Pravara Medical Trust's

Arts, Commerce &Science College, Shevgaon

POs, PSOs and COs

(CBCS-2019 Pattern)

Department of English

PROGRAMME: B.A. ENGLISH	
Programme Outcomes	PO-1. Demonstrate an attitude of service and commitment to social Change
	PO-2. Educate students in both the artistry and utility of the English language through the study of literature.
	PO-3. Develop proficiency among students in oral and written communication
	PO-4. Make students able to apply critical and theoretical approaches to the reading and analysis of literary and cultural texts in multiple genres.
	PO-5. Develop creative ability among students
Program Specific Outcomes	PSO-1. Understand the values of literature in life.
	PSO-2. Appreciate the literary works
	PSO-3. Know the literary theories, terms and concepts in Criticism.
	PSO-4. Attempt creative writings.
	PSO-5. Know phonological and morphological aspects of English.
	PSO-6. Use English effectively in formal and informal situations.

Course Outcomes
F.Y.B.A. (CBCS-2019)

Compulsory English	CO-1. Students are familiarized students with excellent pieces of prose and poetry in English so that they realize the beauty and communicative power of English
	Co-2. Students are exposed them to native cultural experiences and situations in order to develop humane values and social awareness
	Co-3. Development of overall linguistic competence and communicative skills of the students
Optional English (General Paper-I)	CO-1. Students are exposed to the basics of literature and language
	CO-2. Students are familiarized with different types of literature in English, the literary devices and terms so that they understand the literary merit, beauty and creative use of language
	CO-3. Students are exposed the basic units of language so that they become aware of the technical aspects and their practical usage
	CO-4. Students are prepared for a detailed study and understanding of literature and language
	CO-5. Development of an integrated view about language and literature.

S.Y.B.A. (CBCS-2019)

Compulsory English (Core Course-CC)	CO-1. To develop language competency among the students for self-Learning
	CO-2 Familiarize the students with the excellent pieces of prose and poetry in English so that they realize the beauty and communicative power of English
	CO-3. Develop students' interest in reading literary pieces
	CO-4. Expose students to native cultural experiences and situations in order to develop values and social awareness
	CO-5. Develop overall linguistic competence and communication skills
Skill Enhancement Course (SEC-1A) (Linguistics)	CO-1. To familiarize the students with some advanced units of language so that they become aware of the technical aspects and practical usage.
	CO-2. To prepare students for the detailed study and understanding of different aspects and branches of language.
	CO-3. Make students able to use English sounds in isolation and in connected speech effectively.
	CO-4. Make students able to apply linguistic competence in their daily communication.
	CO-5. Improve the written communication of students through understanding of different syntactical elements and structures.
	CO-6. Develop students' integrated view about language and literature
Discipline Specific Course (DSC-1A) (Appreciating Drama)	CO-1. To familiarize the students with the terminology in Drama
	CO-2. To encourage the students to study a few sample masterpieces of English Drama from different parts of the world.
	CO-3. Develop interest among the students to appreciate and analyse drama independently
	CO-4. Enhance students' awareness in the aesthetics of Drama.
Discipline Specific Course (DSC-2A) (Appreciating Poetry)	CO-1. To familiarize the students with different terms in poetry
	CO-2. To encourage the students to study a few sample masterpieces of English poetry
	CO-3. Enhance students' awareness in the aesthetics of poetry and to empower them to read, appreciate and critically evaluate poetry independently.
Skill Enhancement Course (SEC-2A) (Communication Skills)	CO-1. To make students communicate effectively in different contexts
	CO-2. To enable the students to differentiate between verbal and nonverbal communication
	CO-3. To encourage the students to use soft skills in daily communication
	CO-4. Develop interest among the students to use technology for effective communication
	CO-5. Develop overall linguistic competence and communication skills

T.Y.B.A. (Pattern Regular-2019)

Compulsory English (Core Course-CC)	CO-1. To familiarize students with some excellent pieces of prose and poetry in English so that they realize the beauty and communicative power
	CO-2. To enable students to become competent and effective users of English in real life situations.
	CO-3. To contribute to the overall personality development of the students.
	CO-4. To instil humanitarian values and foster sympathetic attitude in the students.
	CO-5. To train the students in practical writing skills required in work environment.
	CO-6. To impart knowledge of some essential soft skills to enhance their employability.
Skill Enhancement Course (SEC 1-C & SEC 1-D) (Enhancing Employability Skills)	CO-1. To get the awareness of career opportunities available to them.
	CO-2. To identify the career opportunities suitable to them.
	CO-3. To understand the use of English in different careers.
	CO-4. To develop competence in using English for the career of their choice.
	CO-5. To enhance skills required for their placement.
	CO-6. To use English effectively in the career of their choice
	CO-7. To exercise verbal as well as nonverbal communication effectively for their career.
Discipline Specific Course (DSE-1C& DSE-1D) (Appreciating Novel)	CO-1. To introduce students to the basics of novel as a literary form
	CO-2. To expose students to the historical development and nature of novel
	CO-3. To make students aware of different types and aspects of novel
	CO-4. To develop literary sensibility and sense of cultural diversity in students
	CO-5. To expose students to some of the best examples of novel
Discipline Specific Course (DSE-2C & DSE-2D) (Introduction to Literary Criticism)	CO-1. To introduce students to the basics of literary criticism
	CO-2. To make them aware of the nature and historical development of criticism
	CO-3. To make them familiar with the significant critical approaches and terms
	CO-4. To encourage students to interpret literary works in the light of the critical approaches
	CO-5. To develop aptitude for critical analysis
Skill Enhancement Course (SEC 2-C & SEC 2-D) (Mastering Life Skills and Life Values)	CO-1. To equip the students with the social skills
	CO-2. To train the students interpersonal skills
	CO-3. To build self-confidence and communicate effectively
	CO-4. To Encourage the students to think critically
	CO-5. To learn stress management and positive thinking
	CO-6. To enhance leadership qualities
	CO-7. To aware the students about universal human values

	CO-8. To develop overall personality of the students to make students communicate effectively in different contexts

F.Y.B.Com. (CBCS-2019)

Compulsory English	CO-1. Students are familiarized with good pieces of prose and poetry so that they realize the beauty and communicative power of English
	CO-2. Students are exposed to the native cultural experiences and situations so that they understand the importance and utility of English language
	CO-3. To develop overall linguistic competence and communicative skills among the students
	CO-4. To develop oral and written communicative skills among the students so that their employability enhances and English becomes the medium of their livelihood and personality

S.Y.B.Sc. (CBCS-2019)

AECC- Language- English	CO-1. To offer students good pieces of prose and poetry so that they realize the beauty and communicative power of English.
	CO-2. To expose them to native cultural experiences and situations so that they understand the importance and utility of English language.
	CO-3. To develop oral and written interview skills among the students so that English becomes the medium of their livelihood.
	CO-4. To develop soft skills among the students to increase employability and create multi-dimensional personality.

Department of Marathi

PROGRAMME: B.A. MARATHI	
Programme Outcomes	१. चिकित्सक अभ्यासाची क्षमता विकसित करणे.
	२. समीक्षा करण्याची दृष्टी व क्षमता विकसित होते.
	३. जीवन कौशल्य विकासासाठी भाषा, साहित्य कला ही माध्यमे अधिक परिणामकारकतेने समजावून घेणे आवश्यक झाले आहे.
	४. विविध प्रकारची लेखनकौशल्ये आत्मसात करणे.
	५. जागतिकीकरणात विविध क्षेत्रांना सामोरे जाण्यासाठी भाषिक क्षमता विकसित करणे.
	६. साहित्याचा आस्वाद घेण्याची क्षमता विकसित करणे.
Programme Specific Outcomes	१. मराठी भाषा, मराठी साहित्य आणि मराठी संस्कृती यांचे अध्ययन करणे.
	२. मराठी भाषेची उपयोजनात्मक कौशल्य विकसित करणे.
	३. व्यक्तिमत्त्व विकासासाठी भाषिक कौशल्ये विकसित करणे.
	४. प्रसारमाध्यमासाठी विविध प्रकारची लेखन कौशल्ये आत्मसात करणे.
Course Outcomes B.A. Marathi	
Course	Outcomes After completion of these courses students should be able to;
F.Y.B.A. Marathi-Gen 1 **Sem-I-** मराठी साहित्य कथा आणि भाषिक कौशल्ये विकास (11021A) **Sem-II-** मराठी साहित्य एकांकिका आणि भाषिक कौशल्ये विकास (11022A)	१. मराठी साहित्य मराठी भाषा आणि मराठी संस्कृती यांचा क्रमशः परिचय करून घेतो २. साहित्याची रुची निर्माण होते ३. कथा साहित्य प्रकाराची ओळख करून घेणे ४. भाषिक कौशल्य विकास करणे एका साहित्य प्रकारची ओळख करून घेणे ५. मराठीतील एकांकिकाचे अध्ययन करणे ६. कथा या साहित्यप्रकारची ओळख करून देणे ७. कथा या साहित्यप्रकारचे स्वरूप घटक आणि प्रकार यांची ओळख करून देणे ८. विविध साहित्यप्रवांमधील कथा या साहित्य प्रकारातील निवडक कथांचे अध्ययन करणे ९. भाषिक कौशल्य विकास करणे एकांकिका या साहित्यप्रकारची ओळख करून देणे १०. एकांकिका साहित्य प्रकारचे स्वरूप घटक आणि प्रकार यांची ओळख करून देणे ११. मराठी साहित्याला निवडक एकांकिकांचे अध्ययन करणे १२. भाषिक कौशल्य विकास करणे

F.Y.B.Com Add. Marathi **Sem-I-** भाषा, साहित्य आणि कौशल्यविकास (117B) **Sem-II-** भाषा, साहित्य आणि कौशल्यविकास (127B)	१. भाषा व्यवहाराचे स्वरुप समजून घेणे. २. भाषेच्या वापराची कौशल्ये विकसित करणे. ३. नैतिक, व्यवसायिक व वैचारीक मूल्यांची जोपासना करणे. ४. कर्तृत्ववान व्यक्तीच्या कार्याची व विचारांची ओळख करुन घेणे. ५. विविध क्षेत्रातील भाषा व्यवहाराची स्वरूप व गरज समजावून देणे ६. या व्यवहार क्षेत्रातील मराठी भाषेचे स्थान स्पष्ट करणे व त्यातील मराठीच्या प्रत्यक्ष वापराचा अभ्यास करणे. ७. विविध क्षेत्रीय मराठी भाषेच्या वापराची कौशल्ये विकसित करणे. ८. विविध लेखनप्रकारांचा अभ्यास व प्रत्यक्ष लेखनाची कौशल्ये वापरण्यास सक्षम करणे. ९.विविध क्षेत्रातील कर्तुत्ववान व्यक्तींच्या कार्याची व विचारांची ओळख करून देणे. १०. विद्यार्थ्यामध्ये नैतिक, व्यवसायिक व वैचारिक मूल्यांची जोपासना करणे

S.Y.B.A. Marathi-Gen II **Sem-I-**भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कादंबरी (23023) **Sem-II-** भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : ललितगद्य (24023)	१. कादंबरी या साहित्यप्रकाराचे स्वरूप, घटक प्रकार आणि वाटचाल समजून घेणे. २. नेमलेल्या कादंबरीचे आकलन, आस्वाद आणि विश्लेषण करणे. ३. भाषिक कौशल्यविकास करणे. १. ललितगद्य या साहित्यप्रकाराचे स्वरूप. घटक प्रकार आणि वाटचाल समजून घेणे. २. नेमलेल्या कादंबरीचे आकलन, आस्वाद आणि विश्लेषण करणे. ३. भाषिक कौशल्यविकास करणे.
S.Y.B.A. Marathi-Spl.I **Sem-I-** आधुनिक मराठी साहित्य प्रकाशवाटा (23021) **Sem-II-** मध्ययुगीन मराठी साहित्य : निवडक मध्ययुगीन गद्य, पद्य (24021)	१. आत्मचरित्र या साहित्यप्रकाराचे स्वरूप, संकल्पना समजावून घेणे २. आत्मचरित्र या साहित्यप्रकाराच्या प्रेरणा आणि वाटचाल यांची ओळख करून घेणे. ३. ललित गद्यातील अन्य साहित्यप्रकारांच्या तुलनेत आत्मचरित्राचे वेगळेपण समजावून घेणे. ४. नेमलेल्या या आत्मचरित्राचे आकलन, आस्वाद आणि विश्लेषण करणे. ५. मध्ययुगीन गद्य, पद्य साहित्यप्रकारांची ओळख करून घेणे.
S.Y.B.A. Marathi-Spl.II **Sem-I-** साहित्यविचार (23022) **Sem-II-** साहित्य समीक्षा (24022)	१. भारतीय आणि पाश्चात्य साहित्यविचाराच्या आधारे साहित्याची संकल्पना, स्वरूप आणि प्रयोजनविचार समजावून घेणे. २. साहित्याची निर्मितिप्रक्रिया समजावून घेणे. ३. साहित्याची भाषा आणि शैली विषयक विचार समजावून घेणे. ४. साहित्य समीक्षेची संकल्पना, स्वरूप यांचा परिचय करून घेणे ५. साहित्य आणि समीक्षा यांचे परस्पर संबंध समजावून घेणे व

	अभ्यासणे. ६. साहित्यप्रकारानुसार समीक्षेचे स्वरूप समजावून घेणे व अभ्यासणे. ७. ग्रंथ परिचय, परीक्षण व समीक्षण यातील फरक समजावून घेणे.
S.Y.B.A. DSE-Sem-I प्रकाशनव्यवहार आणि संपादन (23025) **Sem-II** उपयोजित लेखनकौशल्ये (24025)	१. प्रकाशनव्यवहार आणि संपादन यासाठी आवश्यक कौशल्ये मिळविणे. २ प्रकाशनव्यवहार आणि संपादन यासाठी आवश्यक प्रशिक्षण घेणे ३. प्रकाशनव्यवहार आणि संपादन यासाठी प्रात्यक्षिकासह उपयोजनाची कौशल्ये मिळविणे. ४. प्रकाशन संस्था, छापखाने, वृत्तपत्र कार्यालये, ग्रंथ विक्री दुकाने,वार्ताहर याना भेटी देऊन प्रशिक्षण घेणे. ५. जाहिरात. मुलाखतलेखन आणि संपादन यासाठी आवश्यक कौशल्ये मिळविणे ६. जाहिरात. मुलाखतलेखन आणि संपादन यासाठी आवश्यक प्रशिक्षण घेणे. ७. प्रगत भाषिक कौशल्यांची क्षमता विकसित करणे ८. प्रसारमाध्यमातील संज्ञापनातील स्वरूप आणि स्थान स्पष्ट करणे. ९. व्यक्तिमत्त्व विकास आणि भाषा यांच्यातील सहसंबंध स्पष्ट करणे. १०. लोकशाहीतील जीवनव्यवहार आणि प्रसारमाध्यमे यांचे परस्पर संबंध स्पष्ट करणे
S.Y.B.A. MIL-2. **Sem-I** मराठी भाषिक संज्ञापनकौशल्ये (23011) **Sem-II** नवमाध्यमे आणि समाजमाध्यमांसाठी मराठी (24011)	१. संज्ञापनातील नवमाध्यमे आणि समाजमाध्यमांचे स्वरूप आणि स्थान स्पष्ट करणे २. भाषा, जीवनव्यवहार आणि नवमाध्यमे, समाजमाध्यमांचे परस्परसंबंध स्पष्ट करणे. ३. नवमाध्यमे आणि समाजमाध्यमांसाठी लेखनक्षमता विकसित करणे. ४.नवमाध्यमे आणि समाजमाध्यमांविषयक साक्षरता निर्माण करणे. ५. नवमाध्यमे आणि समाजमाध्यमांचा वापर आणि परिणाम याबद्दल चर्चा करणे.

