name of Course/paper:Computer Networks - II**
CO1	Student will understand the different protocols of Application layer.
CO2	Develop understanding of technical aspect of Multimedia Systems.
CO3	Develop various Multimedia Systems applicable in real time.
CO4	Identify information security goals.
CO5	Understand, compare and apply cryptographic techniques for data security.
Course Code: CS - 353	**T.Y. B.Sc.(C.S.)- Name of Course/paper:Web Technologies - I**
CO1	Understand how to develop dynamic and interactive Web Page.
CO2	Learn Core-PHP, Server Side Scripting Language.
CO3	Learn PHP-Database handling.
Course Code: CS - 354	**T.Y. B.Sc.(C.S.)- Name of Course/paper: Foundations of Data Science**

CO1	Perform Exploratory Data Analysis
CO2	Obtain, clean/process, and transform data.
CO3	Detect and diagnose common data issues, such as missing values, special values, outliers, inconsistencies, and localization.
CO4	Demonstrate proficiency with statistical analysis of data.
CO5	Present results using data visualization techniques.
CO6	Prepare data for use with a variety of statistical methods and models and recognize how the quality of the data and the means of data collection may affect conclusions.
Course Code: CS - 355	**T.Y. B.Sc.(C.S.)- Name of Course/paper: Object Oriented Programming using Java - I**
CO1	Understand the concept of classes, object, packages and Collections.
CO2	Learn Object Oriented Programming language.
CO3	Design User Interface using Swing and AWT
CO4	To develop GUI based application.
Course Code: CS - 356	**T.Y. B.Sc.(C.S.)- Name of Course/paper: Theoretical Computer Science**
CO1	Understand the use of automata during language design.
CO2	Relate various automata and Languages.
CO3	Understand the relation between Automaton and Language

CO4	Understand the Regular Language, Context Free Language, Context Sensitive Language and Unrestricted Language.
Course Code: CS - 357	**T.Y. B.Sc.(C.S.)- Name of Course/paper: Practical Course based on CS - 351**
CO1	Process synchronization
CO2	Processes and Thread Scheduling by operating system
CO3	Memory management by operating system using with the help of various schemes
CO4	Understand the working of operating system shell.
Course Code: CS - 358	**T.Y. B.Sc.(C.S.)- Name of Course/paper: Practical Course based on CS - 353 and CS - 354**
CO1	Understand how to develop dynamic and interactive Web Page
CO2	Prepare data for use with a variety of statistical methods and recognize how the quality of the data may affect conclusions.
CO3	Apply statistical, data preprocessing and visualization techniques on data sets
CO4	Perform exploratory data analysis
Course Code: CS - 359	**T.Y. B.Sc.(C.S.)- Name of Course/paper: Practical Course based on CS - 355**
CO1	Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.
CO2	Read and make elementary modifications to Java programs that solve real-world problems.
CO3	Validate input in a Java program.

Course Code: CS - 3510	**T.Y. B.Sc.(C.S.)- Name of Course/paper: Python Programming**
CO1	Develop logic for problem solving
CO2	Determine the methods to create and develop Python programs by utilizing the data
CO3	structures like lists, dictionaries, tuples and sets.
CO4	To be familiar about the basic constructs of programming such as data, operations, conditions, loops, functions etc.
CO5	To write python programs and develop a small application project.
Course Code: CS-3511	**T.Y. B.Sc.(C.S.)- Name of Course/paper: Blockchain Technology**
CO1	Learn the fundamentals of Blockchain Technology.
CO2	Learn Blockchain programming
CO3	Basic knowledge of Smart Contracts and how they function.
Course Code: 361	**T.Y. B.Sc.(C.S.)- Name of Course/paper: Operating Systems-II**
CO1	Management of deadlocks and File System by operating system
CO2	Scheduling storage or disk for processes
CO3	Distributed Operating System and its architecture and the extended features in mobile OS.
Course Code: 362	**T.Y. B.Sc.(C.S.)- Name of Course/paper: Software Testing**

CO1	To understand various software testing methods and strategies.
CO2	To understand a variety of software metrics, and identify defects and managing those defects for improvement in quality for given software.
CO3	To design test cases and test plans, review reports of testing for qualitative software.
CO4	To understand latest testing methods used in the software industries.
Course Code: 363	**T.Y. B.Sc.(C.S.)- Name of Course/paper:Web Technologies - II**
CO1	Build dynamic website.
CO2	Using MVC based framework easy to design and handling the errors in dynamic website.
CO3	Learn AJAX to make our application more dynamic.
CO4	Learn Java Script to program the behavior of web pages.
Course Code: 364	**T.Y. B.Sc.(C.S.)- Name of Course/paper:Data Analytics**
CO1	Use appropriate models of analysis, assess the quality of input, and derive insight from results.
CO2	Analyze data, choose relevant models and algorithms for respective applications and association rule mining
CO3	Apply modeling and data analysis techniques to the solution of real world business problems
CO4	Understand different data mining techniques like classification, prediction, clustering and association rule mining
Course Code: 365	**T.Y. B.Sc.(C.S.)- Name of Course/paper:Object Oriented Programming using Java – II**

CO1	To access open database through Java programs using Java Data Base Connectivity (JDBC) and develop the application.
CO2	Understand and Create dynamic web pages, using Servlets and JSP.
CO3	Work with basics of framework to develop secure web applications.
Course Code: 366	**T.Y. B.Sc.(C.S.)- Name of Course/paper:Compiler Construction**
CO1	Understand the process of scanning and parsing of source code.
CO2	Learn the conversion code written in source language to machine language.
CO3	Understand tools like LEX and YACC.
Course Code: 367	**T.Y. B.Sc.(C.S.)- Name of Course/paper: Practical Course based on CS - 361**
CO1	Management of deadlocks by operating system.
CO2	File System management.
CO3	Disk space management and scheduling for processes.
Course Code: CS - 368	**T.Y. B.Sc.(C.S.)- Name of Course/paper:Practical Course based on CS - 363 and CS - 364**
CO1	Build dynamic website.
CO2	Using MVC based framework easy to design and handling the errors in dynamic website.
CO3	Learn Java Script to program the behavior of web pages.

Course Code: 369	**T.Y. B.Sc.(C.S.)- Name of Course/paper:Practical Course based on CS - 365**
CO1	To Learn database Programming using Java
CO2	Understand and Create dynamic web pagesusing Servlets and JSP.
CO3	Work with basics of framework to develop secure web applications
Course Code: CS - 3610	**T.Y. B.Sc.(C.S.)- Name of Course/paper:Software Testing Tools**
CO1	To understand various software testing methods and strategies.
CO2	To understand a variety of software metrics and identify defects and managing those defects for improvement in quality for given software.
CO3	To design test cases and test plans, review reports of testing for qualitative software.
CO4	To understand latest testing tools used in the software industries.
Course Code: CS - 3611	**T.Y. B.Sc.(C.S.)- Name of Course/paper: Project**
CO1	Apply programming knowledge to develop a project
CO2	Design requires UML Diagrams
CO3	Perform Testing on coding
16) Program: B.B.A. (C.A.)	

Course Code: ---101	**FYBBA[C.A.] - Business Communication**
CO1	Students should understand the concept, importance and process of communication
CO2	Students shall enhance the ability to communicate and write effectively
CO3	Students should aware about various media of communication
CO4	Students should understand the concept, importance the use of business correspondence
CO5	Shtudent should get aware with the use and benefits of use of technology in communication
CO6	Students should get familiar with job seeking skills.
Course Code: ---102	**FYBBA[C.A.] -Principle of Management**
CO1	Students should understand "what is Management", which is a basic concept in Management.
CO2	Students should understand types of Management and actual contribution of inventing management Concept.
CO3	Students should know each and every function of management and its implementation in industry.
CO4	Students should understand what is Strategy and its management.They should also know the recent trends in Management.
Course Code: ---103	**FYBBA[C.A.] - C Language**
CO1	Students should understand Fundamental of 'C' Language, Tokans and Operators
CO2	Console Input Output Functions and Operations

CO3	Decision making and looping Statements
CO4	Execution of functions and pointers
CO5	Concepts of arrays and functions
CO6	Students should understand Structure and union
CO7	C Processor, Macros, File Handling
Course Code: ---104	**FYBBA[C.A.] - Database Management System**
CO1	Students will learn basic file organisation & indexing
CO2	Student will learn application of dbms & users of dbms
CO3	Student will learn keys & Relational algebra operation
CO4	Student will learn how SQL queries are write
CO5	Student will learn what is normalization
Course Code: ---105	**FYBBA[C.A.] - Statistics**
CO1	Student will learn how to use different functions in excel
CO2	Student will learn to find permutation & combination
CO3	Student will learn what is probability & exampls on probability
CO4	Student will learn standard discrete distribution

CO5	Student will learn simulation techniques
Course Code: ---106	**FYBBA[C.A.] - Lab Course**
CO1	Students should understand the basic implementation of C Programming and DBMS
Course Code: ---107	**FYBBA[C.A.] - Add-On PPA**
CO1	Students should understand basics of Algorithms and Flowchart with examples
CO2	Students should understand basics of mathematics with Algorithms
CO3	Students should understand how to write algorithms and flowcharts and how to dry run it.
CO4	Concepts of Arrays, Searching and sorting
Course Code: ---201	**FYBBA[C.A.] - Organization Behavior & Human Resource Management**
CO1	Students should understand Goals of Organizational Behavior, merging aspect of Organizational behavior.
CO2	Students should understand the actual effects of employee attitude, Personal and Organizational Values, Nature and Importance of Motivation, Theories of Motivational persons.
CO3	Students should know the definition of Personality, Determinants of Personality
CO4	Students should understand the concept of Stress, Sources of Stress, Type A and Type B Assessment of Personality, Causes of stress in organization
CO5	Students should know the actual concept of Conflict, Process of Conflict and also different Types of Conflict.
CO6	Students should know nature of Group, Types of Groups Team Building & Effective Teamwork Goals of Organizational Change, resistance.

Course Code: ---202	**FYBBA[C.A.] - Financial Accounting**
CO1	Student will be able to understand the basic concepts of financial accounting
CO2	Student will be able to understand accounting concepts and conventions
CO3	Student get the knowledge about recording of transactions and preparation of final accounts
CO4	Students will study the accounting software packages
Course Code: ---203	**FYBBA[C.A.] - Business Mathematics**
CO1	Student will understand the concept of ratio properties & percentage in business
CO2	Student will understand the concept & application of prifit & loss in business
CO3	Student will understand diffrence between effective & nominal rate of interest. To enable to calculate EMI
CO4	Student will understand application of matrices in business
CO5	Student will understand to formulate the problem as L.P.P. To obtain the best solution using graphical method
CO6	Student will give a solution to transportation problem which satisfies the total availability & total requirements at variuos sources & destination,so as to minimise the cost
Course Code: ---204	**FYBBA[C.A.] -Relational database**
CO1	Student will learn what is basic diffrence between RDBMS & DBMS
CO2	Student will learn data types,cursor,function,trigger,procedure

CO3	Student will learn what is transaction management& how deadlock is detected
CO4	Student will learn how concurrency is control
CO5	Student will learn how recovry is occur in rdbms
Course Code: ---205	**FYBBA[C.A.] - Web Technology HTML-JS-CSS**
CO1	To know the basic of Internet and different Protocols.
CO2	Students should understand the basic concept of internet and its related languages
CO3	Students should understand web programming languages like JavaScript-CSS and its programming
CO4	Students should know each and every function of php language
CO5	Students should know the functions and string in HTML.
CO6	Students should know the basics of HTML
Course Code: ---206	**FYBBA[C.A.] - Lab Course**
CO1	Students should understand the basic implementation of Web Technology JS-CSS and RDBMS
Course Code: ---207	**FYBBA[C.A.] - Add-On Advance C**
CO1	Students should understand Advance Concept of C Programming
CO2	Students should understand Hardware Communication unsing C
CO3	Students should understand Graphics in C

Course Code: ---301	**SYBBA[C.A.] - Digital Marketing**
CO1	Student will learn what is the social media
CO2	Student will learn how to marketing through social media
CO3	Student will learn what is difference between Real Marketing and Social Marketing
CO4	Student will learn About Search Engines.
CO5	Student will learn how to calculate digital marketing budgest
Course Code: ---302	**SYBBA[C.A.] - Data Structure**
CO1	Students should understand ADT, Polynomial, DMA, Complexity, Arrays
CO2	Execution of Searching and sorting
CO3	Students should understand and write the program on Linked List
CO4	Students should understand how to execute and write the concepts of Data Structure like Stack, Queue
CO5	Operation on Tree and Graph, Adjacency Matrix, Spanning Tree
Course Code: ---303	**SYBBA[C.A.] -Software Engineering**
CO1	Students should understand "what is Software", which is a basic concept in software development.
CO2	Students should understand the different methods of information gathering.
CO3	Students should understand the characteristics and qualities of software

CO4	Students should know each and every methodology of software development.
CO5	Students should know which tools are used to draw software prototype like DFD,ERD etc
CO6	Students should understand the Modules Concepts and Types of Modules like coupling and cohesion.
CO7	Students should study the different software testing techniques.
Course Code: ---304	**SYBBA[C.A.] - PHP / Angular - JS**
CO1	Students should understand how to devleop websites unsing PHP / Angular JS
CO2	Students should understand Structure of PHP / Angular JS
CO3	Students should understand how to deal with database through PHP / Angular JS
CO4	Students should understand what is XML and how to deal with it using PHP / Angular JS
CO5	Students should understand what is web service and how to create, call it using PHP / Angular JS
CO6	Students should understand the model and implement of Ajax
Course Code: ---305	**SYBBA[C.A.] -Big Data / Block Chain**
CO1	Students should understand about Big Data / Block Chain
CO2	Students should understand about Data Science / Bitcoins
CO3	Students should understand Machine Learning Concepts / Ethereum network
CO4	Students should understand Implementation of R Programing

Course Code: ---306	**SYBBA[C.A.] - Lab Course**
CO1	Students should understand the basic implementation of Data Structure, PHP / Angular JS and R Programming / Block Chain
Course Code: ---307	**SYBBA[C.A.] - Environment Awareness**
C01	To know the awarness about Envirnmental Studies.
C02	To know the awarness about Multidisciplinary nature of environmental studies
C03	To visit Envirnmental assests.
Course Code: 401	**SYBBA[C.A.] - Networking**
CO1	Students should understand the actual meaning of networking, their types, different topologies and also different communication modes and protocols.
CO2	Students should understand types different models like ISO/OSI, TCP/IP and addressing concept.
CO3	Students should understand different types of transmission media like wired and wireless media.
CO4	Students should understand the concept of Ethernet, IEEE standard and wireless LAN and functions of NIC card and their types.
CO5	Students should understand different types of connectivity devices like HUB,SWTICH,ROUTER,REPEATER,GATEWAY etc.
CO6	Students should concept of internet.working style of internet and their protocols.
Course Code: 402	**SYBBA[C.A.] - Object Oriented Concepts Through CPP**
CO1	Student will learn basic concept of object oriented programming

CO2	Student will learn basic datatype of c++ & how to write c++ programs
CO3	Student will learn how fuction is call & write what is call by value & call by reference
CO4	Student will learn how class & object is created .constructor & their types
CO5	Student will learn what is inheritance & program on inheritance
CO6	Student will learn function overloading & operator overloading
CO7	Student will learn how I/O operation are done
CO8	Student will learn how file is created & operations are performed on file
CO9	Student will learn what is template
Course Code: 403	**SYBBA[C.A.] - Operating System**
CO1	Students should understand "what is operating system".
CO2	Students should understand types and structure of an operating system
CO3	Students should know how operating system actually deals with process
CO4	Students should know how does the process is scheduled with the help of scheduling algorithm.
CO5	Student should understand how process is synchronized in operating system
CO6	Student should understand what is deadlock and how to deal with it using algorithms.
CO7	Student should understand how operating system manages memory.

CO8	Student should understand how operating system manages File System and way to access files.
CO9	Student should understand various types of disk scheduling algorithm
Course Code: 404	**SYBBA[C.A.] - Advance PHP / Node - JS**
CO1	Students should understand Advanced Concepts of PHP
CO2	Students should understand Web Techniques
CO3	Students should understand about XML
CO4	Students should understand Ajax
CO5	How works on joomla/Druple
CO6	Students should understand Advanced Concepts of Node JS
CO7	Students should understand Database Connectivity
Course Code: 405	**SYBBA[C.A.] - PROJECT WORK**
CO1	Students should understand RDBMS and SDLC Process
CO2	Students should understand to create the Application and how to deploy it
Course Code: 406	**SYBBA[C.A.] - Lab Course**
CO1	Students should understand the basic implementation of c++ Programming, and Advanced PHP / Node JS
Course Code: ---501	**TYBBA[C.A.] - Cyber Security**

CO1	Students should understand the basic idea function and components of e commerce.
CO2	Students shall understand the benefits of Security
CO3	Students should aware about the internet- extranet and its adv .to business
CO4	Students should get familiar with various modes of electronic payment.
CO5	Students shall understand how to protect internet communication.
CO6	Students shall understand various Security threatsof Cyber Crimes
Course Code: ---502	**TYBBA[C.A.] -Object Oriented Software Engineering**
CO1	Studentswill learn to study concept of bject oriented system development & basic concepts of UML
CO2	Student will understand basic structural modeling & classes & objects diagrams
CO3	Student will learn various types of diagrams like sequence,collaboration,activity diagram
CO4	Student will learn Rational Unified Process,Inception,Elaboration concepts
CO5	Student will learn object oriented methods like Booch,Coad & Yourdon,Rambaugh etc
Course Code: ---503	**TYBBA[C.A.] - Core Java**
CO1	Students should understand the basic implementation of oops concept in java language.
CO2	Students should understand how to implement collection in java language
CO3	Students should how to deal with files and exception using java

CO4	Students should how to implement GUI using applet and swing.
Course Code: ---504	**TYBBA[C.A.] - MongoDB or Python**
CO1	Students will learn basic file organisation & indexing
CO2	Student will learn application of dbms & users of dbms
CO3	Student will learn keys & Relational algebra operation
CO4	Student will learn how SQL queries are write
CO5	Student will learn what is normalization
Course Code: ---505	**TYBBA[C.A.] - Project Work**
CO1	Students should understand RDBMS and SDLC Process
CO2	Students should understand to create the Application and how to deploy it
Course Code: ---506	**TYBBA[C.A.] - Lab Course**
CO1	Students should understand the basic implementation of Core java, and Mongo DB or Python
Course Code: 601	**TYBBA[C.A.] - Recent Trends in IT**
CO1	Students should understand Software Process and Project Matrices
CO2	Students should understand Distributed Database and case studies.
CO3	Data Warehousing and Data Mining

CO4	Cryptography, Encryption, Digital Signatures and Network Security
CO5	Computing (Cloud, Green, Soft, Mobile) and case study
Course Code: 602	**TYBBA[C.A.] - Software Testing**
CO1	Student will learn what is software testing & nature of errors
CO2	Student will learn what is white,black,grey &unit testing
CO3	Student will learn testing GUI's ,Documentation,real time system
CO4	Student will learn software testing strategies
CO5	Student will learn specialized tesing
Course Code: 603	**TYBBA[C.A.] - Advanced Java**
CO1	Students should understand the core concepts of JDBC and how to interact with database using java
CO2	Students should understand how to implement TCP client server architecture
CO3	Students should understand how to deal with dynamic page using servlet and JSP
CO4	Students should understand Thread and how to implement it for synchronization
CO5	Students should understand what is java bean and how to interact with remote object
Course Code: 604	**TYBBA[C.A.] - Android Programming or Dot Net Framework**
CO1	Students should understand Architectures of Android & .Net Programming, concepts of Event Driven

	Programming and Application of Visual Studio
CO2	Students should understand Basic Data types, Operators, Control Structures, Controls and Events
CO3	Students should understand Console and Widows Application with all possible programs.
CO4	Students should understand Android & ADO.Net Architecture and Crystal Reports
CO5	Student will learn specialized tesing
Course Code: 605	**TYBBA[C.A.] - Projecr Work**
CO1	Students should understand Application Process to Devlop
CO2	Students should understand to create the Application and how to deploy it
Course Code: 606	**TYBBA[C.A.] - Lab Course**
CO1	Students should understand the basic implementation of Advance java, and Android or Dot Net Freamework

17) Program: B.Voc. (Tourism and Hospitality Management)

Subject Code: BVT(101)	**FYBVOC Compulsory English (Text-Visionary Gleam)**
CO1	To develop linguistic and pragmatic competence among the students and to prepare them to develop competence for self learning.
CO2	To enable students to communicate effectively in English both in written and spoken modes.