T.Y.B.A. Marathi- Gen-III **Sem-I-** भाषिक कौशल्य विकास आणि आधुनिक मराठी साहित्य प्रकार – प्रवासवर्णन (35023) **Sem-II-** भाषिक कौशल्य विकास आणि आधुनिक मराठी साहित्य प्रकार – कविता (45023)	१. मुद्रित माध्यमासाठी लेखन कौशल्ये आत्मसात करणे. २ प्रवासवर्णन या साहित्य प्रकारचे स्वरूप प्रेरणा प्रयोजने वैशिष्टे आणि वाटचाल समजून घेणे. ३.नेमलेल्या प्रवास वर्णनाचे आकलन, आस्वाद आणि विश्लेषण करणे ४. मराठी साहित्य, भाषिक कौशल्यविकास आणि शासनव्यवहार यांची माहिती घेणे.

	५. कविता या. साहित्यप्रकाराचे स्वरूप, वाटचाल, प्रेरणा प्रवृत्ती आणि वैशिष्ट्ये समजून घेणे ६. नेमलेल्या अभ्यासपुस्तकातील निवडक कवितांचे आकलन, आस्वाद आणि विश्लेषण करणे ७. कविता या साहित्यप्रकारातील विविध आविष्कार व भाषा रूपांची अभ्यासपुस्तकातील कवितांच्या आधारे ओळख करून घेणे
T.Y.B.A. Marathi- Spl-III **Sem-I** मध्ययुगीन मराठी वाङ्याचा स्थूल इतिहास प्रारंभ ते इ.स. १६०० **Sem-II- -**मध्ययुगीन मराठी वाङ्याचा स्थूल इतिहास प्रारंभ ते इ.स. १६०० ते इ.स. १८१७ (45021)	१.वाङ:मयतिहास सकल्पना, स्वरूप, प्रेरणा, प्रवृत्ती समजून घेणे. २. मध्ययुगीन कालखंडाची सामाजिक, सांस्कृतिक पार्श्वभूमी समजून मराठी भाषा, साहित्याची कालखंडानुरूप इतिहास समजून घेणे. ३. मराठी भाषा, साहित्याची कालखंडानुरूप इतिहास समजून घेणे ४. वाङ:मयेतिहास संकल्पना, स्वरूप, प्रेरणा, प्रवृत्ती समजून घेणे. ५. मध्ययुगीन कालखंडाची सामाजिक, सांस्कृतिक पार्श्वभूमी समजून मराठी भाषा, साहित्याची कालखंडानुरूप इतिहास समजून घेणे. ६. मराठी भाषा, साहित्याची कालखंडानुरूप इतिहास समजून घेणे.
T.Y.B.A. Marathi- Spl-IV **Sem-I** वर्णनात्मक भाषाविज्ञान भाग-१ (35022) **Sem-II** वर्णनात्मक भाषाविज्ञान भाग -२ (45022)	१. भाषा स्वरूप, वैशिष्ट्ये व कार्ये समजावून घेणे. २. भाषा अभ्यासाची आवश्यकता स्पष्ट करणे ३.भाषा अभ्यासाच्या शाखा आणि विविध पद्धतीचा थोडक्यात परिचय करून घेणे. ४. वागिन्द्रियाची रचना, कार्य आणि स्वननिर्मितीची प्रक्रिया समजावून घेणे ५. स्वनविज्ञान, स्वनिमविचार आणि मराठीची स्वनिमव्यवस्था समजावून घेणे ६. रूपविन्यास आणि मराठीची रूपव्यवस्था समजावून २ वाक्यविन्यास आणि वाक्यव्यवस्थेचा मराठी भाषेच्या संदर्भात परिचय करून देणे
T.Y.B.A. SEC-2C **Sem-I** कार्यक्रम संयोजनातील भाषिक कौशल्ये भाग -१ (35025) **Sem-II** कार्यक्रम संयोजनातील भाषिक कौशल्ये भाग – २ (45025)	१. कार्यक्रमाचे स्वरूप आणि प्रकार समजून घेणे २. कार्यक्रम संयोजनातील भाषिक कौशल्ये प्राप्त करणे ३. कार्यक्रम संयोजनातील लेखन कौशल्ये संपादन करणे. ४. कार्यक्रम संयोजनातील भाषिक कौशल्ये प्राप्त करणे. ५. आभासी कार्यक्रमांचे भाषिक कौशल्ये संयोजन करणे.
SYBSC उपयोजित मराठी	१.वैज्ञानिक जाणिवा निर्माण होऊन त्यांचा विज्ञानाकडे कल वाढेल. २. मराठी विज्ञान साहित्यिकांच्या साहित्यांचे मूल्यमापन ते करू शकतील.

	३. विज्ञान हा मानवी जीवनाचा अविभाज्य भाग आहे याविषयी ते चर्चा करू शकतील. ४. लेखन, वाचन, आकलन, संभाषण या भाषिक कौशल्याविषयी त्यांना विश्लेषण करता येईल.

Department of Hindi

PROGRAMME: B.A. (Hindi) (General)	
Programme Outcomes	PO-1. छात्रों को हिंदी काव्य साहित्य से परिचित कराना।
	PO-2. छात्रों को हिंदी काव्य साहित्य का परिचय देना।
	PO-3. छात्रों को काव्य साहित्य से परिचित कराना।
	PO-4. पल्लवन कला से अवगत कराना।
	PO-5. छात्रों को मूल्यांकन की दृष्टि का विकास करना।
Program Specific Outcomes	PSO-1. हिंदी कहानी साहित्य का परिचय देना।
	PSO-2. विज्ञापन लेखन की कला अवगत कराना।
	PSO-3. निबंध लेखन कौशल को विकसित करना।
	PSO-4. सर्जनात्मकता का विकास कराना।
	PSO-5. छात्रों को रेखाचित्र साहित्य से अवगत करना।

Course Outcomes
F.Y.B.A. (CBCS-2019)

SEM- I **वैकल्पिक हिन्दी प्रश्नपत्र १** **(G-१)**	CO-1. हिंदी कहानी साहित्य से अवगत किया ।
	CO-2. छात्रों को हिंदी साहित्य से परिचित किया ।
	CO-3. अनुवाद संबंधी जानकारी दी।
	CO-4. मौलिक लेखन की और रुझान बढा दिया।
	CO-5. विज्ञापन लेखन कौशल्य विकसित किया ।
SEM- II **वैकल्पिक हिन्दी प्रश्नपत्र १** **(G-१)**	CO-1. छात्रों को हिंदी काव्य साहित्य से परिचित किया ।
	CO-2. छात्रों को हिंदी कहानी साहित्य से परिचित किया ।
	CO-3. मौलिक लेखन की और रुझान बढाई ।
	CO-4. विज्ञापन लेखन कौशल्य विकसित किया ।
	CO-5. हिंदी भाषा का संवाद कौशल्य विकसित किया ।

S.Y.B.A. (CBCS-2019)

SEM- III **आधुनिक काव्य कहाणी तथा व्यावहरिक हिंदी** **(G-२)**	CO-1. हिंदी कहानी साहित्य से अवगत किया ।
	CO-2. छात्रों को हिंदी साहित्य से परिचित किया ।
	CO-3. अनुवाद संबंधी जानकारी दी।
	CO-4. मौलिक लेखन की और रुझान बढा दिया।
	CO-5. विज्ञापन लेखन कौशल्य विकसित किया ।
SEM- IV **आधुनिक हिंदी व्यंग साहित्य तथा व्यावहरिक हिंदी** **(G-२)**	CO-1. छात्रों को हिंदी काव्य साहित्य से परिचित किया ।
	CO-2. छात्रों को हिंदी कहानी साहित्य से परिचित किया ।
	CO-3. मौलिक लेखन की और रुझान बढाई ।
	CO-4. विज्ञापन लेखन कौशल्य विकसित किया ।
	CO-5. हिंदी भाषा का संवाद कौशल्य विकसित किया ।

SEM- V **हिंदी सामान्य** **(G-३)**	CO-1. छात्रों को आत्मकथा विधाता काव्य नाटक के स्वरूप का परिचय दिया छात्रों को पारिभाषिक शब्दावली का संक्षिप्त ज्ञान दिया ।
	CO-2. सरकारी कार्यालय मे प्रयुक्त की जाने वाली कार्यालयीन हिंदी का परिचय दिया गया ।
	CO-3. छात्रों को सरकारी पत्रलेखन के विभिन्न प्रकारों सेअवगत कराया ।
	CO-4. छात्रों को पत्रकारिता के विभिन्न पेहलूओं से परिचित किया गया ।
	CO-5. छात्रों को अनुवादकला और अनुवादक के गुणों से परिचित किया गया ।
SEM- VI **पाठ्यचार्य गजल विधा और पत्राचार** **(G-३)**	CO-1. छात्रों को गजल साहित्य से अवगत करना।
	CO-2. छात्रों को गजलकार के व्यक्तित्व से अवगत करना।
	CO-3. छात्रों में मूल्यांकन की दृष्टि का विकास करना।
	CO-4. छात्रों को सरकारी पत्र लेखन से अवगत करना।

Department of Political Science

Programme: B.A. (Political Science)	
Program Objectives	The main aim of teaching Political science is to help individuals develop into responsible, critical, reflective and productive citizens. Students will be able to develop a critical understanding about the nature and philosophy of political science and its interface with Society.
Program Specific Objectives	To increase awareness of career options available with an undergraduate degree in political science; its utility in the public and private sectors; and its value as entry into a range of graduate programs, teaching positions, and legal education

Course Outcomes:

FYBA (2019 Pattern)

(11016) SEM-I	**a)** To introduces the students to the basic concepts in Indian Politics. **b)** To introduce latest concepts in Indian Politics. **c)** It emphasizes on local influence that derives from social stratification of cast, religion, and ethic and critically assesses its impact on the political Process. **d)** To Introduced the students legislative Council, Executive Council, Judiciary Council.
(11016) SEM-II	**a)** To acquaint students with the important features of the Constitution of India. **b)** The basic framework of Indian government. **c)** To familiarize students with the working of the Constitution of India.
Democracy, Election and Governance (22999)	**a)** TO analyze Political and policy Problems and formulate policy options. **b)** Deliver thoughtful and well. Articulated Presentations of research findings. **c)** Use Library Search tools to identify scholar articles on country –specific government institutions in a nation other than state.

SYBA (2019 Pattern)

An Introduction To Political Ideology (23163) SEM-III	**a)** Important sub themes of Political Science as a discipline. **b)** Approaches to study Political Science **c)** Basic Concepts and Values in Political Science
An Introduction To Political Ideology (23163)	**a)** To introduce the students to the system's Analysis, structural Functionalism. **b)** To understand the nature and scope of political

SEM-IV	Theory. **c)** Students will develop on understanding of core political science concepts and theories within multiple disciplinary. **d)** Critique a contemporary conflict in terms of the theories and concepts exposed to in ice course.
Semester III **DSE-1A: WESTERN POLITICAL THOUGHT (23161)**	**a)** Major traditions of thought that have shaped political discourse in different parts of the world. **b)** The great diversity of social contexts and philosophical visions. **c)** The history of political thought as a series of critical, interconnected and open-ended conversations about the ends and means of the good life.
Semester- IV **DSE-1B (3)** **WESTERN POLITICAL THOUGHT(24161)**	**a)** This Course examines major texts in the history of Political thought. **b)** In this course, we examine major texts in western political thought. **c)** To understand the relationship between religion and politics in early modern western.
Semester III **DSE-2A (3)** **POLITICAL JOURNALISM (23162)**	**a)** Complex relationship between the communication, media and power politics. **b)** Critical appraisal of practices of political image management, campaigns, propaganda and censorship. **c)** Indian context of political Journalism
Semester-IV **DSE-2B (3)** **POLITICAL JOURNALISM (24162)**	**a)** Critical appraisal of practices of political image management, campaigns, propaganda and censorship. **b)** Indian context of political Journalism. **c)** Complex relationship between the communication, media and power politics.
Semester-III **SEC 2A (2)** **BASICS OF INDIAN CONSTITUTION (23165)**	**a)** To acquaint students with the important features of the Constitution of India and with the basic framework of Indian government. **b)** To familiarize students with the working of the Constitution of India. **c)** To Understand and analysis federalism in the Indian Constitution. **d)** Analyze Panchayat raj Institutions as a medium Of Decentralization.
Semester-IV **SEC 2B (2)** **BASICS OF INDIAN CONSTITUTION (24165)**	**a)** To understand the stricter and composition of Indian Constitution. **b)** To understand the emergence and evolution of Indian. **c)** This paper focuses in detail on the political processes and the actual functioning of the Political System.