CO3	To impart skill and develop the temper of comprehension.
Subject Code: BVT(201)	**FYBVOC(Tourism and hospitality management)- Compulsory English**
CO1	To introduce basics of English language.
CO2	To develop competence among the students for self-learning
CO3	To aware the students about different perspectives of cultural and social realities.
CO4	To contribute to their overall personality development by improving their communicative and soft skills
Subject Code: BVT 301	**SYBVOC- Compulsory English (Text-Literary Landscapes)**
CO1	To introduce basics of English communication
CO2	To enable understanding the social responsibilities through literary pieces.
CO3	To prepare the students for writing skills in English.
CO4	To aware the students about different perspectives of cultural and social realities.
Subject Code: BVT 401	**SYBVOC- Compulsory English**
CO1	To impart skill and develop the ability among students to use English language.
CO2	To make students aware of different communicative skills
CO3	To enable them to develop competence for self learning
Subject Code: BVT 501	**TYBVOC- Compulsory English (Text-Literary Pinnacles)**

CO1	To develop communication skills and professional ethics
CO2	To aware the students about professional values through literary pieces
CO3	To inculcate soft skills among the students
CO4	To develop linguistic competence through effective communication.
Subject Code: BVT 601	**TYBVOC- Compulsory English**
CO1	To develop Team building spirit in students
CO2	To develop positive attitude among the students
CO3	To enhance Presentation and Leadership skills of students
Course Code: BVT-108	**FYB.VOC- Name of Course/paper: Information Technology**
CO1	Computer Fundamental
CO2	To introduce concepts inInformation about Computer
CO3	In detail information of about Computer
CO4	In detail information of the DOS
Course Code: BVT-105	**FYB.VOC- Name of Course/paper: Local Tourism**
CO1	To introduce the students to the basic concepts toTourism.
CO2	To introduce latest concept in Local Tourism

CO3	To acquaint the students with the utility and application of Local Tourism
CO4	To make the students aware of the different types of the Local Tourism
Course Code: BVT-104	**FYB.VOC- Name of Course/paper: INTRODUCTION TO INDIA**
CO1	To introduce of Basic Introduction of India
CO2	To introduce concepts in Physiography of India
CO3	In detail information of Neburing nations of India
CO4	In detail information of the Physiography of India
Course Code: BVT-103	**FYB.VOC- Name of Course/paper: FUNDAMENTAL OF TOURISM**
CO1	To introduce the students to the basic concepts to Fundamental of Tourism
CO2	To introduce latest concept of their Importance
CO3	To acquaint the students with the utility and application of Fundamental In Tourism
CO4	To make the students aware of about the Tourism
Course Code: BVT-107	**FYB.VOC- Name of Course/paper: Practical on Map Work**
CO1	To introduce the students to the basic concepts of Map Work
CO2	To introduce latest concept of their Importance
CO3	To acquaint the students with the utility and application of Map Work

CO4	To make the students aware of about the Tourism
Course Code: BVT 101	**FYBVOC(Tourism and hospitality management)- Compulsory English (Text-Visionary Gleam)**
CO1	To develop linguistic and pragmatic competence among the students and to prepare them to develop competence for self learning.
CO2	To enable students to communicate effectively in English both in written and spoken modes.
CO3	To impart skill and develop the temper of comprehension.
Course Code: BVT-208	**FYB.VOC- Name of Course/paper:Information Technology**
CO1	Computer Fundamental
CO2	To introduce concepts in Information about Computer
CO3	In detail information of about Computer
CO4	In detail information of the DOS
Course Code: BVT-204	**FYB.VOC- Name of Course/paper: INTRODUCTION TO INDIA**
CO1	Major forest types and theirdistribution in India
CO2	Importance of transportation in tourism and their modes
CO3	In detail information Pilgrim Destinations of India
CO4	In detail information of Fairs and Festivals of India

Course Code: BVT-205	**FYB.VOC- Name of Course/paper: Local Tourism**
CO1	To introduce the students to the basic concepts toTourism.
CO2	To introduce latest concept in Local Tourism
CO3	To acquaint the students with the utility and application of Local Tourism
CO4	To make the students aware of the different types of the Local Tourism
Course Code: BVT-203	**FYB.VOC- Name of Course/paper: FUNDAMENTAL OF TOURISM**
CO1	To introduce of Nature and Scope of Tourism
CO2	To introduce concepts History of Tourism
CO3	In detail information of Tourism Industry
CO4	In detail information of the Physical and cultural factors of Tourism
Course Code: BVT-207	**FYB.VOC- Name of Course/paper: Practical on Map Work**
CO1	To introduce the students to the basic concepts of Map Work
CO2	To introduce latest concept of their Importance
CO3	To acquaint the students with the utility and application of Map Work
CO4	To make the students aware of about the Tourism
Course Code: BVT 201	**FYBVOC(Tourism and hospitality management)- Compulsory English**

CO1	To introduce basics of English language.
CO2	To develop competence among the students for self-learning
CO3	To aware the students about different perspectives of cultural and social realities.
CO4	To contribute to their overall personality development by improving their communicative and soft skills
Course Code: BVT-304	**SYB.VOC- Name of Course/paper:Practical on Map Work**
CO1	To introduce of Basic Introduction of Map
CO2	To introduce concepts in Map Work
CO3	In detail information of Map
CO4	In detail information of the Map
Course Code: BVT-308	**SYB.VOC- Name of Course/paper:Information Technology**
CO1	Computer Fundamental
CO2	To introduce concepts in Information about Computer
CO3	In detail information of about Computer
CO4	In detail information of the DOS
Course Code: BVT-303	**SYB.VOC- Name of Course/paper:Travel & Tourism**
CO1	To introduce the students to the basic concepts toTourism.

CO2	To introduce latest concept in TravelTourism
CO3	To acquaint the students with the utility and application of Travel Tourism
CO4	To make the students aware of the different types of the Travel Tourism
Course Code:BVT 306	**SYB.VOC- Name of Course/paper:INTRODUCTION TO MAHARASHTRA**
CO1	To introduce of Basic Introduction of Maharashtra
CO2	To introduce concepts in Physiography of Maharashtra
CO3	In detail information of Neburing State of Maharashtra
CO4	In detail information of the Physiography of Maharashtra
Course Code: BVT 305	**SYB.VOC- Name of Course/paper:Tourist Destinations in Maharashtra**
CO1	To introduce of Basic Introduction of Maharashtra
CO2	To introduce concepts in Physiography of Maharashtra
CO3	In detail information of Neburing nations of Maharashtra
CO4	In detail information of the Physiography of Maharashtra
Course Code: BVT 301	**SYB.VOC- Name of Course/paper:Compulsory English (Text-Literary Landscapes)**
CO1	To introduce basics of English communication
CO2	To enable understanding the social responsibilities through literary pieces.

CO3	To prepare the students for writing skills in English.
CO4	To aware the students about different perspectives of cultural and social realities.
Course Code: BVT 401	**SYB.VOC- Name of Course/paper:Compulsory English**
CO1	To impart skill and develop the ability among students to use English language.
CO2	To make students aware of different communicative skills
CO3	To enable them to develop competence for self learning
Course Code: BVT-403	**SYB.VOC- Name of Course/paper:Travel & Tourism**
CO1	To introduce the students to the basic concepts toTourism.
CO2	To introduce latest concept in TravelTourism
CO3	To acquaint the students with the utility and application of Travel Tourism
CO4	To make the students aware of the different types of the Travel Tourism
Course Code: BVT-404	**SYB.VOC- Name of Course/paper:Practical on Map Work**
CO1	To introduce of Basic Introduction of Map
CO2	To introduce concepts in Map Work
CO3	In detail information of Map
CO4	In detail information of the Map

Course Code: BVT 405	**SYB.VOC- Name of Course/paper:Tourist Destinations in Maharashtra**
CO1	To introduce of Basic Introduction of Maharashtra
CO2	To introduce concepts in Physiography of Maharashtra
CO3	In detail information of Neburing nations of Maharashtra
CO4	In detail information of the Physiography of Maharashtra
Course Code: BVT-406	**SYB.VOC- Name of Course/paper:INTRODUCTION TO MAHARASHTRA**
CO1	To introduce of Basic Introduction forest of Maharashtra
CO2	To introduce concepts in Soil Formation & types
CO3	In detail information of about Urbanization
CO4	In detail information ofTourist Places in Maharashtra
Course Code: BVT-408	**SYB.VOC- Name of Course/paper:Information Technology**
CO1	Computer Fundamental
CO2	To introduce concepts in Information about Computer
CO3	In detail information of about Computer
CO4	In detail information of the devices
Course Code: BVT 501	**TYB.VOC- Name of Course/paper:Compulsory English (Text-Literary Pinnacles)**

CO1	To develop communication skills and professional ethics
CO2	To aware the students about professional values through literary pieces
CO3	To inculcate soft skills among the students
CO4	To develop linguistic competence through effective communication.
Course Code: BVT-503	**TYB.VOC- Name of Course/paper:INTRODUCTION TO INDIA**
CO1	To introduce of Basic Information of Destination
CO2	To introduce concepts in Tourist Classification
CO3	In detail information of Geographical tourist places
CO4	In detail information of the different Geographical tourist places
CO5	In detail information of the Dams and Lakes of India
Course Code: BVT-508	**TYB.VOC- Name of Course/paper:Dissertation & Viva**
CO1	To introduce of Basic Information of Dissertation
CO2	To introduce concepts of Viva
CO3	In detail information of Making the pri-priparation
CO4	In detail information of fill the quaternary
Course Code: BVT-506	**TYB.VOC- Name of Course/paper:Tourism In Europe**

CO1	To introduce the students to the basic concepts toEurope.
CO2	To introduce latest concept in Tourism In Europe
CO3	To acquaint the students with the utility and application of Tourism In Europe
CO4	To make the students aware of the different types of the Tourism In Europe
Course Code: BVT-507	**TYB.VOC- Name of Course/paper:Tourist Map Designing**
CO1	To introduce the students to the basic concepts of Map Work
CO2	To introduce latest concept of their Importance
CO3	To acquaint the students with the utility and application of Map Work
CO4	To make the students aware of about the Tourism
Course Code: BVT-505	**TYB.VOC- Name of Course/paper:Tourism Marketing**
CO1	To introduce of Basic Information ofMarketing
CO2	To introduce concepts in Tourist Classification
CO3	In detail information of information of Packaging
CO4	In detail information of the different Marketing Strategies
Course Code: BVT 601	**TYB.VOC- Name of Course/paper:Compulsory English (Text-Literary Pinnacles)**
CO1	To develop Team building spirit in students

CO2	To develop positive attitude among the students
CO3	To enhance Presentation and Leadership skills of students
Course Code: BVT-603	**TYB.VOC- Name of Course/paper:INTRODUCTION TO INDIA**
CO1	To introduce of Basic Information ofNational Parks And Sanctuaries of India
CO2	To introduce Archeological Monoments
CO3	In detail information tourist places of Temples
CO4	In detail information tourist places of Forts
Course Code: BVT-605	**TYB.VOC- Name of Course/paper:Tourism marketing**
CO1	To introduce of Basic Information ofMarketing
CO2	To introduce concepts of Travel Formalities
CO3	In detail information of information of Accommodations
CO4	In detail information of the different Marketing Strategies
Course Code: BVT-607	**TYB.VOC- Name of Course/paper:Tourist Map Designing**
CO1	To introduce the students to the basic concepts of Map Work
CO2	To introduce latest concept of their Importance
CO3	To acquaint the students with the utility and application of Map Work

CO4	To make the students aware of about the Tourism
Course Code:BVT-608	**TYB.VOC- Name of Course/paper:Dissertation and Viva**
CO1	To introduce of Basic Information of Dissertation
CO2	To introduce concepts of Viva
CO3	In detail information of Making the pri-priparation
CO4	In detail information of fill the quaternary
Course Code: BVT-606	**TYB.VOC- Name of Course/paper:Tourism In Europe**
CO1	To introduce the students to the basic concepts toEurope.
CO2	To introduce latest concept in Tourism In Europe
CO3	To acquaint the students with the utility and application of Tourism In Europe
CO4	To make the students aware of the different types of the Tourism In Europe
18) Program: B.Voc. (Retail Management)	
Course Code: VR(102)	**FYBVOC Business communication skills -I**
CO1	To enable them to learn about the principles of good communication.

CO2	To create awareness of various methods and types of communication.
CO3	To introduce some advanced units of language so that they become aware of the technical aspects and their practical usage
Course Code: BVR (109)	**FYBVOCBusiness communication skills -II**
CO1	To enable to participate in group discussions and interviews
CO2	To make aware of phonetic aids.
CO3	To develop an understanding of the need and importance of Business correspondence
CO4	To understand how different types of Business letters are drafted.
Course Code: 101	**FY.B.Voc(Retail Management)-Business Communication Skill-I**
CO1	To enable them to learn about the principles of good communication.
CO2	To create awareness of various methods and types of communication.
CO3	To introduce some advanced units of language so that they become aware of the technical aspects and their practical usage
Course Code: 102	**FY.B.Voc(Retail Management)-Principle of Management-I**
CO1	Students will be able to understand concept, process, levels and needs of management.
CO2	Students will get knowledge concept, types, importance and techniques of planning, forecasting, decision-making in the management.
CO3	Students will understand the concept, organization, structure, difficulties in delegation of authority. Also they will get information regarding importance and source of recruitment and stuffing.

CO4	Students will study the techniques and importance of direction. Also they will get knowledge about importance and barriers in effective communication.
Course Code:103	**FY.B.Voc(Retail Management)-Managerial Economics**
CO1	Students will be able to Knowledge in concept of Managerial economics.
CO2	Discuss how to use in practical level of types of elasticity.
CO3	Student understanding in Types of production function and concept of cost.
CO4	Students understood to the types of market and Structure.
Course Code: 104	**FY.B.Voc(Retail Management)-Introduction to Retailing**
CO1	To enable the student about introduction to retail sector , Evolution of retail in india.
CO2	To know about classification of retail organisation in India.
CO3	To impart the knowledge about the Macro aqnd Micro Retail Environment.
CO4	Student would understand the various carrers in retail.
CO5	Student shall get the knowledge about negotiation and time management skills.
Course Code: 105	**FY.B.Voc(Retail Management)-Retail Sales Management-I**
CO1	student will learn about industry size.
CO2	student will get idea about effective sales,sales call and demonstration.
CO3	How to maximise the sales, creating positive image and also inventory methods and management

CO4	how to billing in store and knoe about accounting methods
CO5	student will learn about customer relationship building
Course Code: 106	**FY B Voc - Principle of Consumer Behaviour -I**
CO1	Student Will Learn about Consumer Perception for that conducting stall or management activity.
CO2	Student will Learn Diferent Types of Consumer Behaviour in Market.
CO3	Student Will Learn about Consumer Personality and Lifestlye
CO4	Student will Learn Awareness about Consumer and Behaviour of Consumer.
CO5	Student Will Learn about Motivation of Consumer Behaviour While Conducting Management Activity.
Course Code:201	**FY.B.Voc(Retail Management)-Business Communication-II**
CO1	To enable them to learn about the principles of good organisational communication, .
CO2	To create awareness of various messages , team , cross ,cultural Corporate and leadership communication.
CO3	To introduce the student about writing reports, types and formats of writing reports.
CO4	To acquaint about business etiquette and professionalism.
Course Code: 202	**FY.B.Voc(Retail Management)-Principle of Management-II**
CO1	Students will be able to understand concept ,importance and limitations of behavior of people at workplace.
CO2	Students will get knowledge concept and importance of attitude, motivation and also they will get information about personality and values.

CO3	Students will understand the concept, types, importance of group behavior and managing of teams. Also they will get knowledge of leadership.
CO4	Students will study the concept and various types of organizational system.
CO5	Student will understand the concept , types and nature of organization change. also they will get information about methods, approaches, strategies of organization change.
Course Code: 203	**FY.B.Voc(Retail Management)-Principle of Consumer Behaviour-II**
CO1	Student will get knowledge about consumer decision making
CO2	Student will understand the concept of cosumer satisfaction.
CO3	Student will get idea or information of relatioship marketing and how to maintain relationship with customer
CO4	Student will understand the concept of consumerism.
Course Code: 204	**FY.B.Voc(Retail Management)-Life Skill And Computer Concept**
CO1	student will learn about team management and effective allocation of resposibilities in team.
CO2	student will get idea about effective communication with all stakeholder , time management and personality development.
CO3	To enable the student about Basic Concepts in computer- MS Office Word and MS Office Excel.
CO4	To acquaint the student about MS Office Power Point Presentation.
Course Code: 205	**FY.B.Voc(Retail Management)-Retail Sales Management-II**
CO1	student will learn how to display of products,labelling, replacement and repositioning of products.
CO2	student will get idea about how to play role.

CO3	student will develop the understanding and solving customer problems and communication with them
CO4	How to handle the accidents , health and identification about risk
Course Code: 301	**SY.B.Voc(Retail Management) Business Accounting**
CO1	Student will learn about basic accounting concepts, conventions and principles.
CO2	Student will learn how to prepare the journal,ledgerand trial balance .
CO3	Student will learn how to prepare the Bank Reconciliation statement.
CO4	Student will learn how to prepare the final accounts
CO5	Student will learn how to charge depreciation and depreciation method
Course Code: 302	**SY.B.Voc(Retail Management)-Personality Development & Team Building**
CO2	Students will be able to understand concept and various factors are affected on personality development.
CO3	Students will get knowledge about personality traits. There are including concept ,benefits, consequences of attitude, personality habits, success and how to facing challenges.
CO4	Students will understand the different pillars of personality
CO5	Students will study the concept, importance of team building and importance of effective team communication, monitoring and managing the team.. Also they will get information regarding role of leadership in team management
Course Code: 303	**SY.B.Voc(Retail Management)-Principle of Marketing**
CO1	Student Will Learn about Function of Marketing.
CO2	Student Will Learn about Types of Marketing Classification with the Help of Manegement Activity.

CO3	Student Will Learn about Various roles and Development of Eviroment or Segmentation Marketing.
CO4	Student Will Learn about Market Mix and Selling & Purchasing Activity.
Course Code: 304	**SY.B.Voc(Retail Management)-Internship**
CO1	Student will learn about concept of inventory and management of merchandise management.
CO2	Student will learn about process of monitoring and managing the store performance .
CO3	Student will learn about the Budgetory process and its role in further planning.
CO4	Student will learn about understanding various loyalty schemes and their functioning by organisations.
Course Code: 305	**SY.B.Voc(Retail Management)-Retail Store Operation-I**
CO1	Students will be able to understand concept, importance, types and methods of inventory and merchandising. Also they will get information regarding sales management and visual display
CO2	Students will get knowledge about importance of objective, SMRT goals for managing store performance. Also they will get information regarding importance of managing and monitoring store performance.
CO3	Students will understand the concept , importance and procedure of budget. also they get knowledge about how to create business plan.
CO4	Students will study the concept and importance of customer profiling, how to approach potential client, customer loyalty, target market and customer segmentation.
Course Code: 401	**SY.B.Voc(Retail Management)-Principle of Finance**
CO1	Student will learn about the finance.
CO2	Student will learn about the various function anf financial planning.
CO3	Student will learn about Source of Finance.

CO4	Student will understand clear idea about vanture capital.
Course Code: 402	**SY.B.Voc(Retail Management)-Bsics of Cost Accounting.**
CO1	Student will learn how to prepare cost center and cost unit.
CO2	Student will learn how to prepare cost sheet .
CO3	Student will learn how to prepare budget.
CO4	Student will learn techniques of marginal costing
Course Code: 403	**SY.B.Voc(Retail Management)-Negotiation Skills**
CO1	Student will learn about face to face discussion on use of non verbal communication.
CO2	Student will learn report writing on some do's and don't's of various cultures..
CO3	Student will learn role play on the topic, vocal clues, pitch of speech.
CO4	Student will learn prepare SWOT analysis sheet for themselves and any particular business negotiation.
Course Code: 404	**SY.B.Voc(Retail Management)-Internship**
CO1	Students will be able to understand how to create business planning. also its use in business
CO2	Students will get knowledge about projects and its management. Also they will get information about project audit.
CO3	Students will understand the how to effectively working in team and organization.
Course Code: 405	**SY.B.Voc(Retail Management)-Retail Store Operation-II**

CO1	Students will be able to understand concept, advantages and steps of planning. also get knowledge about the concept, techniques, advantages and limitations of forecasting.
CO2	Students will get knowledge of project lifecycle, project selection, project portfolio process, project budget and process of cost estimation.
CO3	Students will understand the concept of PERT & CPM, types of control process, project audit and its use.
CO4	Students will study the concept, qualities leadership. also understanding the motivating and leading a team, principle of leadership.
CO5	Students will study the concept, importance and how to work effectively in team.also understanding the principles,methods,advantage and disadvantage in allocation of work in team.
Course Code: 301	**TY.B.Voc(Retail Management) - International Retail Management.**
CO1	Student will learn about importance and role of international retail marketing.
CO2	Student will learn about Corporate Social Responsibility.
CO3	Student will know about the culture differences and determinants of consumer services.
CO4	Student will learn about the retail positioning and store image.
Course Code: 302	**TY.B.Voc(Retail Management) - Retail Management**
CO1	Student will learn about overview of Retail Management,emerging trends in retailing in india.
CO2	Student will learn about retail location and store design,store atmosphere and components.
CO3	Student will know about current trends in retailing, opportunities and challenges in rural retail marketing.
CO4	Student will learn about mall management , SWOT analysis of Indian Shopping mall.
Course Code: 303	**TY.B.Voc(Retail Management) - Human Resource Development & Marketing.**

CO1	Students will be able to understand concept and function of human resource development. Also they will get information regarding human resource planning.
CO2	Students will get knowledge concept, source of recruitment, selection process and various types and techniques of interview.
CO3	Students will understand the concept, importance, types and methods of tanning and development. This is importance to every employee in the organization.
CO4	Students will study the concept, benefits and process of career planning. Also they will get information regarding succession planning and its importance.
CO5	Students will understand the concept, process, methods, techniques and importance of performance appraisal management. This is very importance to manger in organization.
Course Code: 304	**TY.B.Voc(Retail Management) -Service Marketing-I**
CO2	Student will learn Concepts of Services
CO3	Student will learn Consumer Behaviour in Services & Practical Knowlegde of Selling & Purchasing Activity.
CO4	Student will learn about Consumer Expectation in Services.
CO5	Student will learn about various Consumer Percepotion of Services.
Course Code: 305	**TY.B.Voc(Retail Management) - Marketing Management-I**
CO1	Student will able to get the idea about full of marketing management.
CO2	Student will understand to various segmentation of market.
CO3	Student Will Understand about Customer Satisfaction
CO4	Student Will Understand about Behaviour of Consumer and Buyer Behaviour

Course Code: 306	**TY.B.Voc(Retail Management) - Production And Management**
CO1	Students will be able to understand concept, process and scope of production management. Also they will get information about various technology used in SCM.
CO2	Students will get knowledge concept, importance and various techniques of forecasting.
CO3	Students will understand the concept, types and functions of production planning and control. Also they will get information about concept, process, techniques and factors affecting on scheduling.
CO4	Students will study the concept, function and objective od supply chain management. Also get knowledge about various technology used in supply chain management.
Course Code: 307	**TY.B.Voc(Retail Management) - Research Methodology**
CO1	Student will learn about basic research concepts.
CO2	Student will know about steps in research process .
CO3	Understanding the types of research design.
CO4	Knowing about the types of data and its sources.
CO5	Understanding the measurement scales and report writing and presentation.
Course Code: 308	**TY.B.Voc(Retail Management) - Retail Management**
CO1	Student will learn about principles,role and resposibilities of retail merchandising.
CO2	Student will learn about types and process of merchandise planning.
CO3	Student will know about techniques promotion mix.
CO4	Student will learn about different growth strategies.

Course Code: 309	**TY.B.Voc(Retail Management) - Human Resource Development & Marketing**
CO1	Students will be able to understand concept , functions and classification of market. also they will get knowledge about concept, importance of market segmentation.
CO2	Students will get knowledge concept, importance and different forms of marketing organization. also they will get information about qualities of marketing manager.
CO3	Students will understand the concept of 4P's and concept of new product development.
CO4	Students will study the concept, importance, role and future of advertising.
Course Code: 310	**TY.B.Voc(Retail Management) - Service Marketing-II**
CO1	Students should understand the Marketing Research.
CO2	Student Will Learn about Build Customer Relationship in Market.
CO3	Student Will Learn about Service & Service Recovery.
CO4	Student Will Learn about the Service Development & Design.
Course Code: 311	**TY.B.Voc(Retail Management) - Marketing Management-II**
CO1	Student will understand about retail marketing
CO2	Student will understand get knowledge about industrial marketing
CO3	Student will understand and get idea about international marketing.
CO4	Student will understand and get idea about social marketing.
Course Code: 312	**TY.B.Voc(Retail Management) -Production And Management**

CO1	Students will be able to understand concept and types of risk which is occur in business also understanding insurance & insurance contract.
CO2	Students will get knowledge concept ,needs of transport and also understanding the various role of transport in Indian economy.
CO3	Students will understand the concept, types, scope, principles of life insurance and general insurance.
CO4	Students will study the concept, needs and types of transportation. Also understanding the suitability and limitation of road and rail transport in India.

19) Program: B.Voc. (Food Processing and Technology)

Course Code:FPT-101	**FYB.Voc. FPT - Name of Course/paper: FPT-101 Principles of food preservation**
CO1	To Develop basic understanding of most common methods of Food Presevation and their effects up on food systems.
CO2	To Examine the relationship between Preservation methods and food safety.
CO3	To introduce students about various techniques of Food Preservation
CO4	To introduce students about How to increase Shelf life of fresh and Processed food.
Course Code:FPT-102	**FYB.Voc. FPT - Name of Course/paper: FPT-102 Food Microbiolgy I**
CO1	To explain why microbiological quality control programms are necessary in food production.
CO2	To introduce students about charcterstics of food borne, water borne and spoilage microorganisms.
CO3	To introduce methods of isolation detection and identification of various micro organisms related to food technology.

CO4	To understand the principles of microorganisms during various food processing.
Course Code:FPT-103	**FYB.Voc. FPT - Name of Course/paper: FPT-103 Food Science**
CO1	To introduce students about major and mior componentes of food.
CO2	To apply statistical principle to food science
CO3	To introduce students about the compostion of food.
Course Code:FPT-111	**FYB.Voc. FPT - Name of Course/paper: FPT-111 Principles of food preservation (Practical)**
CO1	To introduce students about the various equipements used in food processing and food preservation.
CO2	To introduce students about the various techniques of food preservation.
CO3	To introduce students about various drying and dehydration technique.
CO4	To insure students are technicaly ready for the food industry through a practical.
Course Code:FPT-112	**FYB.Voc. FPT - Name of Course/paper: FPT-112 Food Microbilogy I (Practical)**
CO1	Students to be able to demonstrate theory and practical skills in microscopy.
CO2	To impart skill of handling and identification of various microorganisms which can cause the spoilage of food.
CO3	To introduce the basic concept of food born illeness and food poisoining.
CO4	To introduce students about staining techniques.

Course Code:FPT-113	**FYB.Voc. FPT - Name of Course/paper: FPT- 113Food Chemistry**
CO1	To study the detection of adultrants in various food products such as natural and processed foods.
CO2	To study the qualitative tests for various nutrients, such as proteins, corbohydrates and lipids.
CO3	To demonstrate the bacteria from the soil/water/air/milk
CO4	To study the detection of gluten in various foods.
	Semester II
Course Code:FPT- 201	**FYB.Voc. FPT - Name of Course/paper: FPT 201 -Human Nutrition and Food Toxicology**
CO1	To unerstand basic science relevant to nutrition, research and application of nutrition and an awareness of scial and economic factors in food.
CO2	To give the ability to student, which foods are good sources for what nutriants.
CO3	Students will be able to interpret and apply nutrition concepts to evaluate and improve the nutritional health of communities.
CO4	Sutdents will be able to identify and apply food principles to food and nutrition system.
Course Code:FPT- 202	**FYB.Voc. FPT - Name of Course/paper: FPT 202 -Food Chemistry**
CO1	To introduce the chemistry of food
CO2	To introduce physical properties of food constituents
CO3	To introduce structure, nomenclature and properties of food constituents.

CO4	To intorduce the food colour and food flavours
Course Code:FPT- 203	**FYB.Voc. FPT - Name of Course/paper: FPT 203 -Communicative Skills and Soft Skills in English**
CO1	To introduce communicative skills
CO2	To introduce the presentation skills
CO3	To introduce soft skills
CO4	To increase the ability of team management techniques.
Course Code:FPT- 211	**FYB.Voc. FPT - Name of Course/paper: FPT-211 Human Nutrition and food toxicology (Pract)**
CO1	Sutdents can able to calculate DMR and Body surface area.
CO2	To introduce inrichment and fortification daily diet.
CO3	To sutdy the list of nutirents rich food sourcess.
CO4	To calculate the nutritive value of food.
Course Code:FPT- 212	**FYB.Voc. FPT - Name of Course/paper: FPT-212 Food Chemistry (Pract)**
CO1	To sutdy the preparation of primary and secondary solutions.
CO2	To determine the refractive index and specific gravity of facts and Oils
CO3	To study the estimation of reducing and non reducing sugars.
CO4	To determine the protein by biuret method.

Course Code:FPT- 213	**FYB.Voc. FPT - Name of Course/paper: FPT-213 Communicative Skills and Soft Skills in English (Pract)**
CO1	To introduce technology based communication such as email, web mobile and telephones
CO2	To improve the skill of communication, speech, seminar and group discution.
CO3	To improve the presentation skills
CO4	To improve the soft skills
	SY B. Voc FPT
	Semester III
Course Code:FPT-301	**SYB.Voc. FPT - Name of Course/paper: FPT-301 Processing of fruits, vegetables, cereal, pulses and oil seeds**
CO1	To introduce fruits and vegetable processing
CO2	To introduce cereal processing
CO3	To introduce processing of pulses
CO4	To introduce processing of Oil seeds
Course Code:FPT-302	**SYB.Voc. FPT - Name of Course/paper: FPT-302 Food Microbiology II**
CO1	To introduce spoilage of food
CO2	To study the microbiology of milk

CO3	To study the thermal destruction of microorganisms
CO4	To introduction of fermented foods.
Course Code:FPT-303	**SYB.Voc. FPT - Name of Course/paper: FPT-303 Food Quality and Analysis**
CO1	To introduce food quality and its role in food industry.
CO2	To study the different defects in food which affects the quality of food.
CO3	To study the importants and needs of colour determination of various food materials.
CO4	To study the role of flavours in food industry
Course Code:FPT-311	**SYB.Voc. FPT - Name of Course/paper: FPT-311 Processing of fruits, vegetables, cereal, pulses and oil seeds (Pract)**
CO1	To sutdy the primary processing of selected foods and vegetables.
CO2	To study the canning of various fruits.
CO3	To study the different processing techniques of fruits and vegetables.
CO4	To study the processing preparation of Soya milk
Course Code:FPT-312	**SYB.Voc. FPT - Name of Course/paper: FPT-312 Food Microbiology II (Pract)**
CO1	To study the microscopic examination of fungi causing rust infections in plants
CO2	To study the isolation and sutdy of microoranisms from spoiled food samples.