TYBA (2019 Pattern)

Semester-V **CC-2 E (3)** **LOCAL SELF GOVERNMENT IN MAHARASHTRA (35163)**	**a)** To introduce the students the structure of Local Self Government **b)** To make students aware about composition, power and functions of local bodies
Semester-VI **CC-2 E (4)** **LOCAL SELF GOVERNMENT IN MAHARASHTRA (36163)**	**a)** To make students aware about composition, power and functions of local bodies **b)** To introduce the students the structure of Local Self Government.
Semester-V **DSE 1 C (3)+1** **PUBLIC ADMINISTRATION (35161)**	**a)** This paper is an introductory course in Public Administration. **b)** The essence of Public Administration lies in its effectiveness in translating the governing philosophy into programmers, policies and activities and making it a part of community living
Semester-VI **DSE 1 D (3)+1** **PUBLIC ADMINISTRATION (36161)**	**a)** The recent developments and particularly the emergence of New Public Administrations are incorporated within the larger paradigm of democratic legitimacy. **b)** The importance of legislative and judicial control over administration is also highlighted
Semester-V **DSE 2 C (3)+1** **INTERNATIONAL RELATIONS (35162)**	**a)** 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.
Semester-VI **DSE 2 D (3)+1** **INTERNATIONAL RELATIONS**	**a)** 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 unipolar world are included.
Semester-V **SEC 2C (2)** **SAMYUKTA MAHARASHTRA MOVEMENT (35164)**	**a)** This Course is an introduction to the political process in Maharashtra with special reference to regionalism sub-regionalism and Samyukta Maharashtra Movement. **b)** 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.
Semester-VI **SEC 2D (2)** **SAMYUKTA MAHARASHTRA MOVEMENT**	**a)** It tries to acquaint 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

Department of Geography

PROGRAMME: B.A. GEOGRAPHY	
Programme Outcomes	PO-1. The Geographical maturity of students in their current and future courses shall develop.
	PO-2. The student develops theoretical, applied and computational skills
	PO-3. Acquaint the students with the nature of man-environment relationship and human capability to adopt and modify the environment under its varied conditions fromprimitive life style to the living.
	PO-4. To identify and understand environment the population in terms of their quality and spatial distribution pattern and to comprehend the contemporary issues facing the global community.
	PO-5 To aware the students with the utility &application of hazards in different areas and its management.
	PO-6 To introduce the basic concepts andtechniques of geographical analysis
	PO-7 To train the students in elementary statistics as an essential part of geography
Programme Specific Outcomes	PSO-1. To acquaint the students withgeography of our Nation
	PSO-2. To make the students aware of themagnitude of problems and prospects at National level.
	PSO-3. Help the students to understand the inter relationship between the subject and thesociety.
	PSO-4. Help the students to understand the recent trends in regional studies.
	PSO-5. Agriculture activities and its relation with Geography
	PSO-6. To enable students to apply previously knowledge in problems and prospects in agriculture.
	PSO-7 To introduce students the concept ofdisaster & its relation with Geography.
	PSO-8 To awareness about GIS among thestudents

Course Outcomes F.Y.B.A.	
Physical Geography-I Gg. 110 (A)11201	CO- 1 To introduce the students to the basicconcepts in Physical Geography.
	CO-2 To introduce latest concept in Physical Geography.
	CO-3 To acquaint the students with the utility and application of Physical Geography in different regions and environment.
	CO-4 To make the students aware about Earth system (Lithosphere, Atmosphere, Biosphere and Hydrosphere)
Human Geography-I Gg. 110 (B) 12201	CO-1 The geographical maturity of students in their current and future courses shall develop.
	CO-2 The students develops theoretical and computational skills.
Course Outcomes S.Y.B.A.	
Environmental Geography-I (G1)CC 1C	CO-1 To create the awareness about dynamic environment among the student.
	CO-2 To acquaint the students with fundamental concepts of environment.
	CO-3 The students should be able to integrate various factors of environment and dynamic aspect of environmental geography.
	CO-4 To make aware the students about the problems of environment, their utilization and conservation in the view of sustainable development.
Geography of Maharashtra-I (S1)DSE 1A	CO-1 To acquaint students with geography ofour state.
	CO-2 To make students aware of the magnitude of problems and prospects inMaharashtra.
	CO-3 To help students understand the inter relationship between the subject and the society.
	CO-4 To help students understand the recent trends in regional studies.
Practical Geography-I (Scale and Map Projection (S2) DSE 2A	CO-1 To introduce the basic concepts in practical geography.
	CO-2 To enable students to use various scales and projection techniques in geography.

	CO-3 To acquaint students with the utility of various projections in geographical knowledge.
	CO-4 To explain the elementary and essentialof practical work in geography.
	CO-5 Develop practical skill and use of mapscale and projection.
	CO-6 To make students aware of the newtechniques, accuracy and skills of map making.
Applied Course of Disaster Management-SEC 2A	CO-1 To develop basic framework to understand the various elements of tourism management.
	CO-2 To evaluate the role of transport intravel and tourism industry.
	CO-3 To develop the skill to arrange, manage and implement various types of tours.
	CO-4 Students will be able to perform onlineas well as offline booking and cancellation procedures for different available modes of travel and tourism.
	CO-5 Students will be able to acquire earning skills in tourism industry.
Course Outcomes T.Y.B.A.	
Geography of Disaster Management-IGg. 310(A) CC 1E	CO-1 To introduce students the concept of Disaster and its relation with Geography.
	CO-2 To acquaint the students with the utility and application of Hazards in different areas and its management.
	CO-3 To make the students aware of the need of protection and Disaster management.
Geography of India-I Gg.320(A) DSE 1C	CO-1 To acquaint the students withGeography of our Nation.
	CO-2 To make the student aware of themagnitude of problems and prospects at National Level.
	CO-3 To help the students the inter relationship between the subject and thesociety.
	CO-4 To help the students to understand the recent trends in regional studies
Practical Geography-I Gg. 301(A) DSE 2C	CO-1 To introduce the basic concepts andtechniques of Geographical Analysis.
	CO-2 To introduce the students with SOI Topo sheets and acquire the knowledge of topo sheet interpretation.
	CO-3 To introduce the students with Weather

	Maps and acquire the knowledge of itsinterpretation.
	CO-4 To introduce the students with Aerial Photographs and Satellite Images and acquire knowledge to interpret it.
	CO-5 To acquaint students with the spatial and structural characteristic of Practical Geography.
	CO-6 To explain the elementary and essential principles on field of practical work.
Research Methodology-I Value/Skill basedcourse SEC 2C	CO-1 To develop the understanding of the basic concept of research.
	CO-2 To develop the understanding of the basic framework of sampling and datacollection
	CO-3 To develop the understanding of various sampling methods and techniques.

Department of History

PROGRAMME: HISTORY	
Programme Outcomes	PO1- The students acquire knowledge in the field of social sciences,literatureand humanities which make them sensitive and sensible enough.
	PO 2. Provide multi-causal explanations of major historical developments based on a contextualized analysis of Modern World History
	PO3 Demonstrate knowledge of the chronology, narrative, major events, personalities and turning points of the history of the India.
	PO4 The program also empowers the graduate to appear for various competitive examination.
	PO5 program provides the best to be responsible citizen
Programme Specific Outcomes	PSO:1- Understand the basic themes, concepts, chronology and the Scope of Indian History.
	PSO:2- To study further in the applied field of history as archaeology PSO:3- Understand the history of the countries other than India with comparative approach.
	PSO:4- Think and argue historically and critically in writing and discussion.
	PSO:5- Be Acquaint with the range of issues related Indian History and its distinctive eras.

Course Outcomes
F.Y.B.A. (CBCS-2019)

Semester-I **Early India: From Prehistory to the Age of the Mauryas [G-1]**	CO 1. The history of Early India is a crucial part of Indian history.
	CO 2. The course is aimed at helping the student to understand the history of early India from the prehistoric times to the age of the Mauryas.
	CO 3. . It also aims to foster the spirit of enquiry among the students by studying the major developments in early Indian history.
	CO 4. It is a base for understanding the entire Indian history.
Semester –II **Early India: Post Mauryan Age to the Rashtrakutas [G-1]**	CO 1. The history of India after the Mauryas is very important to understand the developments in early India after the Mauryas, which finally led to the transition to medieval India.
	CO 2. It attempts to highlight the consequences of the foreign invasions, particularly on the polity, economy, society and art and architecture.
	CO 3. The attempt is also to instill the spirit of enquiry among the student

	CO 4. The course is aimed at introducing the students to the developments in different parts of India through a brief study of regional kingdoms up to the tenth century C.E.

S.Y.B.A. (CBCS-2019)

Semester-III **History of the Marathas: (1630-1707) [G-2]**	CO 1. To introduce the students to the regional history of medieval Maharashtra and India.
	CO 2. To study administrative Institutions of the Maratha .
	CO 3. To evaluate contribution of Chhatrapati Shivaji Maharaj to the establishment of Swarajya, contribution of successors and later development of the Maratha kingdom.
	CO 4.. To study political, social and conceptual history of the Marathas in an analytical way with the help of primary sources.
	CO 5. Student will develop the ability to analyse sources for Maratha History.
	CO 6. Student will learn significance of regional history and political foundation of the region.
Semester –IV **History of the Marathas: (1707-1818) – [G-2]**	CO 1. To examine the dynamics of Maratha Confederacy and reciprocity.
	CO 2. To understand changed nature of Maratha Polity during the Peshwa Period.
	CO 3. It will help to enrich the knowledge of the administrative skills and profundity of diplomacy.
	CO 4. To study administrative system, society and economy of the Peshawa period

T.Y.B.A. (CBCS-2019)

Semester-V **INDIAN NATIONAL MOVEMENT (1885-1947)**	CO 1. The course is designed to make the students aware about the making of Modern India and the struggle for independence.
	CO 2. To acquaint the students with various interpretative perspectives.
	CO 3. To make the students aware of the multi-dimensionality of Modern India.
	CO 4. To highlight the ideas, institutions, forces and movements that contributed to be shaping of Indian Modernity.
Semester –VI **INDIA AFTER INDEPENDENCE (1947-1991)**	CO 1. Students will understand various aspects of India's domestic and foreign policies that shaped Post-Independence India.
	CO 2. To increase the spirit of healthy Nationalism, Democratic Values and Secularism among the students.
	CO 3. It will enable students to develop an overall understanding of the Contemporary India.

Department of Economics

PROGRAMME: B.A. ECONOMICS	
Programme Outcomes	PO-1. Use various economic tools for analysis and apply knowledge of the **Economical** approach for the personal profit and benefit of national and the global economy
	PO-2. Recognize formulate and study the problems of various sectors of the **Indian Economy** and the global economy with the help of the economic ways of thinking, theories, and concepts.
	PO-3. Design policies and solutions for the economic problems of India and Indian Economy largely.
	PO-4. Create, select, and apply appropriate techniques, resources, and modern IT tools for solution of Basic Economic problems.
	PO-5. Apply the knowledge of economic concepts, laws and theories, for better economic conditions for the society at large scales.
	PO-6. Develop an economic way of the economic growth, protecting economic environment with sustainable development
	PO-7. Include of ethical values in the economy and the government sector
	PO-8. Work efficiently as a part or leader of a team, having interdisciplinary approach
	PO-9. Communicate effectively on the economic activities with the community and the society through the acquiring knowledge of the national and the global economy.
	PO-10. Apply knowledge of the economic principles, functioning of various sectors of the economy as an individual on various private and government projects and devise sources of finance.
	PO-11. understand the nature of any discipline as a continuous process of development and welfare of the human being
Program Specific Outcomes	PSO-1. Explain the basic concepts, laws and theories related to the economic behaviour of the human being.
	PSO-2. Inculcate the economic way of thinking.
	PSO-3. Apply economic analysis in practice.

Course Outcomes
F.Y.B.A. (CBCS-2019)

Semester-I **Indian Economics Environment- I** **(11051)**	CO-1. Describe status of agricultural and industrial sector of the Indian economy with special regional reference to the economy of Maharashtra.
	CO-2. Explain poverty and unemployment as economic problems in the India and Maharashtra.
	CO-3. Describe Factors of production and industrial labor in industrial sector of the Indian economy.
	CO-4. Interpret demographic features of the Indian economy and problems.
	CO-5. Analyse developments of secondary and tertiary sectors in the economy along with the problems and solutions.
	CO-6. Regional imbalance and water management.
	CO-7. Ability to develop an understanding of the economic environment and the factors affecting economic environment.
	CO-8. Ability to compare and contrast Indian Economy with other world economies.
	CO-9. At the end of the course, the student should be able discuss and debate on the various issues and challenges facing the Indian Economic Environment.
Semester-II **Indian Economics Environment- II** **(11052)**	CO-1. Describe status of the Indian economy as a developing economy in comparison with world economy
	CO-2. Recent Trends in Indian Service Sector- Digital Economy, E-Commerce, E- Finance
	CO-3. Ability to develop awareness on the various new developments in the different sectors of an economy – agriculture, industry, services, banking, etc.
	CO-4. Policy Measures (Two-Three recent Programmes)- Poverty Alleviation Programmes; Employment Generation Programmes; Agriculture Development Programmes, Skill Development Programmes

S.Y.B.A. (CBCS-2019)

Semester-III **Financial System- I** **(23153)**	CO-1. To Descried evolution of modern banking in the west and in India
	CO-2. To Describe functioning and working of the commercial and cooperative banks
	CO-3. Explain functions and working of the central bank of country and Reserve Bank of India
	CO-4. Explain principles of commercial banks, different types of accounts and customers of various types of these banks
Semester-IV **Financial System- II** **(24153)**	CO-1. Analyze functioning and usage of various types of negotiable instruments used in financial sector of the economy
	CO-2. Explain functions and working of the central

	bank of country and Reserve Bank of India
	CO-3. Examine supply of money in economy and its control by the Reserve Bank of India
	CO-4. Evaluate developments and challenges in the sector of the cooperative banking India
	CO-5. Describe new applications of technology evolved in the banking sector
Semester-III **Micro Economics-I**	CO-1. Describe basic economic problems and look towards the economy with the microeconomic approaches
	CO-2. Explain division of market from consumer and supply of the products from the producers.
	CO-3. Interpret concepts related to utility, demand and supply in market.
	CO-4. Analyse process of production in economy, laws and variables related to the production function
Semester-IV **Micro Economics-II**	CO-1. Demonstrate various forms of market and price determination concept of firm
	CO-2. Describe factors of production involved in process of production and theories related to their pricing
	CO-3. Describe welfare economics, and variables involved in the welfare function and thoughts of the welfare economists
	CO-4. Apply the tools used for economic analysis
Semester-III **Macro Economics-I**	CO-1. Macroeconomic approach towards economy in contrast with the microeconomic approach
	CO-2. Make a detailed enquiry into generation, calculation and measurement of national income
	CO-3. Describe way of money facilitates exchanges and develop market and the economy
Semester-IV **Macro Economics-II**	CO-1. Explain human behaviour creating effective demand which determines level of output and employment in economy
	CO-2. Analyse approaches towards value of money and price level in economy
	CO-3. Interpret causes and controlling measures of cyclical fluctuations in economy
	CO-4. Assess macro policies-monetary and fiscal and its applications in the functioning of the economy
	CO-5. Evaluate developments in theory of employment of economics
Semester-III **SEC** **Research Methodology-I**	CO-1. The course will be given in the form of lectures and practical work .Lectures will focus on research, especially with regard to sampling methods, data collection and data preparation
Semester-III **SEC** **Research Methodology-I**	CO-1. The course will focus on the practical implementation of diverse sample techniques. Students are expected to collect and classify the data