CO3	To introduce the technique of isolation and identification of various microorganisms.
CO4	To understand the microbiological tests.
Course Code:FPT-313	**SYB.Voc. FPT - Name of Course/paper: FPT-313 Food Quality and Analysis (Pract)**
CO1	To determine the carotenoids by TLC
CO2	To determine the ascorbic acids by tritrimetric and photometric methods
CO3	To study the viscosity of liquid food
CO4	To evaluate the given food sample using different sensory test methods.
	Semester IV
Course Code:FPT- 401	**SYB.Voc. FPT - Name of Course/paper: FPT- 401 Processing of dairy and dairy products**
CO1	To introduce the importance of milk industry in india.
CO2	To study the microbial spoilage of milk
CO3	To introduce the technology of fermented milk products
CO4	To study scope and functioning of milk supply schemes.
Course Code:FPT- 402	**SYB.Voc. FPT - Name of Course/paper: FPT-402 Processing of bakery, confectionary and Spice products**
CO1	To study different backery products

CO2	To study the chocolate processing
CO3	To study the production and processing of spices
CO4	To study vanilla and annato processing.
Course Code:FPT- 403	**SYB.Voc. FPT - Name of Course/paper: FPT-403 Statistics, Data Analysis and Financial accounting**
CO1	To introduce the business stastics
CO2	To introduce the basic accounting concepts
CO3	To study the types of secondary books
Course Code:FPT- 411	**SYB.Voc. FPT - Name of Course/paper: FPT-411 Processing of dairy and dairy products (Pract)**
CO1	To introduce the sampling of milk and milk products
CO2	To study the platform test of milk
CO3	To study the standardization of milk
CO4	To study the preparation of different milk products.
Course Code:FPT- 412	**SYB.Voc. FPT - Name of Course/paper: FPT-412 Processing of Bakery, Confectionary and Spice products (Pract)**
CO1	To appply the knowledge of prepartion of bread and biscuits.
CO2	To study the preparation of sponge cake

CO3	To study of stanadard specification of spices
CO4	To detect the adultration in spices
Course Code:FPT- 413	**SYB.Voc. FPT - Name of Course/paper: FPT-413 Industrial Training**
CO1	To apply prcatical skills in food industry
CO2	To improve the handling of different equipements.
CO3	To study of how process of different foods done at industrial level
	TY B. Voc FPT
	Semester V
Course Code:FPT-501	**TYB.Voc. FPT - Name of Course/paper: FPT-501 Technology of meat, fish, poultry and food beverages**
CO1	To sutdy source and devolement of meat industry in india and its importantce in national economy
CO2	To study the slautering of animals
CO3	To sutdy the compossion and structure of fish
CO4	To introduce of food beverages
Course Code:FPT-502	**TYB.Voc. FPT - Name of Course/paper: FPT-502 Food Sanitation, Packaging and Storage Tachnology**

CO1	To introduce the sanitation of food, importance and benefits of sanitaion.
CO2	To give introducation of packaging
CO3	To study different packaging materials.
CO4	To study different storage technology
Course Code:FPT-503	**TYB.Voc. FPT - Name of Course/paper: FPT-503 Quality Assurance, Certification and Patent application**
CO1	To study objectives, importance and functions of quality control
CO2	To study GMP and GLP
CO3	To study sampling and specification of raw materials and finished products
CO4	To introduce the patent, patent act, petent rules and petent types
Course Code:FPT-511	**TYB.Voc. FPT - Name of Course/paper: FPT-511 Technology of meat, fish, poultry and food beverages (Pract)**
CO1	To identify the physical charcterstics of meat
CO2	To determine the pH of meat
CO3	To study of quring of fish
CO4	To study preparation of Tea and Coffee
Course Code:FPT-512	**TYB.Voc. FPT - Name of Course/paper: FPT-512 Food Sanitation, Packaging and Storage Tachnology (Pract)**

CO1	To determine the GSM
CO2	To study the Bursting strength of packaging material
CO3	To determine the shelf life of food
CO4	To study of preparaton of packaging albums
Course Code:FPT-513	**TYB.Voc. FPT - Name of Course/paper: FPT-513 Internship (Pract)**
CO1	To apply practical knowledge at industry
CO2	To improve the processing technologies
CO3	To imporve the handling of equipments
	Semester VI
Course Code:FPT- 601	**TYB.Voc. FPT - Name of Course/paper: FPT-601(a) Human values and ethics FPT-601(b) Food laws and regulations**
CO1	To sutdy the work ethics
CO2	To study risk benefit analysis
CO3	To introduce the food laws and regulations
CO4	To introduce the FSS regulations
Course Code:FPT- 602	**TYB.Voc. FPT - Name of Course/paper: FPT-602(a) Disaster Management FPT-602(b) Agribusiness management**

CO1	To study enviornment polution
CO2	To introduction to current environmental global issues.
CO3	To study government schems for promotion of Entrepreneurship
Course Code:FPT- 603	**TYB.Voc. FPT - Name of Course/paper: FPT-603 Food Business management**
CO1	To study management principles
CO2	Introduction of Economics
CO3	To study of Finance management.
Course Code:FPT- 611	**TYB.Voc. FPT - Name of Course/paper: FPT-611(a) Food plant design and layout (Pract) FPT-611(b) Project management and Entrepreneurship (Pract)**
CO1	To preparaton of Project reports
CO2	To layout of food storage wares
CO3	To interprite layout of milk and milk products plant
CO4	To study on market survey based on Enterprise
Course Code:FPT- 612	**TYB.Voc. FPT - Name of Course/paper: FPT-612(a) Disaster Management FPT-612(b) Agribusiness management (Pract)**
CO1	To study quality parameteres of water
CO2	To study determination of chloride in water

CO3	To study hardness of water
Course Code:FPT- 613	**TYB.Voc. FPT - Name of Course/paper: FPT-613 Food Business management (Pract)**
CO1	To prepare Project proposals as Entrepreneure
CO2	To calculate the project cost and break even analysis of specific project
CO3	To study different schems for food Entrepreneurs loan
CO4	To study market survey

COURSE OUTCOMES (COs) FOR POSTGRADUATE COURSES

1) Program: M. A. (English)

Course Code:10601	**M.A. I : Paper 1.1: English Literature from 1550 to 1798 SEM I**
CO1	To introduce students to the major movements and figures of English Literature
CO2	To aware students about crosscutting issues in liteature
CO3	To enable them to critically examine the writers' thematic concerns
CO4	To enhance their proficiency in English

Course Code:20601	**M.A. I : Paper 2.1: English Literature from 1550 to 1798 SEM II**
CO1	To introduce students to the major movements and figures of English Literature
CO2	To aware students about crosscutting issues in liteature
CO3	To enable them to critically examine the writers' thematic concerns
CO4	To enhance their proficiency in English
Course Code: 10602	**M.A. I : Paper 1.2: English Literature from 1798 to the Present Sem I**
CO1	To introduce students to the major movements and figures of English Literature
CO2	To enhance learners' literary sensibility and their emotional response to literary texts
CO3	To enable them to critically examine the writers' thematic concerns
Course Code: 20602	**M.A. I : Paper 2.2: English Literature from 1798 to the Present Sem II**
CO1	To introduce students to the major movements and figures of English Literature
CO2	To enhance learners' literary sensibility and their emotional response to literary texts
CO3	To enable them to critically examine the writers' thematic concerns
Course Code:10603	**M.A. I Paper 1.3: Contemporary Studies in English Language Sem I**
CO1	To introduce learners to the syntactic features of the English language
CO2	To acquaint students with the basic concepts and issues in linguistics

CO3	To introduce them to various sub-disciplines of linguistics
Course Code:20603	**M.A. I Paper 2.3: Contemporary Studies in English Language Sem II**
CO1	To introduce learners to the syntactic features of the English language
CO2	To help them shake off some of the regional features of English pronunciation
CO3	To enable them to use English with confidence and with a better understanding of its appropriate social applications.
Course Code:10604	**M.A. I Paper 1.4: Literary Criticism and Theory Sem I**
Co1	To introduce students to the nature, function and relevance of literary criticism and theory
Co2	To introduce them to various important critical approaches
CO3	To encourage them to deal with highly intellectual and radical content
CO4	To develop practical application of critical approach to literary texts
Course Code:20604	**M.A. I Paper 2.4: Literary Criticism and Theory Sem II**
CO1	To acquint students for practical application of critical appraoch
CO2	To develop logical thinking and adoptibility in critical approches in literature
CO3	To develop literary sense with radical content
Course Code: 30601	**M.A. II Paper 3.1: Indian Writing in English (Core Paper) Sem III**

CO1	To introduce students to the various phases of the evolution in Indian Writing in English
CO2	To make them aware of Indian cultural ethos and indigenous belief systems through the study of major literary works in the domain of Indian English literature.
CO3	To develop the ability of students to critically examine and restate their understanding of literary texts
CO4	To instill human values and develop literary sensibility among students through exposure to IWE tex
Course Code: 40601	**M.A. II Paper 4.1: Indian Writing in English (Core Paper) Sem IV**
CO1	To introduce students to the various phases of the evolution in Indian Writing in English
CO2	To make them aware of Indian cultural ethos and indigenous belief systems through the study of major literary works in the domain of Indian English literature.
CO3	To develop the ability of students to critically examine and restate their understanding of literary texts
CO4	To instill human values and develop literary sensibility among students through exposure to IWE tex
Course Code: 30603	**M.A. II Paper 3.3 Cultural Studies Sem III**
CO1	To introduce students to the newly established field of cultural studies, its concerns and approaches
CO2	2. To orient students towards interdisciplinary approach and analysis of cultural issues including literature and language
CO3	3. To steer students towards new possibilities of analysis that can relate them to their surroundings
CO4	4. To create awareness about the recent developments in humanities and social sciences that cover several issues from philosophical to everyday matter
CO5	To instil tolerance, sense of equality and love for humanity in students

Course Code: 40603	**M.A. II Paper 4.3 Cultural Studies Sem IV**
CO1	To introduce students to the newly established field of cultural studies, its concerns and approaches
CO2	2. To orient students towards interdisciplinary approach and analysis of cultural issues including literature and language
CO3	3. To steer students towards new possibilities of analysis that can relate them to their surroundings
CO4	4. To create awareness about the recent developments in humanities and social sciences that cover several issues from philosophical to everyday matter
CO5	To instil tolerance, sense of equality and love for humanity in students
Course Code: 30607	**M.A. II Paper 3.7 Pragmatics and Digital Humanities Sem III**
CO1	To introduce students to pragmatics as a dynamic perspective to language
CO2	To introduce the vibrant and socially-relevant concepts and theories of pragmatics
CO3	To enable students to apply pragmatic insights in different fields like literature, translation, and NLP
CO4	To enable students to see how the humanities are emerging into digital humanities
CO5	To acquaint students with the nature and features of digital humanities
CO6	To introduce some tools and branches of digital humanities
Course Code: 40607	**M.A. II Paper 4.7 Pragmatics and Digital Humanities Sem IV**
CO1	To introduce students to pragmatics as a dynamic perspective to language

CO2	To introduce the vibrant and socially-relevant concepts and theories of pragmatics
CO3	To enable students to apply pragmatic insights in different fields like literature, translation, and NLP
CO4	To enable students to see how the humanities are emerging into digital humanities
CO5	To acquaint students with the nature and features of digital humanities
CO6	To introduce some tools and branches of digital humanities
Course Code: 30608	**M.A. II Paper 3.8 World Literature in English Sem III**
Co1	To introduce students to some of the important literary texts of the world
Co2	To help them in gaining some insights into the socio-cultural aspects of the regions from where the texts are chosen.
CO3	To enable students to compare the authors of the world with Indian writers in English or the writers in their own languages
CO4	To introduce students to the various techniques employed by the authors and how the techniques are adapted/adopted by Indian authors.
Co5	To help the students undertake research in comparative literature
Course Code: 40608	**M.A. II Paper 4.8 World Literature in English Sem IV**
Co1	To introduce students to some of the important literary texts of the world
Co2	To help them in gaining some insights into the socio-cultural aspects of the regions from where the texts are chosen.
CO3	To enable students to compare the authors of the world with Indian writers in English or the writers in their own languages

CO4	To introduce students to the various techniques employed by the authors and how the techniques are adapted/adopted by Indian authors.
CO5	To help the students undertake research in comparative literature
2) Program: M. A. (Marathi)	
Course Code:CC1	**MA Marathi Sem I- Name of Course/paper भाषा व्यवहार आणि भाषिक कौशल्ये -भाग १**
CO1	लेखन कौशल्य विकसित करणे
CO2	भाषिक कौशल्य व प्रसारमाध्यमे यांच्यातीलपरस्पर संबंधाचे ज्ञान विध्यार्थ्यांना करून देणे.
CO3	वैकार्यालयीन, व्यावसायिक भाषिक संज्ञाचा परिचय करून देणे.
CO4	विद्यार्थ्यांना मराठीच्या व्यवहार क्षेत्राची माहिती देणे.
CO5	प्रसारमाध्यमातील संधींचा परिचय करून देणे.
Course Code: CC2	**MA Marathi Sem I- Name of Course/paper मराठी साहित्याचा इतिहास (इ. स.१८१८ ते इ. स. १९२०)**
CO1	मराठी वाङमयाचा इतिहासाचे स्थूल स्वरूप स्पष्ट करणे.
CO2	मराठी वाड्मयाच्या प्रेरणा प्रवृती यांचा परिचय करून देणे.
CO3	वाड्मयाच्या विशिष्ट कालखंडाच्या पार्श्वभूमीचा अभ्यास करणे.
CO4	वाङमयीन साहित्य प्रकारच्या विकासाचे महत्वाचे टप्पे लक्षात घेणे.

CO5	मराठी वाड्मयातील साहित्यकृती यांचा परिचय करून देणे.
Course Code: CC3	**MA Marathi Sem I- Name of Course/paper ऐतिहासिक भाषाविज्ञान**
CO1	भाषेचे स्वरूप व कार्य स्पष्ट करणे.
CO2	भाष्याभ्यासाची प्रमुख अंगे व पद्धती अभ्यासणे.
CO3	भाषेचा उगम भाषाकुल अभ्यासणे
CO4	ऐतिहासिक भाषा अभ्यास पद्धतीचे स्वरूप व महत्व स्पष्ट करणे.
Course Code: - CBOP4	**MA Marathi Sem I- Name of Course/paper ग्रामीण साहित्य (ऐच्छिक),**
CO1	मराठी साहित्यातील विविध प्रवाह आणि प्रकार लक्षात घेणे.
CO2	ग्रामीण साहित्याच्या प्रेरणा प्रवृती यांचा परिचय करून देणे.
CO3	ग्रामीण साहित्यातील अस्वादन, आकलन,मूल्यमापन करण्याची क्षमता विध्यार्थ्यांमध्ये निर्माण करणे.
CO4	ग्रामीण साहित्य व समाज यांचा परस्पर संबंध समजून घेणे.
CO5	ग्रामीण साहित्यनिर्मिती प्रक्रिया व वाड्मयीन मुल्य समजून घेणे.
Course Code: CC4	**MA Marathi Sem II- Name of Course/paper भाषा व्यवहार आणि भाषिक कौशल्ये -भाग २**
CO1	लेखन कौशल्य विकसित करणे
CO2	भाषिक कौशल्य व प्रसारमाध्यमे यांच्यातीलपरस्पर संबंधाचे ज्ञान विध्यार्थ्यांना करून देणे.
CO3	वैकार्यालयीन, व्यावसायिक भाषिक संज्ञाचा परिचय करून देणे.

CO4	विद्यार्थ्यांना मराठीच्या व्यवहार क्षेत्राची माहिती देणे.
CO5	प्रसारमाध्यमातील संधींचा परिचय करून देणे.
Course Code: CC5	**MA Marathi Sem II- Name of Course/paperमराठी वाङ्मयाचा इतिहास (इ. स.१९२० ते इ. स. १९६०)**
CO1	मराठी वाङमयाचा इतिहासाचे स्थूल स्वरूप स्पष्ट करणे.
CO2	मराठी वाङ्मयाच्या प्रेरणा प्रवृती यांचा परिचय करून देणे.
CO3	वाङ्मयाच्या विशिष्ट कालखंडाच्या पार्श्वभूमीचा अभ्यास करणे.
CO4	वाङमयीन साहित्य प्रकारच्या विकासाचे महत्वाचे टप्पे लक्षात घेणे.
CO5	मराठी वाङ्मयातील साहित्यकृती यांचा परिचय करून देणे.
Course Code: CC6	**MA Marathi Sem II- Name of Course/paper भाषाविज्ञान सामाजिक**
CO1	विद्यार्थ्याला भाषिक संशोधन क्षेत्र निश्चित करता येणे.
CO2	सामाजिक भाषाविज्ञान भाष्याभ्यासाची प्रमुख अंगे व पद्धती अभ्यासणे.
CO3	**सामाजिक भाषाविज्ञान** संकल्पनेचा स्थूल परिचय करून देणे.
CO4	भाषा अभ्यास पद्धतीचे स्वरूप व महत्व स्पष्ट करणे.
CO5	सामाजिक भाषा अभ्यास पद्धतीचे स्वरूप व महत्व स्पष्ट करणे.

3) Program: M. A. (Hindi)	
Course Code: ------	**M.A. I : Paper Title 1. मध्ययुगीन काव्य**
CO1	हिंदी की मध्ययुगीन काव्य प्रवृत्तियों का परिचय देना।
CO2	कवि विशेष की रचनाओं का परिचय देना।
CO3	तत्कालीन काव्यभाषा की प्रवृत्तियों का परिचय देना।
CO4	काव्य मूल्यांकन की क्षमता विकसित करना।
Course Code: ------	**M.A. I : Paper Title 2. कथा साहित्य**
CO1	उपन्यास विधा से अवगत कराना।
CO2	कहानी विधा से अवगत कराना।
CO3	आलोचनात्मक दृष्टि का विकास करना।
CO4	सर्जनात्मक कौशल का विकास करना।
Course Code: ----------	**M.A. I : Paper Title 3. भारतीय काव्यशास्त्र**
CO1	भारतीय काव्यशास्त्र के विकासक्रम का परिचय देना।
CO2	भारतीय काव्यशास्त्र के प्रमुख संप्रदायों से अवगत कराना।
CO3	मूल्यबोध को परखने की क्षमता को विकसित करना।
CO4	आलोचनात्मक दृष्टि का विकास करना।

Course Code: ------	**M.A. I : Paper Title 4. हिंदी पत्रकारिता**
CO1	पत्रकारिता की भाषा का परिचय देना।
CO2	हिंदी पत्र पत्रिकाओं के योगदान से परिचित कराया।
CO3	पत्रकारिता का कौशल विकास करना।
CO4	रोजगारपरक दृष्टि का विकास करना।
Course Code: -----	**M.A. I : Paper Title 5. कथेत्तर गद्य साहित्य**
CO1	व्यंग और निबंध विधा से अवगत कराना।
CO2	रेखाचित्र और सस्मंरण विधा से अवगत कराना।
CO3	पाठ्य विधाओं का भाषिक अध्ययन करवाना।
CO4	मौलिक लेखन कौशल विकासित करना।
Course Code: ------	**M.A. I : Paper Title 6. शोध प्रविधि**
CO1	छात्रों को शोध प्रविधि से अवगत कराना।
CO2	शोध दृष्टि का विकास करना।
CO3	नये शोध प्रवाहों से परिचित कराना।
CO4	शोध प्रबंध लेखन कौशल विकासित करना।
Course Code: ------	**M.A. I : Paper Title 7. पाश्चात्य काव्यशास्त्र**

CO1	पाश्चात्य काव्यशास्त्र के विकासक्रम का परिचय देना।
CO2	पाश्चात्य विद्वानों के सिद्धांत का परिचय देना।
CO3	प्रमुख आंदोलनों से अवगत कराना।
CO4	छात्रों को सृजन, आस्वादन एवं आलोचना दृष्टि देना।
Course Code: ------	**M.A. I : Paper Title 8. हिंदी उपन्यास साहित्य**
CO1	हिंदी उपन्यास साहित्य के विकासक्रम से परिचित कराना।
CO2	उपन्यासों के आस्वादन, अध्ययन की क्षमता विकसित करना।
CO3	पाठ्य रचनाओं में प्रस्तुत साहित्यिक मूल्यों का संप्रेषण करना।
CO4	मूल्यांकन की दृष्टि का विकास करना।
Course Code: -------	**M.A. II : Paper Title 9. आधुनिक काव्य**
CO1	छात्रों को आधुनिक काव्य से अवगत कराना।
CO2	आधुनिक काव्य अध्ययन की दृष्टि विकसित करना।
CO3	काव्य मूल्यांकन की दृष्टि विकसित करना।
CO4	काव्य संवेदना एवं शिल्पगत अध्ययन से अवगत कराना।
Course Code: -------	**M.A. II : Paper Title 10. भाषा विज्ञान**
CO1	भाषा-विज्ञान के स्वरुप का परिचय देना।

CO2	भाषा-विज्ञान की व्याप्ति समझाना।
CO3	भाषा-विज्ञान के अध्ययन की दिशाओं का परिचय देना।
CO4	साहित्य अध्ययन में भाषाविज्ञान की उपयोगिता समझाना।
Course Code: -------	**M.A. II : Paper Title 11. हिंदी साहित्य का इतिहास**
CO1	हिंदी साहित्येतिहास लेखन का परिचय देना।
CO2	कालविभाजन तथा नामकरण का परिचय देना।
CO3	आदिकाल, भक्तिकाल एवं रीतिकाल की साहित्यिक प्रवृत्तियों का परिचय देना।
CO4	तत्कालीन रचनाओं एवं रचनाकारों का परिचय देना।
Course Code: -------	**M.A. II : Paper Title 12. हिंदी आलोचना**
CO1	आलोचना का स्वरुप समझाना।
CO2	आलोचना के विविध प्रकारों को अवगत कराना।
CO3	हिंदी के प्रमुख आलोचकों के आलोचनात्मक प्रतिमानों का परिचय देना।
CO4	साहित्यालोचन एवं व्यावहारिक समीक्षा दृष्टि विकसित करना।
Course Code: -------	**M.A. II : Paper Title 13. आधुनिक कविता**
CO1	छात्रों को आधुनिक काव्य से अवगत कराना।
CO2	आधुनिक काव्य अध्ययन की दृष्टि विकसित करना।

CO3	सर्जनात्मक कौशल से अवगत कराना।
CO4	आलोचनात्मक दृष्टि विकसित करना।
Course Code: -------	**M.A. II : Paper Title 14. हिंदी भाषा का विकास**
CO1	हिंदी भाषा की ऐतिहासिक पृष्ठभूमि से अवगत कराना।
CO2	आधुनिक आर्य भाषाओं का परिचय देना।
CO3	हिंदी स्वनिम व्यवस्था का परिचय देना।
CO4	हिंदी रुप रचना से अवगत कराना।
Course Code: -------	**M.A. II : Paper Title 15. हिंदी साहित्य का इतिहास**
CO1	हिंदी गद्य के उद्भव और विकास से अवगत कराना।
CO2	द्विवेदी युग, छायावाद, प्रगतिवाद, प्रयोगवाद और नई कविता के साहित्यिक प्रवृत्तियों से परिचित कराना।
CO3	तत्कालीन रचनाओं एवं रचनाकारों का परिचय देना।
CO4	ऐतिहासिक दृष्टि विकसित करना।
Course Code: -------	**M.A. II : Paper Title 16. भारतीय लोकसाहित्य**
CO1	लोकसाहित्य के स्वरुप एवं महत्व से परिचित कराना।
CO2	लोकसाहित्य के विविध प्रकारों से परिचित कराना।
CO3	लोकसाहित्य की व्यापकता से परिचित कराना।

CO4	महाराष्ट्र के लोक साहित्य का परिचय देना।
4) Program: M. A. (Economics)	
Course Code:-1001	**M.A. SEM-I : Micro Economic Analysis I**
CO1	To describe The Basic Micro- Economic Problems of Scarcity and Choice.
CO2	To explain Consumer Theory
CO3	To explain Production Theory
CO4	To discuss Partial and General Equilibrium.
Course Code:-1002	**M.A.SEM-I : Public Economics I**
CO1	To underline Government in Organized Society
CO2	To underline Rationale for Public Policy
CO3	To explain Wagner's Law of Increasing State Activities
CO4	To explain Theory of Optimal Taxation; Excess Burden of Taxes;
Course Code:-1003	**M.A. SEM-I : International Trade**
CO1	To explain Classical and Modern Trade Theories
CO2	To describe Terms of Trade and Economic Development

CO3	To explain WTO- Important Agreements under, Major developments since 1995,
	Expected effects on the Indian Economy.
Course Code:-1004	**M.A. SEM-I : Labour Economics**
CO1	To explain Concept, Significance and Pecularities of Labour.
CO2	To explain Marginal Productivity Theory, Theory of Collective Bargaining, Modern
	Theory of Wages.
CO3	To describe Labour turnover - Trends in Labour Turnover in India.
CO4	To explain Labour Unions in India- Growth, Pattern, Structure and Achievements of
	Labour Union in India.
Course Code:-2001	**M.A. SEM-II : Micro Economic Analysis II**
CO1	To explain Classification of Markets.
CO2	To explain Short Run and Long Run Equilibrium of a Single Firm an Industry under
	competitive conditions
CO3	To describe Theory of Distribution and Welfare Economics
Course Code:-2002	**M.A. SEM-II : Public Economics II**
CO1	To describe Sources of Public Debt; Debt through created Money

CO2	To explain Objectives of Fiscal Policy, Interdependence of Fiscal and Monetary Policies
CO3	To select Indian Fiscal Federalism
CO4	To describe Indian Public Finances
Course Code:-2003	**M.A. SEM-II : International Finance**
CO1	To describe Balance of Trade and Balance of Payments- Meaning, Structure and
	Components
CO2	To explain Functions of Foreign Exchange Market
CO3	To describe International Banking and Eurocurrency Market
Course Code:-2005	**M.A. SEM-II : Industrial Economics**
CO1	To describe industrial economics - Meaning, scope, need and significance of the study
CO2	To describe Theories of Industrial Location
Course Code:-3001	**M.A. SEM-III : Macro Economics I**
CO1	To explain Difference between Potential Output and Actual Output- Classical Approach
CO2	To explain National Income
CO3	To explain New Classical Macroeconomics & Open Economy Issues
Course Code:-3002	**M.A. SEM-III : Growth & Development I**

CO1	To discuss Development and Underdevelopment: An Overview
CO2	To discuss Defining poverty and problems of measurement
CO3	To explain Theories of Economic Growth and Development
Course Code:-3003	**M.A. SEM-III : Modern Banking**
CO1	To discuss Evolution, role and functions of modern banks in India
CO2	To discuss Investment policy of a bank- liquidity, safety and profitability.
CO3	To discuss types and significance of NBFIs in India
CO4	To explain International Financial Markets
Course Code:-3004	**M.A. SEM-III : Demography**
CO1	To explain Population theories
CO2	To explain Demography : Nature and Scope
CO3	To explain Population structure and characteristics
CO4	To explain National Population policy
Course Code:-4001	**M.A. SEM-IV :Macro Economics II**
CO1	To explain Definitions of Money, Money ness and liquidity. Measures of Money
CO3	To discuss Goals Targets, Indicators and instruments of Monetary Policy

CO4	To use Theories of Interest Rates, Monetary Policy and Macro economy
Course Code:-4002	**M.A. SEM-IV : Growth & Development II**
CO1	To explain The role of agriculture and Industry in development
CO2	To discuss Policy Environment for growth and development
CO3	To apply The role of the government and markets in the developmental process
Course Code:-4003	**M.A. SEM-IV : Research Methodology**
CO1	To orient students about the Research Problem
CO2	To aware about scope and limitations in the research methodology
CO3	To sensitize students about types of data collection
CO4	To form the basics To entrench research parameters
Course Code:-4004	**M.A. SEM-IV : Economics of Environment**
CO1	To explain Introduction To Economics o f Environment
CO2	To classify Industrial Development And Environmental Problems
CO3	To describe Environmental problems of agricultural development
5) Program: M. A. (Geography)	

Course Code:Gg-101	**First Year MA/MSc- NANE OF THE COURSE -Principles of Geomorphology**
CO1	1. To know the fundamentals of Geomorphology
CO2	2. Understand latitudes, longitudes and international dead line.
CO3	3. Acquire knowledge about origin of various landforms.
CO4	4. Understand the origin of oceans and currents.
CO5	5. To Understand formation of rocks there types and uses.
Gg-102 sem-II	**First Year MA/MSc- NANE OF THE COURSE -Principles of Climatology**
CO1	1. Understand the structure, composition of Atmosphere.
CO2	2. Understand weather phenomena winds, humidity, precipitation.
CO3	3. Understand heat balance.
CO4	4. Understand forecasting methods
CO5	To understanding the process of weather forecasting.
Gg-103	**Principles of Economic Geography**
CO1	1. Study the Human Economic Activities
CO2	2. Explain the Weber theory Rostov modal
CO3	3. Understand the mineral and power resources

CO4	4. Study of the distribution of engineering, cotton sugar Industries in India
CO5	5. Study Of India's foreign tread
Gg-104	**First Year MA/MSc- NANE OF THE COURSE -Principles of Population and Settlement Geography**
CO1	Understand the history of population settelement
CO2	2. Understand the types of data
CO3	3. Study of distribution and density of population.
CO4	4. Get knowledge of population theories.
CO5	5. Investigate Current Issues and Problems in India
Gg-105	**Gg-105 Practical in Physical Geography**
CO1	1. To learn drawing of Scale Diagram for representing geographical data.
CO2	2. Skill of drawing of map, grapes, diagrams scale.
CO3	3. Get skill of Drawing of projection.
CO4	4. Aquaria knowledge of map making techniques.
CO5	5. To understand to choice of projection according purpose of making maps.
Gg-106	**Gg-106 Practical in human Geography**
CO1	Understand the relationship of man and environment

CO2	2. Studies of races of man kinds.
CO3	3. Understand the modes of life of aximo, pigmy, gonad ,Bhil And nagas.
CO4	4. Importance of Right to Information Acts.
CO5	To understand the basic concept of human races
Gg.201	**First Year MA/MSc- NANE OF THE COURSE -Quantitative Techniques in Geography**
CO1	Know the Importance of Statistic in Geography.
CO2	3. Compute of Measures of Central tendency of dispersion.
CO3	4. Calculation and plotting moving Average.
CO4	5. Compute the Correlation of Pearson's and Spearman's methods.
CO5	6. Statistical data Analysis of simple regression.
Gg-212	**FIRST Year MA/MSc- Name of Course/paper - Agricultural Geography**
CO1	Examining the introduction to agriculture, nature, scope, significance and development of agriculture geography, approaches to study.
CO2	Understand the fundamental concept, land use, crops, agricultural production and envelopment and study the determinants of agricultural activities, physical determinants, and socio-economic determinants
CO3	To understand the agricultural system its meaning and concept, whittlesey's classification of agricultural system, types of agricultural, study of the following types of agricultural in respect of area, salient features and their problems
CO4	Understand the agricultural regionalization and modes in agricultural geography and their classification of agricultural models and some theories

CO5	Understand the agricultural statistics & land use survey techniques and agrarian revolution, meaning &merit and demerit of green revolution and white revolution.
Gg-222	**FIRST Year MA/MSc- Name of Course/paper -Industrial geography**
CO1	Understand study about the industrial geography, its nature, scope, and different study methods.
CO2	To study the locations of industry and their activities primary and secondary and its factors responsible for same.
CO3	To review on world distribution of some industries and selected countries
CO4	To understand the global nature of industrialization and related problems, methods of measuring the spatial distribution of manufacturing
CO5	Understand the environmental degradation, industrial hazards and occupational health, manufacturing industry, role and factors affecting on the same.
Course Code: -----Gg-202--	**FIRST Year MA/MSc- Name of Course/paper -Practical in Cartography**
CO1	Understand the introductory part of GIS software, its tool, functions, data import,scale factors, and basics of digitization
CO2	Use this software for prepare the various types of maps in geography with the help ofcartographic Techniques of GIS software.
CO3	Applied this software and cartographic techniques for analysis and study in ruralsettlement geography and urban settlement for planning and development
	Understand the cartographic techniques and its tolls, functions, applied in agriculture
CO4	Understand the cartographic techniques and its tolls, functions, applied in agriculturegeography and physical geography for assessment and visualization purpose.
CO5	3. Applied this software and cartographic techniques for analysis and study in rural
Course Code: -Gg-203------	**FIRST Year MA/MSc- Name of Course/paper -Practical in Surveying and Field visit**

CO1	Understand the different surviving techniques.
CO2	2. Knowledge about preparation of layout.
CO3	3. Understand the socio economic condition of the villages.
CO4	4. Acquire knowledge of preparation of drawing of profile with the help of
CO5	know basic concept of surveying
Course Code: ---Gg-204----	**FIRST Year MA/MSc- Name of Course/paper -Geography of Tourism**
CO1	dentify and manage tourist areas and destinations.
CO2	Manage tourist areas in accordance with sustainability criteria.
CO3	Analyse the impacts generated by tourism.
CO4	Understand the dynamic and evolutionary nature of tourism in the new leisure society.
CO5	Detect technical planning needs for tourist infrastructures and facilities.
Course Code: Gg-205-------	**FIRST Year MA/MSc- Name of Course/paper -Geography of Disaster Management**
CO1	Describe and utilize spatial data, geographic information systems (GIS)
CO2	Utilize existing sources of historical disaster information

CO3	Apply GIS/remote sensing in hazard, vulnerability, and risk assessment
CO4	Utilize risk information in emergency preparedness planning
CO5	Visualize hazard and risk information
Course Code: -Gg-208	**FIRST Year MA/MSc- Name of Course/paper -Geoinformatics-I**
CO1	Understand the History of Remote Sensing
CO2	2. Know Arial Photographs and Satellite Imageries
CO3	3. Acquire Knowledge about Indian Remote sensing.
CO4	4. Investigate components and function of GIS
CO5	To Develops Skill of soil and water analysis techniques
Course Code: Gg-209	**FIRST Year MA/MSc- Name of Course/paper -Geoinformatics-II**
CO1	Study GIS Data models.
CO2	6. Introduce GPS and Its Functions.
CO3	7. Make use GIS & GPS software
CO4	Acquire Knowledge about Indian Remote sensing.
CO5	. Know Arial Photographs and Satellite Imageries

Course Code: Gg-301	**SECOND Year MA/MSc- NANE OF THE COURSE -Geography of India with special Reference to Maharashtra**
CO1	Understand the location Physiography, Drainage, Climate, and
CO2	To know Vegetation of India
CO3	To know the silent feature, problems and prospects of Agriculture.
CO4	. Study the Problems And Prospect of Industrial Area.
CO5	Population Composition India.
Course Code: Gg-312	**SECOND Year MA/MSc- Name of Course/paper -Trade and Transport Geography**
CO1	Understand the concept, development and significance of trade
CO2	To understand the trading blocks and trading pacts and international trade
CO3	To study the transport and its basics, physical, economical, social and cultural and modes of transportation
CO4	Examining the transportation network, measurement of accessibility, its hierarchies,hinterlands.
CO5	Understand the problems and urban transport with growth of urban transportation
Course Code:Gg-321	**SECOND Year MA/MSc- Name of Course/paper -Political Geography**
CO1	1. Understand the history of Political Geography.
CO2	2. Get knowledge about Evolution of states & nations.

CO3	3. Get knowledge of Geopolitical theories.
CO4	4. Investigate Problems and disputes in India
Course Code: Gg-332	**SECOND Year MA/MSc- Name of Course/paper -Practicals in Economic Geography**
CO1	To learn drawing of Scale Diagram for representing geographical data.
CO2	2. Skill of drawing of map, grapes, diagrams scale.
CO3	3. Get skill of Drawing of projection.
CO4	4. Aquaria knowledge of map making techniques.
CO5	5. To understand to choice of projection according purpose of making maps.
Course Code: -Gg-302	**SECOND Year MA/MSc- Name of Course/paper -Interpretation of Topographical Maps &**
	Village Survey / Project work
CO1	1. Introduce the student of top sheet, weather map.
CO2	2. Understand the mechanism function of topographical maps.
CO3	3. Understand interpretation if weather images.
CO4	4. Understand the socio economic condition of the villages.
CO5	Understand the mechanism function of topographical maps
Course Code:Gg-304	**SECOND Year MA/MSc- Name of Course/paper -Social &Cultural Geography**

CO1	Understand the nature, scope, and concept, relationship between culture and social environment, and right of information act.
CO2	To examining the cultural complex and traits of culture and its concepts.
CO3	Evolution to civilization and various cultural development and cultural system
CO4	To study the origin and growth of culture and agriculture and its basic concepts
CO5	Understand the concept of space and social process and present status
Course Code:Gg-306	**SECOND Year MA/MSc- Name of Course/paper -Geoinformatics-III**
CO1	Understand the History of Remote Sensing
CO2	2. Know Arial Photographs and Satellite Imageries
CO3	3. Acquire Knowledge about Indian Remote sensing.
CO4	4. Investigate components and function of GIS
CO5	5. Study GIS Data models.
Course Code:Gg-307	**SECOND Year MA/MSc- Name of Course/paper- Practical in Geoinformatics**
CO1	Understand the History of Remote Sensing
CO2	2. Know Arial Photographs and Satellite Imageries
CO3	3. Acquire Knowledge about Indian Remote sensing.

CO4	4. Investigate components and function of GIS
CO5	5. Study GIS Data models
Course Code: Gg-401	**SECOND Year MA/MSc- NANE OF THE COURSE -Theoretical and Applied Geography**
CO1	Students understand the pre history of geographical Ideas in different duration formGreeks, roman's, Arab and impact of explorations & discoveries.
CO2	Understand the modern geographical thoughts and contribution of eminent geographers.
CO3	To learn about the beginning of modern geography, fundamental concepts and models in geography
CO4	Examining the sciences of geography and Geography in the Second Half of the 20th Century and its trends in geographical thoughts
CO5	Compare between the fundamental concepts in geography these are General Geography v/s Regional Geography
Course Code: Gg-402	**SECOND Year MA/MSc- NANE OF THE COURSE -Principles of Remote Sensing and GIS**
CO1	Acquire Knowledge about Indian Remote sensing.
CO2	4. Investigate components and function of GIS
CO3	5. Study GIS Data models.
CO4	6. Introduce GPS and Its Functions.
CO5	7. Make use GIS & GPS software
Course Code: Gg-403	**SECOND Year MA/MSc- NANE OF THE COURSE -Gg-403 Practicals in Remote Sensing and GIS**

CO1	To Develops Skill of soil and water analysis techniques.
CO2	To Suggests fertilizers to the crops according soil analysis.
CO3	To collect soil and water Sample.
CO4	Introduce GPS and Its Functions.
CO5	Investigate components and function of GIS
Course Code: Gg-424	**SECOND Year MA/MSc- NANE OF THE COURSE -Natural and Manmade Hazards**
CO1	Describe and utilize spatial data, geographic information systems (GIS) n disaster risk assessment and management
CO2	Utilize existing sources of historical disaster information
CO3	Apply GIS/remote sensing in hazard, vulnerability, and risk assessment
CO4	Utilize risk information in emergency preparedness planning
CO5	Visualize hazard and risk information
Course Code: Gg-441	**SECOND Year MA/MSc- NANE OF THE COURSE -Principles of Regional Geography & Project Work**
CO1	Understand the location Physiography, Drainage, Climate, and Vegetation of India
CO2	To know the silent feature, problems and prospects of Agriculture.
CO3	Study the Problems And Prospect of Industrial Area.