T.Y.B.A. (Pattern Regular-2019)

Semester-V **Indian Economic Development- I**	CO-1. To relate and recognize the concept and indicators of Economic Development
	CO-2. To describe and analyse the concept and indicators of Human Development

	CO-3. To explain the characteristics of Developing and Developed Countries
	CO-4. To describe the constraints to the process of Economic Development
Semester-VI **Indian Economic Development- II**	CO-1. To describe and explain the process of Economic Planning
	CO-2. To describe and examine the changing structure of planning process in India
	CO-3. To describe and explain the relation between Economic Development and Environment
Semester-V **International Economics-I**	CO-1. To relate and recall the concepts of International Economics and International Trade
	CO-2. To describe and apply the theories of international trade
	CO-3. To explain and comprehend the issues relating to Terms of trade and Balance of Payment
Semester-VI **International Economics-II**	CO-1. Ability to relate and explain the concept of Exchange Rate and Foreign Exchange Market
	CO-2. Ability to describe the trends in Growth, Composition and Direction of India's Foreign Trade
	CO-3. Ability to comprehend the issues relating to Foreign Capital and Regional and International Co-Operation
Semester-V **Public Finance- I**	CO-1. To relate and recognize the Nature and Scope of Public Finance
	CO-2. To describe and analyse the concept of Public Revenue and its components
	CO-3. To explain types of Public Expenditure and reasons for rising Public Expenditure
	CO-4. To explain the types of Public Debt and its effects
Semester-VI **Public Finance- II**	CO-1. To explain and assess the components and instruments of Fiscal Policy
	CO-2. To relate to the concepts of Budget and its components
	CO-3. To describe and analyze the concept of Deficit Financing and its effects
	CO-4. To describe and explain the Centre and State Financial Relationship
Semester-V **SEC** **Business Management- I**	CO-1. Management of Business
	CO-2. Business planning and decision making
	CO-3. Leadership Skills- Ability to work in teams at the same time, ability to show leadership qualities
Semester-VI **SEC** **Business Management- II**	CO-1. Analytical Skills – Ability to analyse data collected and interpret in the most logical manner
	CO-2. Project Report Writing Skills- Ability to comprehend and illustrate/demonstrate findings
	CO-3. Presentation Skills – PPT/Poster- Ability to illustrate findings in the most appealing manner
	CO-4. Leadership Skills: Ability to show leadership skills with business ideas or work on business ventures as a practical example

Faculty of Commerce

POs, PSOs and COs

(CBCS-2019 Pattern)

PROGRAMME: B.COM.	
SUBJECT: FINANCIAL ACCOUNTING	
PROGRAMME OUTCOMES	PO-1- To impart knowledge of basic accounting concepts
	PO-2. To create awareness about application of these concepts in business world
	PO-3. To impart skills regarding Computerized Accounting
	PO-4. To impart knowledge regarding finalization of accounts of various establishments.

SUBJECT: BUSINESS ECONOMICS (MICRO) - I	
PROGRAMME OUTCOMES	PO-1. To impart knowledge of business economics
	PO-2. To clarify micro economic concepts
	PO-3. To analyse and interpret charts and graphs
	PO-4. To understand basic theories, concepts of micro economics and their application

SUBJECT: BUSINESS MATHEMATICS & STATISTICS	
PROGRAMME OUTCOMES	PO-1. To introduce the basic concepts in Finance and Business Mathematics and Statistics
	PO-2. To familiar the students with applications of Statistics and Mathematics in Business
	PO-3. To acquaint students with some basic concepts in Statistics. PO-4. To learn some elementary statistical methods for analysis of data.
	PO-4. To learn some elementary statistical methods for analysis of data.
	PO-5. The main outcome of this course is that the students are able to analyse the data by using some elementary statistical methods

SUBJECT: BANKING & FINANCE	
PROGRAMME OUTCOMES	PO-1. Managing Money Plan
	PO-2. Study of Bank Strategies
	PO-3. Opening & operating bank account
	PO-4. Study latest Trend in Banking
	PO-5. Uses of Online banking function

SUBJECT: MARKETING AND SALESMANSHIP	
PROGRAMME OUTCOMES	PO-1. To introduce the basic concepts in Marketing.
	PO-2. To give the insight of the basic knowledge of Market Segmentation and Marketing Mix
	PO-3. To impart knowledge on Product and Price Mix.
	PO-4. To enable students to apply this knowledge in practicality by enhancing their skills in the field of Marketing.

	PO-5. Prepare Marketing plan for different product
	PO-6. Study market customers and competitor Attitude
	PO-7. Find Marketing Jobs
	PO-8. Analysis of Target markets

SUBJECT: BUSINESS COMMUNICATION	
PROGRAMME OUTCOMES	PO-1. Clarifying Concept of Communication
	PO-2. Effective Business writing
	PO-3. Effective Presentation
	PO-4. Effective Inter personal communication
	PO-5. Develop Communication Plan

SUBJECT: CORPORATE ACCOUNTING	
PROGRAMME OUTCOMES	PO-1. To acquaint the student with knowledge about various Concepts, Objectives and applicability of some important accounting standards associated with corporate accounting.
	PO-2. To develop understanding among the students on the difference between commencement and incorporation of a company and the accounting treatment for transactions during the two phases.
	PO-3. To update the students with knowledge for preparation of final accounts of a company as per Schedule III of the Companies Act 2013
	PO-4. To empower to students with skills to interpret the financial statements in simple and summarized manner for effective decision making process.
	PO-5. To acquaint the student with knowledge about various Concepts, Objectives and applicability of some important accounting standards associated with to corporate accounting.
	PO-6. To develop understanding among the students on the difference between commencement and incorporation of a company and the accounting treatment for transactions during the two phases.
	PO-7. To update the students with knowledge for preparation of final accounts of a company as per Schedule III of the Companies Act 2013
	PO-8. To empower to students with skills to interpret the financial statements in simple and summarized manner for effective decision making process.

SUBJECT: BUSINESS ECONOMICS (MACRO)	
PROGRAMME OUTCOMES	PO-1. To familiarize the students to the basic theories and concepts of Macro Economics and their application.
	PO-2. To study the relationship amongst broad aggregates.
	PO-3. To impart knowledge of business economics.
	PO-4. To understand macroeconomic concepts.
	PO-5. To introduce the various concepts of National Income.

SUBJECT: BUSINESS MANAGEMENT	
PROGRAMME OUTCOMES	PO-1. To provide basic knowledge and understanding about various concepts of Business Management.
	PO-2. To help the students to develop cognizance of the importance of management principles.
	PO-3. To provide an understanding about various functions of management.
	PO-4. To provide them tools and techniques to be used in the performance of the managerial job.

SUBJECT: ELEMENTS OF COMPANY LAW	
PROGRAMME OUTCOMES	PO-1. To develop general awareness of Elements of Company Law among the students.
	PO-2. To understand the Companies Act 2013 and its provisions.
	PO-3. To have a comprehensive understanding about the existing law on formation of new company in India.
	PO-4. To create awareness among the students about legal environment relating to the company law.
	PO-5. To acquaint the students on e-commerce, E governance and e-filling mechanism relating to Companies.
	PO-6. To enhance capacity of learners to seek the career opportunity in corporate sector.

SUBJECT: COST AND WORKS ACCOUNTING	
PROGRAMME OUTCOMES	PO-1. To prepare learners to know and understand the basic concepts of cost.
	PO-2. To understand the elements of cost.
	PO-3. To enable students to prepare a cost sheet.
	PO-4. To facilitate the learners to understand, develop and apply the techniques of inventory control.

SUBJECT: BUSINESS REGULATORY FRAMEWORK (MERCANTILE LAW)	
PROGRAMME OUTCOMES	PO-1. To acquaint students with the basic concepts, terms & provisions of Mercantile and Business Laws.
	PO-2. To develop the awareness among the students regarding these laws affecting business, trade and commerce.

SUBJECT: ADVANCED ACCOUNTING	
PROGRAMME OUTCOMES	PO-1. To impart the knowledge of various accounting concepts
	PO-2. To instil the knowledge about accounting procedures, methods and techniques.
	PO-3. To acquaint them with practical approach to accounts writing by using software package.

SUBJECT: INTERNATIONAL ECONOMICS	
PROGRAMME OUTCOMES	PO-1. To study the theories of International Trade.
	PO-2. To highlight the trends and challenges faced by nations in a challenging global environment.

SUBJECT: AUDITING & TAXATION	
PROGRAMME OUTCOMES	PO-1. To acquaint themselves about the concept and principles of Auditing, Audit process, Assurance Standards, Tax Audit, and Audit of computerized Systems.
	PO-2. To Study recent Auditing Fundamental procedure
	PO-3. Knowledge of auditing its application
	PO-4. To Study Tax Reforms
	PO-5. To Study rules and regulation, salary, benefits and others
	PO-6. To Study different direct and indirect taxation polices
	PO-7. To find Tax Policies.
	PO-8. To get knowledge about preparation of Audit report.
	PO-9. To understand the basic concepts and to acquire knowledge about Computation of Income, Submission of Income Tax Return, Advance Tax, and Tax deducted at Source, Tax Collection, Authorities under the Income Tax Act, 1961.

SUBJECT: COST AND WORKS ACCOUNTING.-II	
PROGRAMME OUTCOMES	PO-1. To provide Knowledge about the concepts and principles application of Overheads
	PO-2. To provide also understanding various methods of costing and their applications

SUBJECT: COST AND WORKS ACCOUNTING.-III	
PROGRAMME OUTCOMES	PO-1. To impart knowledge regarding costing techniques.
	PO-2. To provide training as regards concepts, procedures and legal Provisions of cost audit.

Course Outcomes
F.Y.B.Com. (CBCS-2019)

Financial Accounting –I **Course Code - 112**	CO-1. To impart knowledge of basic accounting concepts.
	CO-2. To create awareness about application of these concepts in business world.
	CO-3. To impart skills regarding Computerized Accounting.
	CO-4. To impart knowledge regarding finalization of accounts of various establishments.
Computer Concept and Application –I **Course Code-114-B**	CO-1. To make the students familiar with Computer environment.
	CO-2. To make the students familiar with the basics of Operating System.

	CO-3. To Understand various business communication tools.
	CO-4. To make awareness among students about applications of Internet in Commerce.
Banking & Finance – I **Course Code -115- B**	CO-1. To provide knowledge of fundamentals of Banking
	CO-2. To create awareness about various banking concepts
	CO-3. To conceptualize banking operations.
Marketing & Salesmanship –I **Course Code-116-C**	CO-1. To introduce the basic concepts in Marketing
	CO-2. To give the insight of the basic knowledge of Market Segmentation and Marketing Mix
	CO-3. To impart knowledge on Product and Price Mix.
Business Environment and Entrepreneurship- I **Course Code-116-E**	CO-1. To understand the concept of Business Environment and its aspects.
	CO-2. To make students aware about the Business Environment issues and problems of Growth
	CO-3. To examine personality competencies most common to majority of successful entrepreneurs and to show how these competencies can be developed or acquired
	CO-4. To understand the difference between Entrepreneurial and non-Entrepreneurial behaviour
Financial Accounting-II **Course Code - 122**	CO-1. To impart knowledge of various software used in accounting.
	CO-2. To impart knowledge about final accounts of charitable trusts.
	CO-3. To impart knowledge about valuation of intangible assets.
	CO-4. To impart knowledge about accounting for leases.
Computer Concept and Application-II **Course Code-124 - B**	CO-1. To make the students familiar with cyber related issues.
	CO-2. To provide knowledge about website development.
	CO-3. To make the students familiar with basics of Network, Internet and related concepts.
	CO-4. To make awareness among students about applications of Internet in Commerce.
Banking & Finance-II **Course Code-125- B**	CO-1. To develop the working capability of students in banking sector.
	CO-2. To Make the Students aware of Banking Business and practices.
	CO-3. To enlighten the students regarding the new concepts introduced in the banking system
Marketing & Salesmanship- II **Course Code-126-C**	CO-1. To introduce the concept of Salesmanship.
	CO-2. To give insight about various techniques required for the salesman.

	CO-3. To inculcate the importance of Rural Marketing.
	CO-4. To acquaint the students with recent trends in marketing and social media marketing
Business Environment and Entrepreneurship – II Course Code – 126-E	CO-1. Understanding the difference between entrepreneurial and non-entrepreneurial, personality
	CO-2. Providing knowledge and significance of entrepreneurship Skill-Realizing role of entrepreneurship in economy
	CO-3. Gaining knowledge of various institutions promoting entrepreneurship Skill-Acquaintance with these institution

S.Y.B.Com. (CBCS-2019)

Business Communication-I Course Code-231	CO-1. To understand the concept, process and importance of communication.
	CO-2. To acquire and develop good communication skills requisite for business correspondence.
	CO-3. To develop awareness regarding new trends in business communication.
	CO-4. To provide knowledge of various media of communication.
Corporate Accounting –I Course Code -232	CO-1. To acquaint the student with knowledge about various Concepts, Objectives and applicability of some important accounting standards associated with to corporate accounting
	CO-2. To develop understanding among the students on the difference between commencement and incorporation of a company and the accounting treatment for transactions during the two phases.
	CO-3. To update the students with knowledge for preparation of final accounts of a company as per Schedule III of the Companies Act 2013
	CO-4. To empower to students with skills to interpret the financial statements in simple and summarized manner for effective decision-making process.
Business Management –I Course Code- 234	CO-1. To provide basic knowledge and understanding about various concepts of Business Management.
	CO-2. To help the students to develop cognizance of the importance of management principles.
	CO-3. To provide an understanding about various functions of management.
	CO-4. To provide them tools and techniques to be used in the performance of the managerial job.
Element of Company Law-I Course Code-235	CO-1. To develop general awareness of Elements of Company Law among the students.
	CO- 2. To understand the Companies Act 2013 and its provisions.
	CO-3. To have a comprehensive understanding about the existing law on formation of new company in India.

	CO-4. To have a comprehensive understanding about the existing law on formation of new company in India.
Banking & Finance –I **Course Code-236- B**	CO-1. To provide the knowledge about Indian Banking System.
	CO-2. To create the awareness about the role of banking in economic development.
	CO-3. To provide the knowledge about working of Central Banking in India.
	CO-4. To know the functioning of private and public sector banking in India
Marketing Management **Course Code -236- H**	CO-1. To introduce the concept of Marketing Management.
	CO-2. To give the students the basic knowledge of Marketing Management to be a successful modern marketer.
	CO-3. To inculcate knowledge of various aspects of marketing management through practical approach.
	CO-4. To interpret the issues in marketing and their solutions by using relevant theories of marketing management.
Cost & works Account I	CO-1. Introducing Cost and Works Accounting.
	CO-2. Explaining Material Costs, Employee Cost and Incentive Systems, Overhead and Cost Statement and Cost Book – keeping.
	CO-3. Learning various Costing methods like contract costing, job costing, batch costing, operating costing, process costing
Business Administration I	
Business Communication –II **Course Code- 231**	CO-1. To understand the concept, process and importance of communication.
	CO-2. To acquire and develop good communication skills requisite for business correspondence.
	CO-3. To develop awareness regarding new trends in business communication.
	CO-4. To provide knowledge of various media of communication
Corporate Accounting- II **Course Code -232**	CO-1. To acquaint the student with knowledge of corporate policies of investment for expansion and growth through purchase of stake in or absorption of smaller units.
	CO-2. To develop the knowledge among the student about consolidation of financial statement with the process of holding.
	CO-3. To update the students with knowledge of the process of liquidation of a company

	CO-4. To introduce the students with the recent trends in the field of accountancy
Business Management –II Course Code-234	CO-1. Skills regarding how to motivate staff and other members of the team.
	CO-2. Skills regarding retaining motivational level
	CO-3. Understanding needs and expectations of group members and meeting them effectively
	CO-4. Understanding followers and their views on various organizational matters
Element of Company Law- II Course Code235	CO-1. To develop general awareness among the students about management of company
	CO-2. To have a comprehensive understanding about Key managerial Personnel of company and their role in Company administration.
	CO-3. To acquaint the students about E Governance and E Filling under the Companies Act, 2013.
	CO-4. To equip the students about the various meetings of Companies and their importance.
Marketing Management – II Course Code -236- H	CO-1. To create awareness and impart knowledge about the basics of Marketing Management which is the basic foundation of Marketing subject.
	CO-2. To orient the students in recent trends in marketing management.
	CO-3. To understand the concept of Green Marketing.
Cost & works Account II	CO.1 Learning Joint Product & By product, Activity Based Costing, Budget and Budgetary Control, Standard Costing, CVP Analysis, Marginal Costing in detail.
Business Administration II	

T.Y.B.Com. (CBCS-2019)

Business Regulatory Framework-I Course Code-351	CO-1. To provide conceptual knowledge about the framework of business Law in India.
	CO-2. To orient the students about the legal aspect of business.
	CO-3. To create awareness among the students about legal environment relating to the Contract Law, Partnership Act, Sale of Goods Act in India.
	CO-4. To understand the emerging issues relating to e-commerce, e-transaction issues
Advanced Accounting –I Course Code-352	CO-1. To acquaint the student with knowledge about various concepts, objectives, and applicability of some important accounting standards.
	CO-2. To develop the knowledge among the students about reorganization of business regarding restructuring the capital.
	CO-3. To update the students with knowledge for preparation of final accounts of a Banking Companies with the provisions of Banking Regulation Act 1949.

	CO-4. To empower to students with skills to prepare the investment account in simple and summarized manner.
Auditing & Taxation-I **Course Code- 354**	CO-1. To acquaint themselves about the Definition, Nature, Objectives and Advantages of Auditing, Types of Audits, Errors and Fraud, Audit Program, Notebook, Working Paper, Internal Control, Check.
	CO-2. To get knowledge about concept of Checking, Vouching, Verification and Valuation, Types of Audit Report and Auditing Assurance Standard.
	CO-3. 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)
	CO-4. To know the various new concepts in computerized system and Forensic Audit
Banking & Finance **Course Code -365-B** **Special Paper - II**	CO-1. To acquaint the students with Indian Financial System and its various segments.
	CO-2. To make the students aware about Indian Money Market.
	CO-3. To analyse and understand the functions of Indian Capital Market.
	CO-4. To enable the students the functioning of Foreign Exchange Market
Banking and Finance **Special Paper III** **Course Code-356 B**	CO-1. To familiarize the Banking Laws and Practice in correlation to the Banking System in India.
	CO-2. To understand the legal aspects of Banking transactions and its implication as a Banker and as a customer.
	CO-3. To familiarize the students with the Banking Laws and Practices in India.
	CO-4. To make students capable of understanding and applying the legal and practical aspects of banking to help them technically sound in banking parlance
Marketing Management C	CO-1. The objective of this course is to facilitate understanding of the conceptual framework of marketing.
	CO-2. To develop the skill among students to use marketing applications in decision making under various environmental constraints.
	CO-3. The course will make learners understand how to make effective marketing decisions, including assessing marketing opportunities and developing marketing strategies and implementation plans
Marketing Management –III **Course Code: 356(H)**	CO-1. To introduce the concept of advertising and advertising media.
	CO-2. To provide the students the knowledge about appeals and approaches in advertisement.
	CO-3. To acquaint the students to the economic, social and regulatory aspects of advertising.

	CO-4 To make the student understand the role of Brand Management in marketing.
Cost & works Account II	CO-1. Ascertainment of cost
	CO-2. Determination of Selling Price & Profitability.
Cost & works Account III	CO-1. Cost control
	CO-2. Cost Reduction
	CO-3. Assisting Management in decision Making
Business Administration II	
Business Regulatory Framework –II Course Code - 361	CO-1. To develop general awareness of Business Law among the students.
	CO-2. To understand the various statutes containing regulatory mechanism of business and its relevant provisions including different types of partnerships.
	CO-3. To acquaint the students on relevant developments in business laws to keep them updated.
	CO-4. To enhance capacity of learners to seek the career opportunity in corporate sector and as a business person.
Advanced Accounting –II Course Code-362	CO-1. To acquaint the student with knowledge about the legal provisions regarding preparation and presentation of final accounts of Co-operative Societies.
	CO-2. To empower to students about the branch accounting in simple.
	CO-3. To understand the procedure and methods of analysis of financial statements.
Auditing & Taxation-II Course Code: 364	CO-1. To understand the basic concepts of Income Tax Act, 1961 and create awareness of direct taxation among the students.
	CO-2. To understand the income tax rules and regulations and its provisions.
	CO-3. To have a comprehensive knowledge of calculation various types of income.
	CO-4. To know the recent changes made by the finance bill (Act) every year and its impact on taxation of person.
	CO-5. To acquaint the students on Income tax department portal (ITD), e-filing and e-services mechanism relating to Assesse.
Banking & Finance Course Code-365-B Special Paper – II Financial Markets and Institutions in India – II	CO-1. To familiarize students about various basic concepts of stock market.
	CO-2. To analyse the types and process of stock trading.
	CO-3. To enable the students to understand the functions and working of Non -Banking Financial Institutions in India.
	CO-4. To enable the students to acquire sound knowledge of Regulatory Bodies in India.

Banking and Finance Special Paper III Course Code -366 B	CO-1. To familiarize students about concept and types cybercrimes in banking.
	CO-2. To understand the aspects of paying and collecting banker.
	CO-3. To analyse the banker and customers relationship.
	CO-4. To enable the students to apply the legal and practical aspects of bank advances.
Marketing Management – II Course Code – 365 h	CO-1. The primary purpose of this course is to brief students about agricultural marketing.
	CO-2. To enable the students to know various marketing regulations, importance of global marketing and various measures used by cyber security marketers in today's digital world.
Marketing Management – III Course Code: 366(H)	CO-1. To introduce the concept of Marketing of Service.
	CO-2. To provide the students the knowledge of Creative Advertisements.
	CO-3. To acquaint the students to various social media marketing.
	CO-4. To make the student understand the technique and process of Marketing Control and Audit.
	CO-5. To enable the students to apply this knowledge in practicality by enhancing their skills in the field of advertising.
Cost & works Account II	CO-1. Specific and measurable statements that define the knowledge skills, and attitudes learners will demonstrate by the completion of a course
Cost & works Account III	CO-1. Helps with price fixing tariff plans, cost control etc.
	CO-2. Cost control and improvement in efficiency
Business Administration II	CO-1. Acquire the knowledge in administration in the aspects of scope, objectives, functions and significance

Faculty of Science

POs, PSOs and COs
(CBCS-2019 Pattern)
Department of Chemistry

PROGRAMME: B.SC. (CHEMISTRY)	
PROGRAMME OUTCOMES	PO-1. To explain To explain nomenclature, structures, reactivity, and preparation of the chemical reactions
	PO-2. Know structure-activity relationship
	PO-3. Solve the problem and also think methodically, independently and draw a logical conclusion.
	PO-4. Make aware and handle the sophisticated instruments and good laboratory practices as well as safety.
	PO-5. Demonstrate, solve and an understanding of major concepts in all disciplines of chemistry.
	PO-6. Develop research oriented skills.
	PO-7. Create an awareness regarding the impact of chemistry on the environment, and society.
	PO-8. To inculcate the scientific temperament in the students and outside the scientific community.

COURSE OUTCOMES:
F.Y.B.SC. (2019 PATTERN)
SEMISTER-I

COURSE	**COURSE OUTCOMES**
CH-101 **Physical Chemistry**	CO-1. Students will be able to apply thermodynamic principles to physical and chemical process.
	CO-2. Calculations of enthalpy, Bond energy, Bond dissociation energy, resonance energy.
	CO-3. Relation between Free energy and equilibrium and factors affecting on equilibrium constant.
	CO-4. Van't Haff equation and its application
	CO-5. Concept to ionization process occurred in acids, bases and pH scale.
CH-102 **Organic Chemistry**	CO-1. The students are expected to understand the fundamentals, principles, and recent developments in the subject area.
	CO-2. To familiarize with current and recent developments in Chemistry.
	CO-3. To create foundation for research and development in Chemistry.
CH-103 **Chemistry** **Practical Course I**	CO-1. Importance of chemical safety and Lab safety while performing experiments in laboratory
	CO-2. Chromatographic Techniques for separation of constituents of mixtures.
	CO-3. Elemental analysis of organic compounds (non-instrumental)

SEMISTER II

CH-201 **Inorganic Chemistry**	CO-1. Various theories and principles applied to revel atomic structure
	CO-2. Radial and angular part of hydro genic wave functions
	CO-3. Explain periodicity in the following properties in details
	CO-4. Explain rules for filling electrons in various orbitals- Aufbau's principle, Pauli exclusion principle, Hund's rule of maximum multiplicity.
CH-202 **Organic Chemistry**	CO-1. Types of Nucleophilic Substitution (SN1, SN2 and SNi) reactions.
	CO-3. Friedel-Craft's reaction (alkylation and acylation) (upto 4 carbons on benzene).
	CO-4. Aromatic nucleophilic substitution (replacement by –OH group) and effect of nitro substituent.
	CO-5. Reactions: With sodium, HX (Lucas test), esterification, oxidation (with PCC, alk. KMnO4, acidic dichromate, conc. HNO3). Oppeneauer oxidation Diols
	CO-6. Reaction with HCN, ROH, NaHSO3, NH2-G derivatives.
	CO-7. Clemenson reduction and Wolff Kishner reduction. Meerwein-Pondorff Verley reduction.
CH-203 **Chemistry Practical –II**	CO-1. Inorganic Estimations using volumetric analysis
	CO-2. Synthesis of Inorganic compounds
	CO-3. Analysis of commercial products

S.Y.B.SC. (2019 PATTERN)
SEMESTER-III

CH-301 **Physical & Analytical Chemistry**	CO-1. Define / Explain concept of kinetics, terms used, rate laws, molecularity, order.
	CO-2. Understand the term specific volume, molar volume and molar refraction.
	CO-3. Discuss integrated rate laws, characteristics, expression for half-life and examples of zero order, first order, and second order reactions.
	CO-4. Solve / discuss problems using theory.
	CO-5. Explain / discuss different terms related to errors in quantitative analysis.
	CO-6. Explain / discuss acid-base titrations, complexometric titration/ precipitation titration / redox titration.
CH-302 **Inorganic and Organic Chemistry**	CO-1. Know the meaning of various terms involved in co-ordinationchemistry.
	CO-2. To understand Werner's formulation of complexes and identifythe types of valences.
	CO-3. Know the limitations of VBT
	CO-4. Know the shapes of d-orbital's and degeneracy of d-orbital's
	CO-5. Draw the geometrical and optical isomerism of complexes

	CO-6. Draw and explain MO energy level diagrams for homo and hetero diatomic molecules. Explain bond order and magnetic property of molecule
	CO-7. Discuss kinetics, mechanism and stereochemistry of SN1 and SN2 reactions.
CH-303 **Chemistry Practical - III**	CO-1. Verify theoretical principles experimentally.
	CO-2. Correlate theory to experiments. Understand/verify theoretical principles by experiment observations; explain practical output / data with the help of theory.
	CO-3. Perform organic and inorganic synthesis and is able to follow the progress of the chemical reaction by suitable method (colour change, ppt. formation, TLC).
	CO-4. Perform the quantitative chemical analysis of substances explains principles behind it.

SEMESTER-IV

CH-401 **Physical and Analytical Chemistry**	CO-1. Explain of one component system with respect to: Description of the curve, Phase rule relationship and typical features for i) Water system ii) Carbon dioxide system iii) Sulphur system.
	CO-2. Explain distillation of liquid solutions from temperature – composition diagram.
	CO-3. Discuss / explain Kohlrausch's law and its Applications, Conductivity Cell, Conductivity Meter, Whetstone Bridge.
	CO-4. Define different terms in Colorimetry such as radiant power, transmittance, absorbance, molar, Lamberts Law, Beer's Law, molar absorptivity.
	CO-5. Explain / define different terms in column chromatography such as stationary phase, mobile phase, elution, adsorption, ion exchange resin, adsorbate, etc.
	CO-6. Apply column chromatographic process for real analysis in analytical laboratory.
CH-402 **Inorganic and Organic Chemistry**	CO-1. Explain different types of isomerism in coordination complexes.
	CO-2. Apply principles of VBT to explain bonding in coordination compound of different geometries.
	CO-3. Explain: i) strong field and weak field ligand approach in Oh complexes ii) Magnetic properties of coordination compounds on the basis of weak and strong ligand field ligand concept. iii) Origin of colour of coordination complex.
	CO-4. Discuss important reactions of aldehydes and ketones.
	CO-5 Identify and draw the structures carboxylic acids and their derivatives from their names or from structure name can be assigned.
	CO-6. Give synthesis diazonium salt from amines and reactions of diazonium salt.Convert one conformation of cyclohexane to another conformation and should able to identify governing structural changes.

CH-403 **Chemistry Practical - IV**	CO-1. Perform the quantitative chemical analysis of substances and able to explain principles behind it.
	CO-2. Understand systematic methods of identification of substance by chemical methods.
	CO-3. Interpret the experimental data on the basis of theoretical principles.