CO4	Population Composition of India to other countries.
CO5	4. Understand the socio economic condition of the villages.
Course Code: Gg-404	**SECOND Year MA/MSc- NANE OF THE COURSE -Geography of Food Security of India**
CO1	Understand food security and agricultural issues in India and internationally.
CO2	Analyse the relationship between food and agricultural activities and society and the environment.
CO3	Translate generic concepts and methods into reviews of contemporary, food production, exchange and policy
CO4	Critically assess theoretical and conceptual issues relating to the emerging risks to food and agricultural systems.
Course Code: Gg-405	**SECOND Year MA/MSc- NANE OF THE COURSE -Geography of Health**
CO1	1. Understand the Ecology and epidemic Deciles.
CO2	2. Find out the Geographical Background of Diseases.
CO3	3. Create Awareness o malnutrition and hygiene.
CO4	4. Understand the Process of health care planning in India.
CO5	5. Function of WHO, UNICEF and RED CROSS
Course Code: Gg- 407	**SECOND Year MA/MSc- NANE OF THE COURSE -Regional Geography of SAARC countries**
CO1	Understand the location Physiography, Drainage, Climate, and

CO2	Vegetation of India
CO3	2. To know the silent feature, problems and prospects of Agriculture.
CO4	3. Study the Problems And Prospect of Industrial Area.
CO5	Population Composition India.
6) Program: M. A. (Politics)	
Course Code 01: -------	**First Year MA- Name of Course/paper- Political Theory**
CO1	This course Intruduces political theory.
CO2	It highlights contemporary normative debates and places them in a historical prspective.
CO3	It also emphasises the interplay of theory and practice in the political process.
CO4	The Course projects the global and interdisciplinary orientation of political theory.
CO5	.It also emphasises the interplay
Course Code: ---02----	**First Year MA- Name of Course/paper Public Administration C-2**
CO1	This course seeks to help students understand important concept of Public Administration..
CO2	This course seeks to help students understand important approaches and theories of Public Administration.

CO3	The Course aims to equip to students with understanding in the fild of Public Administration.
CO4	the course will be useful for students who seek to understand and analyze broad transformations in the study of aAd.
Course Code: --03-----	**First Year MA- Name of Course/paper Political Institutions in India C-3**
CO1	The course introduces the student to the leading institutions of the Indian political system.
CO2	To the changing nature of these institutions.
CO3	Students Introduces to the Indian Constitution.
CO4	functions of the main institutions the course will try to acquaint students with the idea of
CO5	institutional balance of power as discussed in the Indian constitution .
Course Code: ---04----	**First Year MA- Name of Course/paper Indias Foreign Policy O-3**
CO1	This paper introduces the student to an in depth analysis account of India's foreign policy.
CO2	This paper introduces the student to the decision making process.
CO3	This paper introduces the student to an in depth analysis account of India's foreign policy.
Course Code: --05-----	**First Year MA Name of Course/paper Public Policy C-4**
CO1	This paper introduces the student to public policy in india.
CO2	The purpose of this course is to provide students an understanding of the basic concept.

CO3	The course also seeks to help students.
CO4	understand policy processes and actors involved in it by studying specific policies.
CO5	Students understand and analyze policy making in practical context.
Course Code: ---06---	**First Year MA Name of Course/paper Issues in World Politics**
CO1	This course applies the theories and used to illustrate how each level of analysis the international system.
CO2	This paper introduces the student to world politics.
CO3	The major issues of the twenty first century- security, economics and transnational issues
CO4	This paper introduces the student to the decision making process.
Course Code: --07-----	**First Year MA/MCom/MSc- Name of Course/paper Comparative Politics**
CO1	The purpose of this course is to acquaint the students with the sub-discipline of comp.politics with the following sub.
CO2	(i) To understand the trajectory of the sub-discipline.
CO3	(ii) To understand the significance of the comparative methodology
CO4	(iii) To understand the dynamics of domestic politics across the countries.
Course Code: --08-----	**Second Year MA- Name of Course/paper Human Rights**
CO1	This course is aimed at introducing the basic idea of Human rights, equip the students.

CO2	The Idea of Human Rights.
CO3	student with an ability to distinguish between human rights, fundamental and also between individual & group rights.
CO4	Human Rights Organisations and Movements
CO5	discusses the implementation of human righin the context of rights movements in India
Course Code: ---09----	**second year M A Name of course Political thinking in Modern India.**
CO1	The course introduces the student to the key ideas of political thinking in modern india.
CO2	the course is woven around ideas/ issues and not around individual thinkers.
CO3	Students will be encouraged to understand and decipher the diverse,often contesting ways in which ideas of nationalim.
CO4	The idea of the nation : Tilak, Azad
Course Code: --10-----	**Second Year MA- Name of Course/paper - Political Sociology.**
CO1	This Course will introduce the overall scope of the sub-discipline of political sociology.
CO2	The focus of the course will be on the political sociology of power.
CO3	T he emphasis is on the nature of power in modern societies.
CO4	Students are also expected to understand different forms of justification of power and the role of ideology in the regard.
Course Code: ---11----	**Second year M.A. Name of Paper- Theory of International Relations**

CO1	This course introduces the students to the evolution and important theories.
CO2	Students need a brief history of international politics
CO3	Introduction: The end of the Cold war, the Classical tradition and International Change
CO4	Behaviouralism and Systemic explanations, Structure and Polarity.
Course Code: --12-----	**Second year MA Name of Paper- Comp.Politics II**
CO1	This course expects students to understand comparisons in the context of concret process.
CO2	this course in comparative politics will allow students to understand the nuances of democratic politics
CO3	this course exsept students to understand comp. politics .
CO4	Social Divisions and Politics,caste language and ethincity.
Course Code: ---13---	**Second Year MA/- Name of Course Indian Administration**
CO1	The purpose of this course is to provide students with broad understanding of key
CO2	dimensions of Indian Administration functioning at different levels.
CO3	The objective of the course
CO4	is to help students to understand and analyze the administrative reforms introduced recently to
CO5	Prime Minister, Prime Minister's Office (PMO) and Council of Ministers
Course Code: ---14----	**Second Year MA Traditions of Political Thought**

CO1	the purpose of this course is provide students understanding the political thoughts.
CO2	The chief objective is to project the history of political thought as a series of critical.
CO3	Interconnected and open-ended conversations about the ends and means of the good life.
CO4	The world over the last three millennia.
7) Program: M. Com.	
Course Code: 101	**First Year Mcom SEM I Name of Course/paper- Management Accounting**
CO1	Students Will able to enhance the abilities of learners to develop the concept of management accounting and

	its significance in the business.
CO2	Students Will able to enhance the abilities of learners to analyze the financial statements.
CO3	Students Will able to understand, develop and apply the techniques of management accounting in the financial decision making in the business corporates.
CO4	Students Will able to understand and calculate managerial decision making and control.
Course Code: 102	**First Year Mcom SEM I Name of Course/paper Stratigic Management**
CO1	Students will understand in the modern business environment
CO2	Students will able to develop the analytical , technical and managerial skills of students in the various areas of Business Administration
CO3	Students will able to empower with necessary skill to become effective future managers and leaders
CO4	Students will able to develop Technical skills among the students for designing and developing effective Functional strategies for growth and sustainability of business
Course Code: 107	**First Year Mcom SEM I Name of Course/paper- Advance Cost & Work Accounting I**
CO1	Students will able to understand the Scope of Cost Accounting in any business activity.
CO2	Students will able to understand Cost Accounting treatment in relation to Material Cost Accounting, employee cost and overheads.
CO3	Students will able to establish the interface between Cost Accounting Standards and the various elements of Cost.
CO4	Students will able to learn application of different methods of costing in Manufacturing and Service industries.
Course Code: 108	**First Year Mcom SEM I Name of Course/paper Costing Techniques & Responsibility Accounting II**

CO1	Students will able to enhance the abilities of learners to develop the concept of Cost and Management Accounting and its significance in the business
CO2	Students will able to understand, develop and apply the techniques of costing in the decision making in the corporate world.
CO3	Students will enhance with knowledge and skill to design and implement Cost Control through Costing Techniques.
Course Code: 113	**First Year Mcom SEM I Name of Course/paper Businrss Administration I (Production & Operration Management)**
CO1	Students will able to understand and develop deep insight of Production & Operation Management.
CO2	Students will able to understand & identity business problems involving operational function, planning and control, design development and quality management
CO3	Students will able to understand Demonstrate awareness and importance of application, operation and supply chain management.
CO4	Students will able to develop skills necessary to effectively analyze and synthesize the many inter relationship inherent in complex socio-economic productive systems.
CO5	Students will able to increase the knowledge and perspective to gain from emerging trends in production and operation management.
Course Code: 114	**First Year Mcom SEM I Name of Course/paper Businrss Administration II (Financial Management)**
CO1	Students will able to acquaint with knowledge of various Financial Management terminologies (Investment ,Credit Planning , Working Capital Management)
CO2	Students will able to understand the concepts relating to Financing & Financial Statement Analysis
CO3	Students will able to utilize the information gathered to reach an optimum conclusion by a process of reasoning
CO4	Students will be able to understand to evaluate , make decisions and provide recommendations Depth of the program – Fundamental Knowledge

Course Code: 115	**First Year Mcom SEM I Name of Course/paper Banking & Finance I (Legal Framework of Banking)**
CO1	Students will able to acquaint with legal framework in which the Indian banking is working today.
CO2	Students will be aware about the latest developments in the field of banking law.
CO3	Students will be able to understand modern banking practices.
CO4	Students will be able to establish a link between the legal provisions and the practical aspects of banking.
Course Code: 116	**First Year Mcom SEM I Name of Course/paper Banking & Finance II (Central Banking)**
CO1	Students will able to acquaint with RBI's various functions.
CO2	Students will be aware about the latest developments in the field of Para banking and NBFCs in India.
CO3	Students will be able to understand the role of central banking especially in India.
CO4	Students will able to acquaint with sound knowledge of working and techniques of central bank.
Course Code: 201	**First Year Mcom SEM II Name of Course/paper Financial Analysis & Control**
CO1	Students will be able to acquire knowledge of financial analysis and control tools
CO2	Students will able to Make appropriate application and uses of financial analysis and control
Course Code: 202 A	**First Year Mcom SEM II Name of Course/paper- Industrial Economics**
CO1	Students will able to make the students understand concepts of industrial economics
CO2	Students will able to understand theories of industrial economics

CO3	Students will able to understand about sources of industrial finance and Indian industrial growth
Course Code: 207	**First Year Mcom SEM II Name of Course/paper - Costing III (Application of Cost Accounting)**
CO1	Students will able to understand the concept of integral and non-integral cost accounting.
CO2	Students will able to understand Product Life Cycle costing and Value Chain Analysis
CO3	Students will able to understand the mechanism of Activity Based Cost Management
CO4	Students will able to understandthe utility of Cost Accounting data during transfer of product/services from one enterprise to the other either at national or at global level.
Course Code:208	**First Year Mcom SEM II Name of Course/paper - Costing IV (Cost Control & Cost System)**
CO1	Students will able to understand the knowledge and skill to design and implement cost control, cost reduction programme and different cost systems
Course Code: 213	**First Year Mcom SEM II Name of Course/paper - Businrss Administration III (Business Ethics & Professional Values)**
CO1	Students will able to investigate whether ethics set any boundaries on competition , marketing, sales and advertising
CO2	Students will able to validate or correct , personal ideas about various ethical perspectives
CO3	Students will able to develop their own considered judgment about issues in Business Ethics
CO4	Students will able to foster more careful, disciplined thinking in trying to resolve issues in business ethics
CO5	Students will able to play a constructive role in improving the sustainable development with which they may become involved
Course Code: 214	**First Year Mcom SEM II Name of Course/paper - Business Administration IV (Elements of Knowledge Management)**

CO1	Students will able to develop Analytical and Research oriented skills among the students.
CO2	Students will able to understand value application and relevance of Knowledge management in today's corporate world.
CO3	Students will able to promote research and innovation ideas based on Knowledge Management.
CO4	Students will able to enhance knowledge level and practice of linking theoretical background with applied Social Science.
Course Code: 215	**First Year Mcom SEM II Name of Course/paper Banking & Finance III (Banking law & practices)**
CO1	Students will able to acquire sound Knowledge of banking laws and practices in India.
CO2	Students will able to aware about the latest developments in the field of banking law.
CO3	Students will able to understand modern banking practices.
CO4	Students will able to establish a link between the legal provisions and the practical aspects of banking.
Course Code: 216	**First Year Mcom SEM II Name of Course/paper Banking & Finance IV (Monitory Policy)**
CO1	Students will able to create awareness regarding the objectives and importance of monetary policy.
CO2	Students will able to aware about the latest developments in the field of monetary policy committee in India.
CO3	Students will able to understand the role of RBI in financial inclusion.
CO4	Students will able to understand the recent policy changes announced by RBI.
Course Code:- 301	**M.Com. II : Business Finance**

CO1	To acquaint the students with corporate finance required for Indian Industries.
CO2	To enable the students to understand the traditional theories of capitalization and dividend distribution practices.
CO3	To make the students aware about the latest developments in the field of corporate finance.
CO4	. To give detail exposure of working capital management practice of finance to students Skills to be developed:
Course Code: - 302	**M.Com. II : Research Methodology for Business**
CO1	To enhance capabilities of students to conduct the research in the field of business and social sciences
CO2	To acquaint the students with the areas of Business Research Activities
CO3	To enable students in developing the most appropriate methodology for their research studies
CO4	To make them familiar with the art of using different research methods and techniques
Course Code: - 307	**M.Com. II : Advanced Cost Accounting & Cost system- Cost Audit**
CO1	To provide adequate knowledge to the students on Cost Audit Practices.
CO2	To acquaint students to understand the role and responsibilities of Cost Auditor
CO3	To familiarise the students how Cost Audit Report is prepared.
Course Code: 308	**M.Com. II : Advanced Cost Accounting & Cost system- Management Audit**
CO1	To acquaint the students with the knowledge of the techniques and methods of planning and execution of Management Audit.
CO2	To provide knowledge to students on operational audit.

CO3	To familiarise the students with the knowledge of corporate image.
Course Code: 313	**M.Com. II : Business Administration-Human Resource Management**
CO1	To impart adequate knowledge and analytical skills in the field of HRM, HRP and development, Recruitment and Selection Process
CO2	To understand the basic concepts of Human Resource Management and changing role of HRM in business
CO3	To understand the concepts of Training and Development, Performance Appraisal and Merit Rating
CO4	To expose the students to the concept, significance and uses of the concepts like Retirement/ Retrenchment Strategies and Recent Trends in HRM
CO5	To know the concept of Competency mapping
CO6	To know the concept of Competency mapping
Course Code: 314	**M.Com. II : Business Administration-Organizational Behaviour**
CO1	To provide in depth knowledge about process of formation of group behaviour in an organization set up
CO2	To make the students understand various concepts of organization behaviour
CO3	To know the motivational process and emotional intelligence.
CO4	To understand the concept of stress and conflict and effects of work culture
Course Code: 315	**M.Com. II : Advanced Banking & Finance-Foreign Exchange**
CO1	To acquaint the students with financing of foreign trade
CO2	To provide an understanding of various aspects of foreign exchange market.

CO3	To give an understanding about exchange rate mechanism and factors affecting exchange rates.
CO4	To make students aware of recent development in foreign exchange market
Course Code: 316	**M.Com. II : Advanced Banking & Finance-International Finance**
CO1	To Provide understanding of International Financial market.
CO2	To offer exposure of international banking
CO3	. To acquaint the students with International monetary system.
CO4	. To give understanding of operations of international Financial Institutions.
Course Code:- 401	**M.Com. II : Capital Market and Financial Services**
CO1	To make the students aware about the latest developments in the field of capital market in India.
CO2	To acquaint the students with working of capital market.
CO3	To enable the students to understand various transactions in stock exchanges and agencies involved in it.
CO4	To give exposure of financial services offered by various agencies and financial adviser to students.
Course Code:- 402	**M.Com. II : Industrial Economic Environment**
CO1	To make students aware about Industrial patternand growth in India and Industrial policies of India since independence
CO2	To provide knowledge about basic issues in Industrial Economic Environmentto students.
CO3	To study the progress and current problems of major industries in India.

Course Code: - 407	**M.Com. II : Advanced Cost Accounting & Cost system- Recent Advances in Cost Auditing and Cost System**
CO1	To acquaint students with Standards and applications Of Cost Accounting
CO2	To aware students with the recent trends in Cost Accounting and Cost Systems.
CO3	To acquaint students with recent trends in Cost Accounting.
CO4	To familiarise students with GST and Productive Audit.
Course Code: 413	**M.Com. II : Business Administration-Recent Advances in Business Administration**
CO1	To develop an understanding about tools and their application in the business. 3. To understand the basic concepts of Change Management and their approaches.
CO2	To familiarize the students with the recent advancements in business administration
CO3	To impart adequate knowledge and analytical of cross cultural Management.
CO4	To understand the basic concepts of Change Management and their approaches.
CO5	To expose the students to the concept, Innovation Management
CO6	To impart the basic concept and strategies of customer centric Management..
Course Code: 415	**M.Com. II : Advanced Banking & Finance-Recent Advances in Banking and Finance**
CO1	To keep the students abreast with the innovative practices introduced by RBI in day to day banking in India.
CO2	To enable students understand new developments in banking industry

CO3	To enable the students to understand the various modern services offered by banks.
CO4	To give exposure of financial services offered by various agencies and financial adviser to students.

8) Program: M. Sc. (Organic Chemistry)	
Course Code: -CCTP-1	**M.Sc. I : Sem-I: Physical Chemistry**
CO1	Students should learn rate of reaction, factors affecting on rate of reaction, reversible reaction, irreversible reaction, parallel reaction.
CO2	Students should know Collision theory, activated complex theory, relaxation method and it's aapplications.
CO3	Students should know Michaelis mechanism, effects of temperature, enzyme activity, Boltzmann distribution law, partition function, Maxwel- Boltzmann law, Fermi-Dirac statistics.
Course Code:CCTP-2 CHI-130	**M.Sc-I Sem-I: Inorganic Chemistry-I (Molecular Symmetry and Chemistry of Main Group Elements)**
CO1	Student should visualize/ imagine molecules in 3 dimensions.
CO2	Students should understand the concept of symmetry and able to pass various symmetry elements through the molecule. Student should correlate the application of symmetry to spectroscopy.
CO3	Students should know to the concept and point group and apply it to molecules. Student should understand the importance of Orthogonality Theorem. Students hould able to learn the rules for constructing character table. Using reduction formulae should be able to find out the possible type of hybridization. Student should know the concept of SALC. Student able to find out character for reducible representation.
CO4	Students should know to understand product of symmetry operations. Students apply the concept of point group for determining optical activity and dipole moment, Students able to find out the possible modes of vibration. From the previous knowledge of symmetry student must able to find out which mode are IR active.
CO5	Student should understand the detail chemistry of S and P block elements w.r.t. their compounds, their reactions and applications.
CO6	Student should understand the detail chemistry of S and P block elements w.r.t. their compounds, their reactions and applications.

CO7	To learn the advance chemistry of boranes, fullerene, zeolites, polymers etc.
CO8	Student should understand the detail chemistry of S and P block elements w.r.t. their compounds, their reactions and applications.
CO9	Student should understand the detail chemistry of S and P block elements w.r.t. their compounds, their reactions and applications.
CO10	Student should understand the detail chemistry of S and P block elements w.r.t. their compounds, their reactions and applications.
Course Code:CCTP-3 CHO-150	**M.Sc-I Sem-I: Organic Chemistry-I(Basic Organic Chemistry)**
CO1	Students should understand structure and reactivity of aromatic compounds and heterocyclic compounds compounds
CO2	Students should know stereochemical principles and conformational analysis
CO3	Students should understand structure, stability and reactions of ractive intermediates
CO4	Students should know various oxidising and reducing agents
Course Code:CBOP-1 CHG-190	**M.Sc-I Sem-I: Inorganic Material Analysis, Synthesis and Applications**
CO1	Students should able perform chemical analysis of inorganic materials.
CO2	Students should able to perform alloy chemical analysis.
CO3	Students should perform Synthesis of solid state materials / nano-materials and chemical analysis.
CO4	Students should understand applications of Solid State Materials and chemical analysis.
Course Code:CCPP-1 CHP-107	**M.Sc-I Sem-I: Basic Practical Chemistry**

CO1	Students should able to apply Statistical treatment of experimental data
CO2	Students should able to determine order of reaction by chemical kinetics
CO3	Shtudents should perform chemical analysis by using Colorimetry and spectrophotometry
	Students should understand importance of chemical safety and Lab safety while performing experiments in laboratory
	Students should able to purify organic copounds by various techniques
CO4	Students should carry synthesis of organic compounds by green chemistry route
Course Code: CCTP-4	**M.Sc. I : Sem-II: Physical Chemistry**
CO1	Students should know concepts of Spectroscopy, Rotation of molecule, theories and principles, vibrational spectroscopy and it's spectra, it's application for structural elucidation.
CO2	Students should learn some basic concepts of scattered light, Raman Effect, Raman spectroscopy, and its use in structure elucidation.
CO3	Students should know basic concepts and decay kinetics of radioactive elements, application of radiactivity. Students should know Various effects of radioactivity, measure ment of radiation absorption, and it's effect
CO4	Students should know Various applications of Radioactivity, use of Radioactivity in medicine, age determination, power production.
Course Code:CCTP-5 CHI-230	**M.Sc-I Sem-II: Inorganic Chemistry-II (Coordination and Bioinorganic Chemistry) Section-I and Section-II**
CO1	Student should able to find out the no of microstates and meaningful term symbols, construction of microstate table for various configuration.Hund's rules for arranging the terms according to energy.
CO2	Student should understand interelectronic repulsion.
CO3	Student able to find out splitting of the free ion terms in weak ligand field and strong ligand field. To draw correlations diagram for various configurations in Td an Oh ligand field. Student should know basic d-d

	transition, d-p mixing, charge transfer spectra.
CO4	Student should know basic instrumentation and selection rules and relaxation in rules. Students Should able to solve numerical based on crystal field parameters. Various experimental methods to find out magnetic moment. Understand the various Quenching of orbital angular momentum.
CO5	Similarities in coordination theory for metal complexes and metal ions complexed with biological ligands. Importance and transport of metal ions.
CO6	Students should understandassive transport metal ions by ionophores and gramicidin.
Course Code:CCTP-6 CHG-290	**M.Sc-I Sem-II: Organic Chemistry-II (Photochemistry, Pericyclic and Organic spectroscopy)**
CO1	Students should understand mechanisms involved in photochemical and pericyclic reactions
CO2	Students should able to use Spectroscopic Methods in Structure Determination of Organic Compounds
CO3	Students should understand structure, stability and reactions of ractive intermediates
Course Code:CBOP-2 CHG-290	**M.Sc-I Sem-II: General Chemistry-II Introduction to Chemical Biology-II (Section-I)**
CO1	The goal of this course is to introduce students to fundamental concepts in Chemical Biology and methods of chemistry used to solve problems in molecular and cell biology. Students will be able to explore new areas of research in both chemistry and allied fields of science and technology.
CO2	Students will be able to function as a member of an interdisciplinary problem solving team. Describe the importance of chemical biology research and interdisciplinary work.
CO3	To impart the students thorough idea in the chemistry of carbohydrates, amino acids, proteins and nucleic acids etc. Describe the importance of chemical biology research and interdisciplinary work.
CO4	Be able to describe the chemical basis for replication, transcription, translation and how each of these central processes can be expanded to include new chemical matter. Develop skills to critically read the literature and effectively communicate research in a peer setting.

Course Code: CBOP-2 **CHG-290**	**M.Sc. I : Sem-II: General Chemistry**
CO1	Students should know hydrolysis constant of weak acids, Change in Gibbs free energy from conductometic calculations
CO2	Students should learn stability of complex ions, Solubility of sparingally soluble salts, from potentiometric calculations.
CO3	Students should know Isoelectric point of amino acid from PHetric calculations. Student should learn analysis of poweder
Course Code:CCPP-2 **CHP-227**	**M.Sc-I Sem-II: Practical Course-II: Semester –II. Basic Practical Chemistry.**
CO1	Students should perform Synthesis of coordination complexes and its chemical analysis.
CO2	Students should perform Relevant chemical analysis by Inorganic Conductometry and Use molar concentrations for volumetric /estimations/synthesis experiments
CO3	Students should able to use inorganic characterization techniques
CO4	Students should able to perform chemical analysis by Ion – Exchange Chromatography
CO5	Students should able to to perform chemical analysis by Solvent Extraction and colorimetry
Course Code: CCTP7 **CHO-350**	**Organic Reaction Mechanism andBiogenesis**
CO1	1.Student should know Methods for determining Reaction Mechanisms
CO2	2.Student should able to understand Free Radicals Generation, stability, reactiv
	ity,Free radical substitution,addition to multiple bonds

CO3	3.Student should understand the concept of Linear Free Energy Relationships
CO4	4.Student should able to know Hammet plots, Hammet equation, substituent constants,
	reaction constants, use of Hammet plots
CO5	5.Student should able to know the knowledge of terpenoids
CO6	6.Student should able to know the chemistry of shikimic acid pathway
Course Code:CCTP-8, CHO-351	**Structure Determination of Organic Compounds by Spectroscopic Methods**
CO1	1.Students should able to solve 1H-NMR problems and should also able to draw the 1H-NMR spectrum
	for simple organic compounds mentioning multiplicity pattern an constant with the help of "Tree Diagram"
CO2	2.Students should able to use 13C-NMR data to interpret the structure
CO3	3. Student should understand 19F and 31P NMR spectroscopy
CO4	4.Student should understand 2D NMR spectroscopy in structure elucidation
CO5	5.Student should understand concept of mass spectroscopy
CO6	6.Student should know the aplication of mass spectroscopy
CO7	7.Student should able to solve problems based Spectroscopic techniques "
Course Code:CCTP-9, CHO-352	**Stereochemistry and Asymmetric Synthesis of Organic Compounds**

CO1	1.Student should understand Conformations of polysubstituted cyclohexane, six membered rings
	with SP2 carbon, heterocycles with N and O
CO2	2.Student should understand the Stereochemistry of fused and bridged ring systems
CO3	3.Student should able to know Determination of configuration, Cram's rule, Cram's cycle model,
	Cram's dipolar model, Felkin-Anh Model
CO4	4.Student should understand the concept of Decalols, Decalones, Octahydronaphthalenes,
	decahydroquinolines
CO5	5.Student should know Introduction of Asymmetric Synthesis, Chirol pool and Chiral auxillaries.
CO6	6.Student should know Asymmetric Organocatalysis
CO7	7.Student should understand Asymmetric Aldol Reaction, Enantioselective, diastereoselective
	and double diastereoselective Aldol reactions.
CO8	8.Student should understand the Transition Metal-Catalyzed Homogeneous Asymmetric Hydrogenation
CO9	9.Student should know Transition Metal-Catalyzed Homogeneous Asymmetric Hydroxylation
	and Epoxidation and Asymmetric Phase-Transfer and Ion Pair Catalysis "
Course Code:CBOP-3, CHO-353(A)	**Protection - De-protection, Chiron approach and Carbohydrate**

CO1	1.Student should understand the Protection and de-protection of functional group in organic synthesis
CO2	2.Student should understand the concept of Chiron approach, The concept of chiral templates
	and chirons wherein the carbon skeleton is the chiral precursor
CO3	3.Student should able to know the Basics of Carbohydrates ,Introduction of sugars, structures of
	monosaccharides,triose,tetrose, pentose, hexose, D/L forms of aldoses and ketoses in Fisher projections
CO4	4.Student should understand the Synthesis of Glycosides: glycosyldonar acceptor concept, general
	methods for glycosyl bond formation
CO5	5.Student should understand the synthesis of disachharides,trisachharides,polysachharides.
Course Code: CCTP- 10, CHO-450	**Chemistry of Natural Products**
CO1	1.Student should have the knowledge of Understanding and planning of total synthesis while
	maintaining the stereochemistry.
CO2	2.Student should understand the Total Synthesis of Hirsutellone B ,Ribisins A and B ,Subincanadine E
CO3	3.Student should know the chemistry of Vannusals
CO4	4.Student should know the chemistry of Pinnaic acid."
Course Code:CCTP- 11, CHO-451	**Organometallic Reagents in Organic Synthesis**

CO1	1.Student should know the chemistry of Transition metal complexes in organic synthesis
CO2	2.Student should understand the C=C formation reactions such as Wittig, Horner-Wordworth-Emmons
	, Shapiro, Bamford- Stevens, McMurry, Julia-Lythgoe and Peterson olefination reactions.
CO3	3. Student should understand the Multi-component reactions: Ugi, Passerini, Biginelli and Mannich reaction
CO4	4. Student should know the Ring formation reactions like Pausan-Khand, Bergman and Nazerov cyclization
CO5	5.Student should know the Metathesis Schrock and Grubbs catalyst, Olefin cross coupling (OCM), ring closing (RCM) and ring opening (ROM) metathesis, application in polymerization and synthesis of small organic molecules.
CO6	6.Student should understand the Use of Boron and Silicon reagents in organic synthesis,
	Baylis Hilman, Eschenmoser-Tanabe fragmentation, Mitsunobu reaction."
Course Code:CBOP-4, CHO-452(A)	**Concepts and Applications of Medicinal Chemistry Course Outcomes**
CO1	1.Student should know Introduction to Peptides and proteins, Proteins as biological catalyst Nucleic acids.
CO2	2.Student should understand the Peptides, sequencing and applications in therapeutics,
	Solution phase and solid phase peptide synthesis
CO3	3.Student should know the Introduction to medicinal Chemistry. History, drug targets, Drug discovery
	, design and development
CO4	4.Student should understand the Pharmacokinetics and Pharmacodynamics of drug

CO5	5.Student should know the Structure and activity Relationship: QSAR, Applications of SAR and
	QSAR in drug design
CO6	6.Student should understand the Introduction, Developments, SAR, Mode of action, limitations and
	adverse effect of Anti-infective Agents, Beta lactam antibacterial agents
Course Code: CCPP-3, CHO-354	**Practical-I Solvent Free Organic synthesis**
CO1	Student should understand the Solvent Free various Carbon–Carbon Bond Formation reactions.
CO2	Student should understand the Solvent-Free C–N Bond Formation,Solvent-Free C–S Bond Formation,Solvent-Free N–N Bond Formation "
Course Code: CBOP-5, CHO-453	**Practical-III Ternary Mixture Separation and Carbohydrates Synthesis and Isolation Natural Products**
CO1	1.The students should be able to Understand Ternary Mixture Separation and employ concept of type determination and separation
CO2	2.Student should know yhe Meticulously record physical constants
CO3	3. Student should able to Perform micro scale chemical elemental analysis
CO4	4. Student should able to Perform qualitative estimation of functional groups
CO5	5. Student should understand the Recrystallize /distill the separated compounds
CO6	6. Student should able to Extend these skills to organic synthesis
CO7	7.Student should understand the Carbohydrates Synthesis and Isolation Natural Products

CO8	8.Student should understand the Isolation of pigments from the natural products & should be able to collect reasonable quantities of color pigments to do the
	characterization
CO9	9.Student should understand the Isolation of essential oils from the natural products and Students should be able to collect a reasonable quantities of essential oils to do the
	characterization
CO10	10.Student should understand the Isolation of medicinally important component from the natural products
Course Code: CCPP-04, CHO-454	**Practical-II: Convergent and Divergent Organic**
	Syntheses
CO1	1.Student should able to perform Convergent and Divergent Organic
	Syntheses
CO2	2.Student should understand the MSDS reading , purification of reactants and reagents, mechanism, stoichiometry
CO3	3.Student should able to perform work up, isolation and
	purification of products,
	physical constants characterization using any spectroscopic methods

9) Program: M. Sc. (Analytical Chemistry)	
Course Code: CCTP-7	**M.Sc. IInd: Electrochemical and Thermogravimetric Methods of**
CHA-390	**chemical analysis**
CO1	Learns the fundamentals of Electrochemistry and Thermogravimetry
CO2	Understand the instrumentation of Electrochemistry and Thermogravimetry
CO3	Appreciates the Principles of Electrochemistry and Thermogravimetry
CO4	Gains the potential about application of electrochemistry and thermogravimetry in industry and
	in analytical laboratory.
CO5	Select particular method of analysis for sample to be analysed.
CO6	Solve numerical problems on electrochemistry and thermogravimetry
CO7	Interpret polarogram, cyclic voltammogram, pulse polarogram, thermogram, differential thermogram and DSC thermogram.
Course Code: CCTP-8	**M.Sc. IInd : Analytical Method Development and Extraction Techniques**
CHA-391	
CO1	Understand various terms in analytical extraction and method development and valication
CO2	Describe basic principles of analytical extraction method development and validation.

CO3	Select particular method of analysis for sample to be analysed.
CO4	Develop analytical method for analysis of given sample. Apply statistical treatment to the analytical data. Select appropriate parameters for the development of analytical method.
CO5	Describe applications analytical extraction and method development and validation in industry and in analytical laboratory
CO6	Differentiate among the methods of analytical extraction.
CO7	Apply statistical treatment to the analytical data. Select appropriate parameters for the development of analytical method
Course Code:CCTP-9	**M.Sc. IInd : Advanced Chromatographic Methods of Chemical Analysis.**
CHA-392	
CO1	Understand various terms in chromatography (GC and HPLC) and mass spectroscopy.
CO2	Explain instrumentations in chromatography (GC and HPLC) and mass spectroscopy.
CO3	Explain / describe i) basic principles of chromatography (GC and HPLC) and mass spectroscopy.
CO4	Describe applications chromatography (GC and HPLC) in industry and in Analytical laboratory.
CO5	Select particular method / instrumental parameters for analysis for sample GC /HPLC
CO6	Solve numerical problems on chromatography (GC and HPLC) and mass spectroscopy.
CO7	Integrate GC and HPLC chromatogram, Mass spectrum
Course Code:CBOP-3	**M.Sc. Iind : CBOP-3, CHA-393-A: Bioanalytical Chemistry**

Theory	
CHA-393	
CO1	Understand various terms in Electrophoresis, capillary electrophoresis, HPTLC, Body fluid analysis, ELISA, RIA.
CO2	Explain instrumentations in in Electrophoresis, capillary electrophoresis, HPTLC, Body fluid analysis, ELISA, RIA.
CO3	Describe the basic principles of chromatography (GC and HPLC) and mass spectroscopy, Separation in GC / HPLC column.
CO4	Describe applications chromatography (GC and HPLC) in industry
CO5	Select particular method / instrumental parameters for analysis for sample GC
CO6	Solve numerical problems on chromatography (GC and HPLC) and mass spectroscopy
CO7	Integrate GC and HPLC chromatogram, Mass spectrum
Course Code: CCPP3 CHA-394	**M.Sc. IInd : Practical I: Basics of Instrumental Methods of Chemical Analysis**
CO1	Maintain proper record of analytical data in notebook. Observer personal safety in laboratory and able handle all chemicals, instruments, etc safely in laboratory.
CO2	Define various terms involved practical methods of quantitative analysis
CO3	Select particular method / instrumental parameters for analysis of given sample
CO4	Give mathematical treatment to analytical data and able to interpret the results
CO5	Verify theoretical principle practically or apply theory to explain practical observations

CO6	To conclude the results able to take the decision regarding quality of sample.
CO7	Differentiate among the various analytical methods / techniques of chemical analysis.
Course Code: CCTP-10	**M.Sc. IInd: : Advanced Analytical Spectroscopic Techniques**
CHA-490	
CO1	Understand various terms in atomic absorption, atomic emission, fluorescence, ESR and electron spectroscopy
CO2	Student should know the instrumentation of atomic absorption, atomic emission, ICPAES, ICPAES-MS, fluorescence, ESR and electron spectroscopy.
CO3	To describe basic principles of atomic absorption, atomic emission, ICPAES, ICPAESMS,fluorescence, ESR and electron spectroscopy
CO4	Select appropriate methods for sample treatment in AAS / AES, ICPAES, ICPAES-MS.
CO5	Explain advantages of ICPAES-MS over AES spectroscopy, fluorescence spectroscopy.
CO6	Solve numerical problems on analysis all these spectroscopic methods.
CO7	Calculate theoretical parameters from ESR data and characterize compound.
CO8	Solve problems based on atomic absorption, atomic emission, ICPAES, ICPAES-MS,fluorescence, ESR and electron spectroscopy.
Course Code: CCTP-11	**M.Sc. IInd: : Chemical Methods of Pharmaceuticals Analysis**
CHA-491	
CO1	Understand various terms in pharmaceutical raw material and finished product

CO2	Explain various pharmaceutical dosage forms and types of raw materials used.
CO3	To describe basic principles of methods of pharmaceutical analysis according to IP.
CO4	Explain importance particular test in pharmaceutical raw material and finished product analysis.
CO5	Solve numerical problems on analysis pharmaceutical raw material and finished product
CO6	To perform total analysis of pharmaceutical raw material and finished product analysis according to IP / BP / USP.
CO7	Interpret IR spectra, HPLC chromatogram, UV-Visible spectra of pharmaceutical analysis.
CO8	Standardize analytical instruments according IP /BP/ USP.
Course Code: CBOP-4, CHA-492	**M.Sc. IInd: : A) Laboratory Automation and Environmental Analytical Chemistry**
CO1	Understand various terms in – i) Laboratory automation and sensors, ii) environmental pollution, analysis water and air.
CO2	Explain instrumentation of automated laboratory analysis and sensors.
CO3	To describe basic principles of automated laboratory analysis and sensors.
CO4	Explain importance of automated laboratory analysis and sensors.
CO5	Describe sources of water and air pollution and pollutants.
CO6	Describe / explain methods / techniques of sampling of water and air and their analysis.
CO7	Solve numerical problems on analysis water and air.