T.Y.B.SC. (2019 PATTERN)
SEMISTER-V

CH-501 **Physical Chemistry- I**	CO-1. Understand and explain the differences between classical and quantum mechanics.
	CO-2. Solving Schrodinger equation for 1D, 2D and 3D model.
	CO-3. Applications to conjugated systems, zero-point energy and quantum tunnelling,Numerical Problems.
	CO-4. Simple Harmonic oscillator model, Born-Oppenheimer approximation. Vibrational spectra of diatomic molecules selection rules, nature of spectral lines.
	CO-5. Raman spectra: Concept of polarizability.
	CO-6. Photochemical reactions: photosynthesis, photolysis, photocatalysis, photosensitization.
	CO-7. Various photochemical phenomena like fluorescence and phosphorescence, Chemiluminescence,
CH-502 **Analytical Chemistry- I**	CO-1. Define basic terms in gravimetry, spectrophotometry, qualitative analysis and parameters in instrumental analysis.
	CO-2. Explain precision, accuracy, Sensitivity, Selectivity, Robustness and Ruggedness, electromagnetic radiations, spectrophotometry, Beers law.
	CO-3. Explain different principles involved in the gravimetry, spectrophotometry, parameters in instrumental analysis, qualitative analysis.
	CO-4. Differentiate among the different analytical terms, process and analytical methods.
	CO-5. Apply whatever theoretical principles he has studied in theory during practical session in laboratory.
CH-503 **Physical Chemistry Practical-I**	CO-1. Calculate molar and normal solution of various concentrations.
	CO-2. Determine specific rotations and percentage of two optically active substances by polorimetrically.
	CO-3. Study the energy of activation and second order reaction.
	CO-4. Study the stability of complex ion and stranded free energy change and equilibrium constant by potentiometry.
	CO-5. Find out the acidity, Basicity and PKa Value on pH meter.
CH-504: Inorganic Chemistry - I	CO-1. Explain MOT of Octahedral complexes with sigma bonding.
	CO-2. Able to compare the different approaches

	to bonding in Coordination compounds.
	CO-3. Stereochemistry of mechanism.
	CO-4. Gain the knowledge of inorganic reaction mechanisms available in the literature to solve chemical problems.
	CO-5. 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
	CO-6. IUPAC nomenclature for super heavy elements with atomic no. 100 onwards.
	CO-7. The difference between Na, Mg, and Al in terms of valence electrons and conductivity.
CH-505 **Industrial Chemistry - I**	CO-1. Importance of chemical industry
	CO-2. Knowledge of various industrial aspects
	CO-3.They should also know the physico-chemical principals involved in manufacturing process
	CO-4. Sugar Industry: The students are expected to learn,
	CO-5. Clarification by processes like carbonation, vi. Sulphitation, vii. Phosphatation, etc.
	CO-6. Manufacturing of ethyl alcohol by using molasses and fruit juice.
	CO-7. Dyes - Students should know about
	CO-8. Pigments: Students should know about
	CO-9. Fermentation Industry- The students are expected to learn.
CH-506 **Inorganic Chemistry Practical-I**	CO-1. Study the gravimetric and volumetric analysis of ores and alloy.
	CO-2. Prepare a various inorganic complexes and determine its % purity.
	CO-3. To study binary mixture with removal of borate and phosphate.
	CO-4. To understand the chromatographic techniques.
CH-507 **Organic Chemistry - I**	CO-1. Polynuclear and Heteronuclear Aromatic Compounds: After studying the polynuclear and heteronuclear aromatic compounds
	CO-2. Write the structure, synthesis of polynuclear and hetreonuclear aromatic hydrocarbons.
	CO-3. Active Methylene Compounds : Students should be able to understand
	CO-4. Synthetic applications ethyl acetoacetate and malonic ester.
	CO-5. Molecular Rearrangements Study.
CH-508 **Chemistry of Biomolecules**	CO-1. Introduction to molecular logic of life.
	CO-2. Biological composition and organization of cell membrane, structure and function of various cell organelles of plant and animal cell.
	CO-3. The student will understand the types of carbohydrates and their biochemical significance in living organisms,
	CO-4. Equations of enzyme kinetics Km and its

	significance, features of various types of enzyme inhibitions, industrial applications of enzymes.
CH-509 **Organic Chemistry Practical-I**	CO-1. Perform the Binary mixtures.
	CO-2. Preparation of organic compounds, their purifications and run.TLC.
	CO-3. Determination of physical constant: Melting point, Boiling point.
	CO-4. Different separation techniques.
CH-510 (B) **Polymer Chemistry**	CO-1. Difference between natural, synthetic, organic and inorganic polymers.
	CO-2. Terms-Monomer, Polymer, Polymerization, Degree of polymerization, Functionality, Number average, Weight average molecular weight.
	CO-3. Role of polymer industry in the economy.
CH-511(A) **Environmental Chemistry**	CO-1. Importance and conservation of environment.
	CO-2. Importance of biogeochemical cycles

SEMISTER VI

CH601 **Physical Chemistry-II**	CO-1. Electrochemical cells: Explanation of Daniell cell, Conventions to represent electrochemical cells.
	CO-2. Thermodynamic conditions of reversible cell, Explanations of reversible and irreversible electrochemical cell with suitable example.
	CO-3. Fuel Cells: Types of fuel cells, advantages, disadvantages of these fuels cells, comparison of battery Vs fuel cell.
	CO-4. Methods of Crystal structure analysis: The Laue method and Bragg's method: Derivation of Bragg's equation.
	CO-5. Detection and Measurement of Radioactivity: Cloud chamber, Ionization Chamber, Geiger-Muller Counter, Scintillation Counter, Film Badges.
CH-602 **Physical Chemistry-III**	CO-1. Meaning of the terms-Solution, electrolytes, nonelectrolytes and colligative properties.
	CO-2. Relation between Vant Hoff's factor and degree of dissociation of electrolyte by colligative property.
	CO-3. Band structure in solids – Na, Ca and diamond.
	CO-4. Semiconductors – Role of impurity in transformation of insulator into semiconductor.
	CO-5. Practical significance of polymer molecular weights.
CH-603 **Physical Chemistry Practical-II**	CO-1. Calculate molar and normal solution of various concentrations.
	CO-2. Determine specific rotations and percentage of to optically active substances by polorimetrically.
	CO-3. Study the energy of activation and second order reaction.
	CO-4. Study the stability of complex ion and stranded free energy change and equilibrium

	constant by potentiometry.
	CO-5. Find out the acidity, Basicity and PKa Value on pH meter.
CH-604 **Inorganic Chemistry -II**	CO-1. To understand M-C bond and to define organometallic compounds.
	CO-2. To understand the uses of organometallic compounds in the homogenous catalysis.
	CO-3. Understand the essential properties of homogeneous catalysts-Give the catalytic reactions for Wilkinson's Catalysis, hydroformylation reaction, Monsanto acetic acid synthesis, Heck reaction.
	CO-4. Understand the classification and essential properties of heterogeneous catalysts.
	CO-5. Draw the structure of Vit.B12 and give its metabolism.
	CO-6. Understand the polymers of Si, B, Si and P.
	CO-7. Ionic liquids, their preparations, and their significance w.r.t green chemistry.
CH-605 **Inorganic Chemistry-III**	CO-1. Student will learn the concept of acid base and their theories.
	CO-2. How acid and base strengths get affected in non-aqueous solvents.
	CO-3. Different Zeolite Framework Types and their classification
	CO-4. Properties and Application of Nanoparticles
	CO-5. To know the biochemical effect of Arsenic, Cd, Pb
CH-606 **Inorganic Chemistry Practical-II**	CO-1. Study the gravimetric and volumetric analysis of ores and alloy.
	CO-2. Prepare a various inorganic complexes and determine its % purity. CO-3. To study binary mixture with removal of borate and phosphate.CO-4. To understand the chromatographic techniques.
CH-607 **Organic Chemistry-II**	CO-1. They will understand different regions of electromagnetic radiations.
	CO-2. Students will learn the principle of mass spectroscopy, its instrumentation and nature of mass spectrum.
	CO-3. Students will understand the principle of UV spectroscopy and the nature of UV spectrum. They will learn types of electronic excitations.
	CO-4. From the IR spectrum, they will be able to find out IR frequencies of different functional groups. And thus, they will be able to find functional groups present in the compound.
	CO-5. Students will be able to interpret the NMR data and they will be able to use it for determination of structure of organic compounds.
	CO-6. Students will understand the principle of IR spectroscopy.
CH-608 **Organic Chemistry-III**	CO-1. Chemistry of reactive intermediates (carbocations, carbanions, free radicals, carbenes, nitrenes, benzynes etc.).
	CO-2. Wittig reaction and McMurry reaction.

	CO-3. Classification. Citral- structure determination using chemical and spectral methods.
CH-609 **Organic Chemistry Practical- II**	CO-1. Perform the Binary mixtures.
	CO-2. Preparation of organic compounds, their purifications and run TLC.
	CO-3. Determination of physical constant: Melting point, Boiling point.
	CO-4. Different separation techniques.
CH-610(B) **Introduction to Forensic Chemistry**	CO-1. The significance of forensic science to human society.
	CO-2. Encourage academic students towards the noble career
	CO-3. The classification and characteristics of the narcotics, drugs and psychotropic substances.
CH-611(A) **Analytical Chemistry-II**	CO-1. Perform quantitative calculations depending upon equations students has studied in the theory. Furthermore, student should able to solve problems on the basis of theory.
	CO-2. Discuss / Describe procedure for different types analyses included in the syllabus.
	CO-3. Select particular method of analysis if analyse sample is given to him.
	CO-4. Differentiate / distinguish / compare among the different analytical terms, process and analytical methods.
	CO-5. Demonstrate / explain theoretical principles with help of practical.
	CO-6. Design analytical procedure for given sample.
	CO-7. Apply whatever theoretical principles he has studied in theory during practical in laboratory.

Post Graduate Department of Chemistry

SEMESTER-I

PROGRAMME: M.SC. (CHEMISTRY)	
Programme Outcomes	PO-1. Learn the terms, theories, assumptions, methods, principles, theorem statements and classification.
	PO-2. Fix out the problem and resolve it using theories and practical knowledge.
	PO-3. Inculcate knowledge for carrying projects and advanced research related skills.
	PO-4. Actively participates in team on case studies and field-based situations.
	PO-5. Analyse and interpret ideas, evidences and experiences with learned scientific reasoning.
	PO-6. Aware and implement the subject facts that can be applied for the personal and social development.
	PO-7. Use digital literacy to retrieve and evaluate subject related information.

Course Outcomes: M.Sc. (2019 Pattern)
Semester I

CHE- 501 **Physical Chemistry I**	CO1: Students should be able to remember the concepts of thermodynamic parameters, quantum mechanical postulates, rate laws of chemical reactions and computation of macroscopic properties of matter.
	CO2: Students should understand the basics like state function and path function, Schrodinger wave equation, kinetics of fast reactions, partition functions and ensembles.
	CO3: Students should be able to apply the knowledge of various quantum mechanical methods to determine the different molecular properties and built the concept of the relation between thermodynamics and quantum mechanics.
	CO4: Students should be able to analyze the rates of various chemical reactions both theoretically and experimentally and also observe the effect of catalyst and determine energies of activation of such reactions.
	CO5: Students should be able to evaluate variation of thermodynamic parameters for multi component systems and their variation with other extensive properties, Schrodinger wave equation and its application to hydrogen and hydrogen like atoms.
CHE-502 **Inorganic Chemistry-I**	CO-1: Define symmetry elements and symmetry operations, classes, properties of a group, group multiplication table, etc.
	CO-2: Classify symmetry elements, point group, Group, sub-group and classes.
	CO-3: Use wave function as basis for determination of irreducible representations and the Great Orthogonality theorem and its consequence.
	CO-4: Solve problem based on point group, matrix representation and character table
	CO-5: Construct character table of various point group
	CO-6: Justify which can take part in bonding on the basis of SALCs and point group of molecules.
CHE-503 **Organic Chemistry-I**	CO1: Understand the concepts of chemical bonding, various structural effects, acids and bases, intermediates and aromaticity.
	CO2: Learn the concepts of stereochemistry.
	CO3: Understand and identify the types of organic reactions.
	CO4: Advanced knowledge of various stereochemical aspects.
	CO5: Establish mechanistic knowledge of aliphatic and aromatic substitutions, and oxidationreduction reactions
	CO6: Develop problem solving ability of the students.
CHE- 504 **Physical Chemistry Practical I**	CO1: Students will grasp the concept of reaction rate and its significance in Chemical Kinetics.
	CO2: Students will learn how to use experimental data to deduce rate laws and rate constants.
	CO3: Students will be familiar with the fundamental principles of colorimetry and spectrophotometry including Beer's law, Lambert- Beer's law and the

	relationship between absorbance and concentration.
	CO4: Students will be able to operate the instruments like spectrophotometer and colorimeter.
	CO5: Students will be able to determine the densities of the solutions and can calculate molar volumes.
CHE-505 **Inorganic Chemistry Practical-I**	CO-1: Prepare solution of required conc. and the handle laboratory equipment properly.
	CO-2: Perform experiment accurately and able to perform calculation.
	CO-3: Explain experiment and principal of experiment in detail.
	CO-4: Perform calculations and discuss results and write conclusions of the experiment.
	CO-5: Apply knowledge to a) design experiment for given aim or modify experiment to enhance results. b) to find out lacuna in experimental procedure.
	CO-6: Solve problem/ numerical depending on given experimental data / information.
CHE-506, Organic Chemistry Practical I	CO1: Understand the theoretical aspects behind separation, purification and synthesis of organic compounds.
	CO2: Acquire the experimental skills for separation, purification, identification and synthesis of organic compounds.
	CO3: Design experimental set up for performing the organic reactions.
	CO4: Monitor the organic reactions.
	CO5: Describe the mechanistic aspects of organic reactions.
	CO6: Develop problem solving ability.
CHE-507(C) **Analytical Chemistry**	CO1: Define/memorize GLP, Lab Safety, Quality assurance
	CO2: Discuss good laboratory practices, laboratory emergencies, and mass spectrometry
	CO3: Apply their knowledge to prepare quality assurance reports, emergencies in the laboratory
	CO4: Differentiate between different ionization technique, compare hazardous and non-hazardous material handling
	CO5: Explain the Quality Assurance, Laboratory Accreditation, Laboratory Emergencies, different ionization technique
	CO6: Applications of GLP, Lab Safety, mass spectrometry.
CHE-508 **Research methodology**	CO1: Develop a comprehensive understanding of different research methodologies and their applications in mathematics.
	CO2: Cultivate critical thinking and analytical skills necessary for identifying research problems and formulating research questions.
	CO3: Provide practical experience in designing experiments, collecting and analysing data, and interpreting research results.
	CO4: Foster effective communication skills for presenting research findings orally and in written form.
	CO5: Promote ethical research practices and

	awareness of responsible conduct in mathematical research
	CO6: Develop problem solving ability