CO8	Draw conclusion regarding water and air quality from analytical results
Course Code: CBOP-5, CHA-493: Practical III	**M.Sc. IInd: : CHA-493-A: Optional Analytical Chemistry Practical**
CO1	Maintain proper record of analytical data in notebook. Observer personal safety in laboratory and able handle all chemicals, instruments, etc safely in laboratory.
CO2	Define / understand various terms involved practical methods of quantitative analysis.
CO3	To analyse organic and inorganic materials using appropriate chemical / instrumental methods.
CO4	Explain / describe basic principles of chemical / instrumental methods used for analysis. Able to handle particular instrument according to SOP.
CO5	Perform analysis of sample with described procedure. Able to handle analytical instruments.
CO6	Apply particular method / instrumental parameters for analysis of given sample.
CO7	Maintain appropriate reaction conditions as described in procedures.
CO8	To perform i) selective analysis of particular component from sample. ii) Analysis at trace level from sample.
Course Code: CCPP-4, CHA-494	**Practical II: Applied Analytical Chemistry**
CO1	Maintain proper record of analytical data in notebook. Observer personal safety in laboratory and able handle all chemicals, instruments, etc safely in laboratory.
CO2	Understand various terms involved practical methods of quantitative analysis.
CO3	To analyse organic and inorganic materials using appropriate chemical / instrumental methods.
CO4	Describe basic principles of chemical / instrumental methods used for analysis. Able to handle particular instrument according to SOP.

CO5	Perform analysis of sample with described procedure. Able to handle analytical instruments.
CO6	Apply particular method / instrumental parameters for analysis of given sample.
CO7	Maintain appropriate reaction conditions as described in procedures.
CO8	To perform i) selective analysis of particular component from sample. ii) Analysis at trace
10) Program: M. Sc. (Microbiology)	
MB501	**First Year MSc- Semester I- Name of paper: : Microbial systematics**
CO1	Students get versed with identification & classification methods of microbes.
CO2	Students understand how microbes are inter-related and derived from their ancesters is studied in this course.
CO3	Students learn how selective pressure enables a microbe to develop into new species different from their parent species.
CO4	Understanding the concept of unculturable bacteria & their identification. This deals with study of advanced molecular techniques
CO5	Students learn how microbes get evolved & they study evolutionary theories
MB502	**First Year MSc- Semester I-Name of paper: : Quantitative Biology**
CO1	Students learn mean,mode,median,regression & correlation under descriptive statistics.

CO2	Students are introduced to type I and type II hypothesis used for ststistical analysis.
CO3	Students learn about ideas of sampling methods used in ststistical analysis.
CO4	Students gets vesed with about probability &probability distribution to students.
MB503	**First Year MSc- Semester I-Name of paper: : Cell organization and biochemistry**
CO1	Students learn about structural features of amino acids and proteins and their functions.
CO2	Students get introduced with biochemistry and molecular biology technique.
CO3	Students get introduced to developmental biology in that hox code, mechanism of gastrulation, pattern formation in body axis
CO4	Students get introduced with ultrastructure and organization of eukaryotic cell, protein transport and cell cycle.
MBTE11	**First Year MSc- Semester I-Name of paper: : Fungal Systematics and Extremophiles**
CO1	Students learn about classification of fungi
CO2	Students get introduced with extrimophiles
MB CP I	**First Year MSc- Semester I-Practical course based on Biochemical Techniques (Compulsory course)**
CO1	Students learn to prepare buffer of Different pH
CO2	Students get ready to apply informatics and statistics to explore biological data for experimental and research purpose.
CO3	Students know about the conditions in which Extremophiles are exist in nature.

CO4	Students learn how to extract proteins using different methods
CO5	Students learn how to use spectrophotometer to estimate extract proteins.
CO6	Students gain knowledge about concept of two-dimensional chromatography and
	descending chromatography
CO7	By using Molecular Graphics Visualization Tool (e.g. Swiss PDB) students studied conformations of protein molecule.
MB 601	**First Year MSc- Semester II-Name of paper: : Instrumentation and Molecular Biophysics**
CO1	Students learnt about various methods of separation and detection of biomolecules.
CO2	Students get introduced with various methods of spectrophotometry and learnt their working and functions.
CO3	Students get introduced to biophysical techniques such as x-ray crystallography and NMR spectrometry.
CO4	Students learnt about radioisotopes used in biology ,confocal microscopy.
MB 602	**First Year MSc- Semester II-Name of paper: : Molecular biology**
CO1	Students knows about RNA processing & molecular techniques used to tag certain probes/RNA/DNA.
CO2	Students learn about tools and vectors used in genetic engineering.
CO3	Students get idea about genome projects of human ,plant & animals.
CO4	Students get knowledge about molecular diagnostic methods and their applications.

MB 603	**First Year MSc- Semester II-Name of paper: : Enzymology, Bioenergetics and Metabolism**
CO1	Students understand about enzyme kinetics, the mechanisms of enzyme catalysis, and the mechanisms of enzyme regulation in the cell.
CO2	Students Explain the concept of energy, cite examples and assess its importance to living organisms.
CO3	Students understand the properties of lipids at the chemical, molecular and biological levels that contribute to cellular function and diseases.
CO4	Students learn chemistry of carbohydrates, their structures, conformations and reactivities.
MB CP 2	**First Year MSc- Semester II-Practical course based on Instrmentation, Enzymology and Molecular biology (Compulsory course)**
CO1	Students gather information about Lac operon , plasmid isolation , construction of restriction digestion map ,plasmid curing and gene annotation.
CO2	Students get knowledge about purification of enzymes, Km,Vmax,Molecular extinction of biomolecules.
CO3	Students learn techniques for isolation of AFLA toxin and various enzymes producing microbes.
CO4	Students practice techniques of scientific communication and research methodology
CO5	Students gets Virtual lab exercise to understand instrumentation, experimentation,& interpretation of data
MBTE23	**First Year MSc- Semester II-Name of paper:Nitrogen Metabolism, respiration and Photosynthesis**
CO1	Students learnt about structural features of nitrgen metabolism
CO2	Students get introduced to anaerobic respiration.
CO3	Students learnt about Photosynthesis

MBPE23	**First Year MSc- Semester II-Name of course:Practical based on Nitrogen Metabolism, respiration and Photosynthesis**
CO1	Students can isolate of IAA producing organism, nitrogen fixing, sulphate reducing, lignin degraders and Cyanobacteria.
CO2	Students can detect siderophore, polyphenols and tannins,chlorophyll 'a' activity of cyanobacteria.
Course Code: CCTP 7(MB 701)	**M.Sc. II : Paper Title : Immunology**
CO1	Students understand the Structure and Function of the molecules, cells,cell receptors and organs involved in Immunity and different pathways involved in immune response.
CO2	Students learn to explain how the immune system recognizes foreign antigen and the significance of self/non-self discrimination. the immune system's ability to recognize millions of antigens, the basic mechanisms that regulate immune responses and maintain tolerance
CO3	Students understand the experimental immunology regarding vaccine development and significance of antigen antibody interactions in diagnostics.
CO4	Students understand immune response against tumors, also understand tumors evade immunity and could review strategies to combat tumors based on immunotherapy, including passive and active immunization
Course Code: CCTP 8(MB 702)	**M.Sc. II : Paper Title : Moiecular Biology**
CO1	Understand how dideoxynucleotides can be used to obtain DNA sequence information, genomic variation responsible for diseases.
CO2	Students can describe types and uses of transgenic animals & plants biotechnology and way of modification and its application.
CO3	Study of mobile DNA elements, types and role in diseases.
CO4	Understand the concept of proteomics, metabolomics and global biochemical network.
Course Code: CCTP 9(MB 703)	**M.Sc. II : Paper Title : Clinical Microbiology**

CO1	Students know about determinants of pathogenecity & how pathogens cause infection.
CO2	Students learn bacterial disease with respected to causative agents, general characters,detection methods,therapeutics and prophylaxis
CO3	Students get aquainted with viral diseases with respected to causative agents, general characters, detection methods, therapeutics and prophylaxis
CO4	Students get acquainted with fungal & pratozoal disease with respected to causative agents, general characters, detection methods, therapeutics and prophylaxis
Course Code: MBTE 31	**M.Sc. II : Paper Title : Cell Culture Techniques**
CO1	Understand animal cell culture techniques
CO2	Gain knowledge about cell culture techniques and their applications.
Course Code: MBPE 31	**M.Sc. II : Paper Title :Practicals based on Cell Culture Techniques**
CO1	Students understand how cells can grow under controlled environment generally out side the natural environment.
CO2	Students learn the knowledge to explain how viruses are cultivated using chick embryo fibroblast cell culture.
Course Code: MBCP 3	**M.Sc. II : Paper Title Practicals based on Compulsory Theory Credits.**
CO1	Students get to know different immunological techniques related to Ag-Ab interactions
CO2	Students can perform various immunological techniques.
CO3	Students can isolate different bacteria and fungi.
CO4	techniques related to egg inoculations.

Course Code: CCTP 10(MB 801)	**M.Sc. II : Paper Title :Pharmaceutical Microbiology**
CO1	Students understand drug discovery, drug design, types of drugs and their significance
CO2	Students could describe types of drug development processes, clinical trials
CO3	Students gain idea about types of regulatory authorities & their roles
CO4	Students understand the concept of drug metabolism, drug delivery, absorption, elimination.
Course Code: CCTP 11(MB 802)	**M.Sc. II : Paper Title :Microbial Technology**
CO1	Students know about bioreactor design and operation.
CO2	Students could learn process variables and monitoring in fermentation process.
CO3	Students learn microbial fermentation processes
CO4	Students understand Principle concepts of IPR, ISO and Validation Process
Course Code: MBTE 41	**M.Sc. II : Paper Title :Quality Assurance and Validation in Pharmaceutical Industry and Development of Anti-infectives**
CO1	Students understand rules in quality control and quality assurance in pharmaceutical industry.
CO2	Students learn about various susceptibility testing methods and CLSI Rules and testing against various pathogens.
Course Code:MBPE 41	**M.Sc. II : Paper Title :Practicals based on quality assurance andvalidation in pharmaceutical industry anddevelopment of anti-infectives**
CO1	Students learn sterility testing of antibiotic tablets, cough syrup and bulk preparation like surgical cotton, disposable syringe.

CO2	Students learn Extraction of bioactive principles and Estimation of its antimicrobial activity using standard guidelines (CLSI).
Course Code: MBTE 43	**M.Sc. II : Paper Title :Industrial Waste Water Treatment and Industrial Production of Vaccines**
CO1	Students understand principles of waste water treatment processes.
CO2	Students gain knowledge about vaccine development, stages and types.
Course Code: MBPE 43	**M.Sc. II : Paper Title :Practicals based onIndustrial Waste Water Treatment and Industrial Production of Vaccines**
CO1	Students learn about how to check microbial load of waste water
CO2	Students could check the potency of a toxoid based vaccine by immune diffusion assay & Prepare of Salmonella O and H antigen and estimation with known antibodies.
Course Code: MBCP 4	**M.Sc. II : Paper Title : Dissertation**
CO1	Students undertake a project and make some hypothesis and prove the hypothesis.
CO2	Students learn various techniques ad use different instruments during their research work.
CO3	Students can give solutions to enviornmental, medical and such issues.
11) Program: M. Sc. (Computer)	
Course Code: CSUT111	**M.Sc (Part I)- Principles of Programming Languages**

CO1	Master implementation techniques for interpreted functional languages and object-oriented languages.
CO2	Be familiar with language abstraction constructs of classes, interfaces, packages, and procedures.
CO3	Be familiar with using functional languages and be exposed to using logic language
Course Code: CSUT112	**M.Sc (Part I)- Design And Analysis of Algorithm**
CO1	Knowledge of Algorithm, asymptotic notation, sorting algorithm, searching algorithm, recursive algorithm, concept of divide and conquer strategies.
CO2	Concept of Greedy method, minimum cost spanning trees, dynamic programming.
CO3	Knowledge of DFS & BFS , Backtracking concept, concept of branch and bound technique(FIFO, LIFO, LCBB, TSP Problem)
CO4	Knowledge of Transform and conquer technique and problem classification.
Course Code: CSUT113	**M.Sc (Part I)-Database Technologies**
CO1	Provide an overview of the concept of NoSQL technology.
CO2	Provide an insight to the different types of NoSQL databases
CO3	Make the student capable of making a choice of what database technologies to use, based on their application needs.
Course Code: CSDT114B	**M.Sc (Part I)- Artificial Intelligence**
CO1	Find appropriate idealizations for converting real world problems into AI search problems formulated using the appropriate search algorithm. Given a search problem, analyze and formalize the problem (as a state space, graph, etc.), select the appropriate search method, and write the algorithm for it.
CO2	Implement A* and iterative deepening search. Derive heuristic functions for A* search that are appropriate

	for a given problem, Implement A* and iterative deepening search. Derive heuristic functions for A* search that are appropriate for a given problem
CO3	Concept of knowledge representation, game playing and learning concepts.
Course Code:CSDT114C	**M.Sc (Part I)- Web Services**
CO1	To understand Web services and Service Oriented Architecture. To understand what Web services offer as a new and evolving paradigm for building distributed applications. What are main Web services standards.
CO2	To understand principles of Web service messaging, description and discovery that enable any organization or individual to make its digital assets available. What are basic components of Web services technology that are above the messaging, description and discovery.To learn about methods of Web service coordination, composition and security and policy as well as dealing with states in Web services.
CO3	To utilize semantics in Web services.principles of semantic Web services. Understand ethical aspects and importance of sustainability in developing software services.
Course Code:CSUP115	**M.Sc (Part I)-PPL and Database**
	Technologies Practical
CO1	Be familiar with using functional languages and be exposed to using logic language
CO2	Provide an insight to the different types of NoSQL databases
Course Code:CSUT121	**M.Sc (Part II)-Advanced Operating**
	System
CO1	Introduction to Unix/Linux Kernel and Operations on file and Directories I/O
CO2	Knowledge of Process Environmental process Control and Process relationship and study of memory management and signal handling

CO3	Detail study in Windows Internal
Course Code:CSUT122	**M.Sc (Part II)-Mobile Technologies**
CO1	To impart basic understanding of the wireless communication systems.
CO2	To expose students to various aspects of mobile and ad-hoc networks.
CO3	Understand the issues relating to Wireless applications
Course Code: CSUT123	**M.Sc (Part II)- Software Metrics and Project Management**
CO1	Able to identify the impact of IT projects on the performance of the organizationsManage the phases and infrastructure of IT projects. Able to select proper project and develop project plan.
CO2	Estimate, plan, calculate, and adjust project variables and manage the scope, cost, timing, and quality of the project, at all times focused on project success as defined by project stakeholders.
CO3	How to manage human resources, How Procurement process, which type of formats required for distribution project information. Develop strategies to calculate risk factors involved in IT projects.
CO4	Able to measure attributes of project.Help to analyze software data. Understand software quality models and use them for project
Course Code: CSDT124A	**M.Sc (Part II)-Project**
CO1	Student can develop project on any platform
Course Code:CSUP125	**M.Sc (Part II)-Practical on Advanced**
	OS & Mobile Technologies
CO1	Practical on andriod

CO2	Practical on Linux
Course Code:CSUT231	**M.Sc (Sem III)-Software**
	Architecture and Design Patterns
CO1	**To introduce students to the basic concepts and techniques of SADP.**
CO2	To write java programs using Design Pattern and Frameworks to create reusable and flexible
	software systems.
CO3	Use of patterns and architectures for solving practical problems.
CO4	To understand about design pattern.
Course Code:CSUT232	**M.Sc (Sem III)-Machine Learning**
CO1	To introduce students to the basic concepts and techniques of Machine Learning.
CO2	To write python programs using machine learning algorithms for solving practical
	problems.
CO3	To understand about Machine Learning Library and use cases.
Course Code:CSUT233	**M.Sc (Sem III)-Web Frameworks**
CO1	Students will know the powerful way to develop the web application in Python.
CO2	Students will understand what really the asynchronous programming.

CO3	Students will know the powerful way to develop the web application in Python.
Course Code:CSDT234C	**M.Sc (Sem III)-Project**
CO1	Student can develop project on any platform