Semester II

CHE- 551 **Molecular Spectroscopy**	CO1: Remember basic concepts of molecular spectroscopy, selection rules, and intensity of spectral lines and width of spectral transition.
	CO2: Understand principles and applications of rotational, vibrational, raman, electronic and mossbauer spectroscopy.
	CO3: Apply various spectroscopic techniques for gaining insights into molecular structure
	CO4: Analyse vibrating diatomic molecule, simple harmonic and anharmonic oscillator, Scattering of light and Raman Spectrum.
CHE-552 **Inorganic Chemistry-II**	CO-1: Define R. S. term, configuration, microstate, paramagnetic, diamagnetic ferromagnetic, antiferromagnetic, Curie and Neel temperature.
	CO-2: Identify complex ions showing same R.S. terms, degeneracy of ground state terms ofmetal ions, and spin multiplicities of different configurations.
	CO-3: Interpret electronic spectra forspin allowed Oh and Td complexes using Orgel diagram,Magnetic properties of A, E and T ground terms in complexes and selection rules.
	CO-4: Express nitrogen fixation, detoxification of mercury, structure of RNA, cis-platin, amino acids,siderophore,and calmoduline zinc finger proteins.
	CO-5: Distinguish between hemoglobin and myoglobin, transferrin and ferritin, photosystem-I and photosystem-II.
CHE-553 **Organic Chemistry-II**	CO1: Understand the concepts of pericyclic and photochemical reactions, and molecular rearrangements
	CO2: Learn concepts of Organic Spectroscopy.
	CO3: Identify the type of pericyclic and photochemical reactions
	CO4: Solve the problems based on pericyclic and photochemical reactions and molecular rearrangements
	CO5: Deduce the structure from the spectral data and justify the findings.
	CO6: Develop problem solving ability of the students.
CHE- 554 **Physical Chemistry Practical II**	CO1: Students will grasp the fundamental principles of Conductometry, Polarography, Potentiometry and pH metry.
	CO2: Students will familiar with the operation of Conductometer, Polarimeter, Potentiometer and pH meter.
	CO3: Students will understand the concepts of

	conductance, resistance and learn how to calculate and interpret these values.
	CO4: Students will learn to interpret polarographic waves and understand their significance in identifying electroactive species and determining their concentration.
CHE-555 **Inorganic Chemistry Practical-II**	CO-1: Define coordination complex, cell constant, resistance, specific conductance, equilibrium constant, absorbance, Beer's law, solubility product, chromatography
	CO-2: Discuss photochemistry of potassium trioxalatoferrate complex, kinetics of formation of Cr(III)-EDTA, Determination of Cu(II)and Fe (II) by solvent extraction technique.
	CO-3: Outline the flow-chart for synthesis of [Mn(acac)3], Chloropentaamminecobalt (III) chloride, Nitro pentaamminecobalt(III) chloride, Bis [TrisCu(I)thiourea complexes
CHE-556 **Organic Chemistry Practical II**	CO1: Understand the theoretical concepts behind organic synthesis.
	CO2: Acquire the experimental skills for separation, purification, identification and synthesis of organic compounds.
	CO3: Design experimental set up for performing the organic reactions.
	CO4: Monitor the organic reactions and analyse the products using spectral results.
	CO5: Describe the mechanistic aspects of organic reactions.
	CO6: Develop problem solving ability
CHE-557(A) **Organometallic Compounds and Inorganic Reaction Mechanism**	CO1: Define various terms in organometallic chemistry and inorganic reaction mechanism etc.
	CO2: Explain/Discuss various reaction mechanisms such as ligand insertion, inner and outersphere mechanism, ligand substitution reaction.
	CO3: Discuss 1. Structure and bonding in carbonyl and organometallic complexes, 2: Trans effect, 3. Ligand field effects, catalytic cycles, 4. Inert and labile complexes, 5. Synthesismethods of organometallic compounds, etc.
	CO4: Apply 18 electron rule. Applications of organometallic compounds and mechanism of these reactions.
	CO5: Demonstrate IR spectra of carbonyl complexes, deduce structure of carbonyl complexes.

PROGRAMME OUTCOMES

PROGRAMME: M. SC-II ANALYTICAL CHEMISTRY	
Programme outcomes	PO-1. Demonstrate, solve and an understanding of major concepts in alldisciplines of Chemistry.
	PO-2. Solve the problem and also think methodically, independently and draw a logical

	conclusion.
	PO-3. Create an awareness of the impact of chemistry on the society, anddevelopment outside the scientific community.
	PO-4. Become professionally trained in the area of Industry, material science, lasers and Nano Technology.
	PO-5. Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of Chemistry experiments.
	PO-6. To inculcate the scientific temperament in the students and outside thescientific community.
	PO-7. Apply modern methods of analysis to chemical systems in alaboratory setting.

COURSE OUTCOMES
M. SC ANALYTICAL CHEMISTRY
SEMESTER-I

Course	Course Outcomes
CHA-390 Electrochemical and Thermogravimetric Methods of Chemical Analysis	CO-1. Define various terms in electrochemistry and thermogravimetry.
	CO-2. Explain instrumentation in electrochemistry and thermogravimetry.
	CO-3. Describe basic principles of electrochemistry and thermogravimetry.
	CO-4. Explain /Describe applications of electrochemistry and thermogravimetry in industry and in analytical laboratory.
CHA-391 Analytical Method Development and Extraction Techniques	CO-1. Define / understand various terms in analytical extraction and method development and validation.
	CO-2. Explain instrumentations and methodology in analytical extraction.
	CO-3. Explain / describe basic principles of analytical extraction method development and validation.
	CO-4. Apply / select particular method of analysis for sample to be analyzed.
	CO-5. Differentiate among the methods of analytical extraction.
CHA-392 Advanced Chromatographic Methods of Analysis	CO-1. Define / understand various terms in chromatography (GC and HPLC) and mass spectroscopy.
	CO-2. Explain instrumentations in chromatography (GC and HPLC) and mass spectroscopy.
	CO-3. Explain /Describe applications chromatography (GC and HPLC) in industry and in analytical laboratory.
	CO-4. Solve numerical problems on chromatography (GC and HPLC) and mass spectroscopy

	CO-5. Integrate GC and HPLC chromatogram, Mass spectrum
	CO-6. Differentiate among the chromatography (GC and HPLC) methods of analysis.
CHA-393 **B) Analysis of Food and Controlled Substances**	CO-1. Define / understand various terms in food analysis techniques and methods, forensic science and drug substances.
	CO-2. Select appropriate methods of food analysis for its quality.
	CO-3. Select and describe the parameters required for food quality
	CO-4. Solve numerical problems on analysis food and drug substances.
	CO-5. Interpret food quality and drug substances from analytical results.
	CO-6. Differentiate among the different methods of analysis of food and drug substances.
CCPP-394 **Practical I** **Basics of Instrumental Methods of Chemical Analysis**	CO-1. Define / understand various terms involved practical methods of quantitative analysis.
	CO-2. Design / modify and validate new analytical method for chemical analysis of particular sample.
	CO-3. Apply / select particular method / instrumental parameters for analysis of given sample.
	CO-4. Give mathematical treatment to analytical data and able to interpret the results accurately
	CO-5. Verify theoretical principle practically or apply theory to explain practical observations.
	CO-6. To conclude the results able to take the decision regarding quality of sample.
SEMESTER-IV	
CHA-490 **Advanced Analytical Spectroscopic Techniques**	CO-1. Define / understand various terms in atomic absorption, atomic emission, fluorescence, ESR and electron spectroscopy.
	CO-2. Select appropriate methods for sample treatment in AAS / AES, ICPAES, ICPAES-MS.
	CO-3. Explain advantages of ICPAES-MS over AES spectroscopy, fluorescence spectroscopy.
	CO-4. Solve numerical problems on analysis all these spectroscopic methods.
	CO-5. Calculate theoretical parameters from ESR data and characterize compound.
	CO-6. Solve problems based on atomic absorption, atomic emission, ICPAES, ICPAES-MS, fluorescence, ESR and electron spectroscopy.
CHA-491 **Chemical Methods of Pharmaceuticals Analysis**	CO-1. Define / understand various terms in pharmaceutical raw material and finished product analysis.
	CO-2. Explain various pharmaceutical dosage forms and types of raw materials used.

	CO-3. To describe basic principles of methods of pharmaceutical analysis according to IP.
	CO-4. Explain importance particular test in pharmaceutical raw material and finished product analysis.
	CO-5. Solve numerical problems on analysis pharmaceutical raw material and finished product analysis.
CHA-492 **B) Analytical Chemistry of agriculture, Polymer and Detergents**	CO-1. Define / understand various terms in soil analysis, pesticide residue analysis, detergent analysis and polymer analysis.
	CO-2. To describe basic principles techniques / methodssoil analysis, pesticide residue analysis, detergent analysis and polymer analysis.
	CO-3. Choose suitable method / techniques to characterize quality of soli polymer and detergent.
	CO-4. Solve numerical problems on analysis soil, pesticide residue, detergent and polymer.
	CO-5. Draw conclusion regarding soil, detergent and polymer quality from analytical results.
CHA-493-A **Optional Analytical Chemistry Practical**	CO-1. To analyse organic and inorganic materials using appropriate chemical / instrumental methods
	CO-2. Apply / select particular method / instrumental parameters for analysis of given sample.
	CO-3. Maintain appropriate reaction conditions as described in procedures.
	CO-4. To perform i) selective analysis of particular component from sample. ii) Analysis at trace level from sample.
	CO-5. To conclude the results able to take the decision regarding quality of sample.
	CO-6. To perform calculations and interpret the results.
CHA-494 **Practical II: Applied Analytical Chemistry**	CO-1. Maintain proper record of analytical data in notebook. Observer personal safety in laboratory and able handle all chemicals, instruments etc. safely in laboratory.
	CO-2. Define / understand various terms involved practical methods of quantitative analysis.
	CO-3. Perform analysis of sample with described procedure. Able to handle analytical instruments.
	CO-4. Apply / select particular method/ instrumental parameters for analysis of given sample.
	CO-5. Maintain appropriate reaction conditions as described in procedures.
	CO-6. To conclude the results able to take the decision regarding quality of sample.
	CO-7. To perform calculations and interpret the results.

(Organic Chemistry)

Programme Outcomes: M. Sc. -II Organic Chemistry

Programme: M.Sc.-II Organic Chemistry	
Programme Outcomes	PO-1. Demonstrate, solve and an understanding of major concept in all discipline of chemistry.
	PO-2. Apply various aspect of chemistry in natural product.
	PO-3. Demonstrate, solve and an understanding of major concepts in all disciplines of Chemistry

Semester-I

CHO-350 **Organic Reaction Mechanism and Biogenesis**	CO-1.To study the Kinetic and nonkinetic methods
	CO-2. Inter- and intra-molecular bond formation via mercury hydride, tin hydride, thiol donors
	CO-3. , C-C bond formation in aromatics, SNAr reactions,
	CO-4. Deviations from straight line plots, Taft equation, solvent effects.
	CO-5. Mono-, Sesqui-, Di-, tri-terpenoids and cholesterol
	CO-6. Derived from ornithine, lysine, nicotinic acid, tyrosine and tryptophan.
	CO-7. Cinnamic acids, lignans and lignin, coumarins, flavonoids and stilbens, isoflavanoids and terpenoid quinones
CHO-351 **Structure Determination of Organic Compounds by Spectroscopic Methods**	CO-1. To understand the Homotopic, enatiotopic and distereotopic protons, Chemical and Magnetic equivalence
	CO-2. To Study The First and second order splitting
	CO-3. Undamentals and applications in structure elucidation of organic compounds, catalysts and biomolecules.
	CO-4 To understand ^{13}C NMR spectroscopy - APT, DEPT and INEPT
	CO-5. Rearrangements, factors affecting fragmentation, ion analysis, ion abundance
CHO-352 **Stereochemistry and Asymmetric Synthesis of Organic Compounds**	CO-1. Conformations of polysubstituted cyclohexane, six membered rings with SP2 carbon
	CO-2. Nomenclature, synthesis; stereochemical aspects of Perhydrophenanthrene
	CO-3. To study Bredt's Rule
	CO-4. Determination of configuration, Cram's rule, Cram's cycle model, Cram's dipolar model
	CO-5. Decalols, Decalones, Octahydronaphthalenes, decahydroquinolines

	CO-6. Asymmetric Aldol Reaction, Enantioselective, diastereoselective and double diastereoselective Aldol reactions.
CHO-353(A) **Protection - De-protection, Chiron approach and Carbohydrate Chemistry**	CO-1. Protection and de-protection of functional group in organic synthesis
	CO-2. To Understand The Hydroxyl group- alkyl ether
	CO-3. Study the Protection de-protection approach - In Solid phase synthesis of polypeptide; polynucleotide
	CO-4. Understand the glycosyldonar acceptor concept, general methods for glycosyl bond formation
	CO-5. Synthesis of 2-Deoxy Sugars, Orthogonal strategy in Oligosaccharide synthesis
CHO-354 **Practical-I Solvent Free Organic Synthesis**	CO-1. The synthesize Pinacol coupling reaction
	CO-2. The synthesize Claisen reaction
	CO-3. The synthesize Solvent-Free C–N Bond Formation
	CO-4. The synthesize Solvent-Free C–S Bond Formation
	CO-5. The synthesize Solvent-Free C–X Bond Formation
	CO-6. The synthesize Solvent-Free N–N Bond Formation
	CO-7. The synthesize Solvent free supramolecular assembly formation
CHO-450 **Chemistry of Natural Products**	CO-1. Understanding and planning of total synthesis while maintaining the stereochemistry
	CO-2. To understand the Biogensis of naturally occurring essential compound
CHO-451 **Organometallic Reagents in Organic Synthesis**	CO-1. To Study theTransition metal complexes in organic synthesis; Pd, Ni, Ru, Fe, Ir and Cu only (C-C, CN, C-O bond formation reactions
	CO-2. To study the C=C formation reactions: Wittig, Horner-Wordworth-Emmons, Shapiro, BamfordStevens, McMurry, Julia-Lythgoe and Peterson olefination reaction
	CO-3. To study the Multi-component reactions: Ugi, Passerini, Biginelli and Mannich reaction
	CO-4. To study the Use of Boron and Silicon reagents in organic synthesis.
CHO-452(A) **Concepts and Applications of Medicinal Chemistry**	CO-1. To study the Chemistry of TPP, PLP, Folic Acid and other vitamins, Principle of drug design, Chemistry of diseases and Drug development, Proton pump inhibitors and Problem solving.
	CO-2. To understand Peptides and proteins, Proteins
	CO-3. To Study The Pharmacokinetics and Pharmacodynamics of drug: Drug absorption, distribution, metabolism

	CO-4. To understand the Developments, SAR, Mode of action, limitations and adverse effect of Anti-infective Agents, Beta lactam antibacterial agents
	CO-5. To Study the Chloramphenicol, Polyenes, Amphotrecin-B, Azoles, Amantadine,Acyclovir, Quinine, Quinolines, Quinolones, Refamycine, Sulphonamides
CHO-453 **Practical-III: Select ANY TWO Section I, II and III**	CO-1. Understand and employ concept of type determination and separation
	CO-2. Perform qualitative estimation of functional groups
	CO-3. Perform micro scale chemical elemental analysis
CHO-454 **Practical-II: Convergent and Divergent Organic Syntheses**	CO-1. To Synthesize the Anisole to 4-nitro anisole to 4-amino anisole
	CO-2. To Synthesize the Acetyl acetone to Pyrimidine
	CO-3. To Synthesize 4-Nitro toluene to 4-amino toluene
	CO-4.To Synthesize the β-Naphthol to Synthetic dye (By diazonium coupling)

Department of Botany

PROGRAMME: B.SC. (BOTANY)	
PROGRAMME OUTCOMES	PO-1. Demonstrate and Apply Fundamental knowledge of basic principles of major fields of biology.
	PO-2. Apply knowledge for conservation of endemic and endangered plant species.
	PO-3. Students learn to carry out practical work, in the field and in the laboratory, interpreting plant morphology and anatomy, Plant identification, Vegetation analysis techniques.
	PO-4. Understanding of Plant Diversity and its importance in the maintenance of ecological balance.
	PO-5. Apply modern techniques and instruments for Biochemical estimation, Molecular Biology, Biotechnology, Plant Tissue culture experiments, cellular and physiological studies of plants with an understanding of the applications in human life.
	PO-6. Apply the knowledge gained from the studies for the upliftment of society via addressing health, environmental issues, food scarcity etc.
	PO-7 Apply knowledge for conservation of endemic and endangered plant species.

PROGRAMME SPECIFIC OUTCOMES	PSO-1. Critical evaluation of ideas and arguments by collecting relevant information about the plants, so as to recognize their position in the classification systems and at phylogenetic level.
	PSO-2. Students will be able to compare and contrast the characteristics of the different groups of plants such as algae, fungi, bryophytes, pteridophytes, gymnosperms and angiosperms.
	PSO-3. Students will be able to explain how Plants function at gene, genome, cellular and tissue level.
	PSO-4. Students will be will be able to relate the physical features of the environment to the structure of populations, communities, and ecosystems.
	PSO-5. Students will be able to conceive the idea of artificial propagation of plants via vegetative methods and to find a livelihood via establishing miniature plant nurseries

COURSE OUTCOMES:
F.Y.B.SC. (2019 PATTERN)
SEMISTER-I

COURSE	COURSE OUTCOMES
BO 111 **Plant Life and Utilization I**	CO-1. Students will be made aware of plant life and its classification
	CO-2. Students will know lower cryptogams, higher cryptogams and phanerogams with detailed understanding of their life cycles, and applications.
BO 112 **Plant Morphology and Anatomy**	CO-1. Students will acquire knowledge on different morphological features like, fruit, flower, inflorescences their types and distinguishing features.
	CO-2. These learning points will help the student in further applied aspects of the subjects during their higher studies.
	CO-3. The course will also develop their thinking ability to identify and let know the knowhow and importance of the plants to wider societal reach.

SEMISTER-I

COURSE	COURSE OUTCOMES
BO 121 **Plant Life and Utilization II**	CO-1. Students will be made aware of plant diversity in Pteridophytes, Gymnosperms and Angiosperms with reference to vascular plants
	CO-2. The student will understand the role of these groups with detailed understanding of their life cycles, and applications.
BO 122 **Principles Of Plant Science**	CO-1. The learner will understand the physiological processes in the plants.
	CO-2. The students will get acquainted with different cellular functions and processes of cell division
	CO-3. The course will create an applied interest of the students in the subject and will provoke to consider research as one of the potential field as career.

COURSE OUTCOMES:
S.Y.B.SC. (2019 PATTERN)
SEMISTER-III

COURSE	COURSE OUTCOMES
BO 131 **Plant Systematics and Plant Ecology**	CO-1. The students will be able know the objectives, importance and scope of plant systematics.
	CO-2. The learner will have a deep knowledge on different plant families and its characterization features.
	CO-3. The course will be made aware of his/her role in environment and will make them a responsible citizen it will also force to think students about sustainable ecology.
BO 132 **Plant Physiology**	CO-1. Learners will have an in deep knowledge about importance of plant physiology and its application
	CO-2. Students will acquire understanding about biophysical phenomenon and various process in plants like plasmolysis, osmosis, diffusion, permeability
	CO-3. The learner will have an understanding about water absorption, various cells involved in the process and their functioning.
	CO-4. The students will understand the role of plant growth regulators its types and also the process of flowering.

SEMISTER-IV

COURSE	COURSE OUTCOMES
BO 241 **Plant Anatomy and Embryology**	CO-1. The students will have an in deep knowledge about different types of tissues with understanding of their role in plant system
	CO-2. The student will understand the process of embryo formation, types of embryo and process of fertilization in plants.
	CO-3. The learner will also get an in deep idea about a branches of botany i.e. palynology, with its application in lucrative industries.
BO 242 **Plant Biotechnology**	CO-1. The student will be introduced and made acquainted with the applied field of biotechnology with special reference to the plants.
	CO-2. The learner of the course will have a detailed knowledge on plant genome, genetic engineering and bioprocesses.
	CO-3. The student will have an understanding about the different applied industries in the stream and its applications in food, medicine etc.
	CO-4. The course will ensure enhanced the level of understanding of students in the subject area and provoke them to consider it as a potential career.

T.Y.B.SC. (2019 PATTERN)
SEMISTER-V

BO 351 **Algae and Fungi**	CO-1. The learner will get acquainted with life cycles of lower cryptogams.
	CO-2. The students will understand details and applications of algae, fungi.
	CO-3. The learner of the course will have an understanding of the phylogenetic relationship and role in human welfare.
BO 352 **Archegoniate**	CO-1. The learner will get acquainted with life cycles of archegoniate.
	CO-2. The students will understand details and applications of bryophytes and pteridophytes.
	CO-3. The learner of the course will have an understanding of the phylogenetic relationship and role in human welfare.
BO 353 **Spermatophyta and Paleobotany**	CO-1. The learner will understand gymnosperms and angiosperms in details with classification, origin and study of angiosperm families
	CO-2. The student will be able to identify the plants based on various keys like Latin diagnosis, bracketed keys and also will be able to prepare artificial keys.
	CO-3. The student will learn to identify and classify the groups of plants according to their characters.
	CO-4. The students will understand importance of learning paleobotany, this will help in comparing the present day plants with primitive fossil plants.
BO 354 **Plant Ecology**	CO-1. The learner of the course will have an interrelationship between the living world and environment.
	CO-2. The learners will understand environmental crisis, environmental impact assessment and environmental audit so as to know the responsibility.
	CO-3. The students of the course will also be acquainted with ecology and economics & remote sensing.
	CO-4. The students of the course will also be well versed with introduction of biodiversity, its aim, concept and objectives.
	CO-5. The students of the course will understand current practices in conservation including in situ, ex situ and social approach to biodiversity conservation
BO 355 **Cell and Molecular Biology**	CO-1. Organisation of cell its history and type of cells: prokaryotic and eukaryotic
	CO-2. Physical and chemical nature of cell matrix. Plant cell cytoplasmic constituents, cell organalles and their structure and function.

	CO-3. Learner will be acquire knowledge related to genetic material, its nature, forms, various structure models and laws.
	CO-4. Learners will be enlightened with DNA replication, experiments invoked in providing it and its mechanism, DNA damage and repair.
BO 356 **Genetics**	CO-1. Students will learn about concept of heredity and variation along with various branches and application of genetics
	CO-2. Learners will have basic information and understanding about Mendelism, terminology involved and various laws involved.
	CO-3. The students will make an understanding about interactions involved in genes Multiple allele using Nicotiana and Drosphila as model organism.
	CO-4. The students of the course will be introduced to theories of evolution Darwinism and Lamarckian and modern synthetic theory.
BO 3510 **Medicinal Botany**	CO-1. The students will be introduced to pharmacognosy its origin history and scope.
	CO-2. The learner will be introduced to ayurvedic pharmacy, tridosha concept, ayurvedic principles and formulations.
	CO-3. The students will be made understand analytical medicinal botany along with cultivation, collection and processing of herbal drugs.
	CO-4. The learner of the course will have a in depth knowledge on applied medicinal botany, concepts of major metabolic pathway, ethnobotany.
BO 3511 **Plant Diversity & Human Health**	CO-1. Student will understand plant diversity and importance of it in human health.
	CO-2. They will come to know about exotic species- Identification and morphological characteristics.
	CO-3. To make student realize ecological importance of plants and describe the role of plants in relation to Human health.
	CO-4. Students will know diversity issues and types of diversity, conservation strategies to implemented in their daily life.
	CO-5. The students will be made acquainted with agrobiodiversity and its importance in human health

SEMISTER VI

BO 361 **Plant Physiology and Metabolism**	CO-1. The learner of the course will understand details on plant physiology, photosynthesis, and different pathways.
	CO-2. The students will have knowledge on respiration, structure of mitochondrion, and various cycles involved like glycolysis, TCA, ETS and ATP synthesis.

	CO-3. The learners will understand translocation of organic solutes, and stress physiology.
	CO-4. The learner should undertand the functional aspect of the plant's metabolism.
BO362 **Biochemistry**	CO-1. CO1. The learner is able to learn the mechanism of conversion of simple to complex components and their functions.
	CO-2. The learners of the course will be made available knowledge on carbohydrates, amino acids, proteins, lipids.
	CO-3. The students will understand definition and nature of enzymes and properties of enzymes.
BO 363 **Plant Pathology**	CO-1. The learners will be made acquainted with fundamentals of plant pathology, and important terminologies and significance.
	CO-2. The students will be having a wide exposure to various institutes working on such area, concept of disease cycle, disease development and its mechanism.
	CO-3. The students will be made versed with methods of studying plant diseases, fungal, bacterial, mycoplasma, nematodal, viral plant disease, non parasitic diseases.
BO 364 **Evolution and Population Genetics**	CO-1. After completing the course the student should understand and be able to explain fundamental terminology and concepts in the fields of genetics and evolution.
	CO-2. The student should have a good understanding of central concepts in population and quantitative genetics
	CO-3. Student should also understand the basic scientific methods, including data analysis, used in these fields, and be able to carry out simple analyses using empirical population genetics and quantitative genetics data.
BO 365 **Advanced Plant Biotechnology**	CO-1. The learner of the study will be introduced to biotechnology its history.
	CO-2. The learner of the course will be introduced to importance of plant tissue culture and its application, germplasm and cryopreservation strategies.
	CO-3. The students will be made available with information on transgenic plants as bioreactors.
	CO-4. The learners of the course will be taught about non symbiotic nitrogen fixation, biological nitrogen fixation.
	CO-5. The learners will be introduces to methods, types, concepts and applications of genomics and proteomics.
BO 366 **Plant Breeding and Seed Technology**	CO-1. The learner of the course will understand the scope and importance of plant breeding.
	CO-2. The student will be introduced to conventional techniques, methods and practices in breeding.
	CO-3. The learner of the course will be made understand seed processing and seed sampling seed

	production , storage and packaging.
	CO-4. The students will understand purity analysis of seeds, seed testing and seed marketing.
BO 3610 **Nursery and Gardening Management**	CO-1. Nursery management, nursery sites, preparation of sites, design and layout, producing plants from seed.
	CO-2. Learning of plants through vegetative propagation.
	CO-3. Methods of growing plants like polyhouse, greenhouse etc.
BO 3611 **Biofertilizers**	CO-1. Learners will understand the importance of organic farming.
	CO-2. To study the use of biofertilizers in environment sustainability.
	CO-3. To understand the large scale production of biofertilizers.
	CO-4. To understand the method of marketing, popularizing the biofertilizer technology.

Department of Zoology

PROGRAMME: B.SC. (ZOOLOGY)	
PROGRAMME OUTCOMES	PO-1. Aware students about knowledge and skill in the fundamentals and systematics of animal kingdom.
	PO-2. Awareness about environment and its conservation processes, pollution control and its importance.
	PO-3. Acquire basic skills in the observation and study of nature, biological techniques, experimental skills and scientific investigation.
	PO-4. Learn and acquire skills in self-employment avenues such as Apiculture, Poultry, Sericulture, Fish culture, Aquarium fish keeping and Ornamental Fish Farming and Medical Lab. Techniques for income generation and to create self-employment venture
	PO-5. Gain knowledge of Genetics, various anatomical, physiological, and developmental processes at molecular level of animals.
	PO-6. Apply the knowledge of various branches of Zoology and General Biology meant both for a graduate terminal course and for higher studies.

PROGRAMME SPECIFIC OUTCOMES	PSO-1. Students are exposed to understand the basic taxonomy, faunal biodiversity, structural and functional organization of different animals.
	PSO-2. Understand the nature and basic concepts of cell biology, ecology, applied Zoology, Entomology, parasitology, developmental biology, genetics, biochemistry, molecular biology, histology, physiology and medical and forensic Zoology.
	PSO-3. Gained knowledge to carry out procedures as per laboratory standards in the areas of Biochemistry, Physiology, Molecular biology, Medical and Forensic Zoology and Environmental biology.
	PSO-4. Students develop aptitude of research through undertaking small projects.

COURSE OUTCOMES:
F.Y.B.SC. (2019 PATTERN)
SEMISTER-I

COURSE	COURSE OUTCOMES
ZO-111 **Animal Diversity I**	CO-1. The course will help understand the Animal diversity around us.
	CO-2. To understand the underlying principles of classification of animals.
	CO-3. To comprehend the distinctions and similarities between various aspects of classification.
	CO-4. To classify invertebrates and comprehend the various groups of Invertebrates observed in nature.
ZO-112 **Animal Ecology**	CO-1. 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.
	CO-2. To understand anticipate, analyze and evaluate natural resource issues and act on a lifestyle that conserves nature.
	CO-3. The Learner understands and appreciates the diversity of ecosystems and applies beyond the syllabi to understand the local lifestyle and problems of the community.
	CO-4. The learner will be able to link the intricacies of food chains, food webs and link it with human life for its betterment and for non-exploitation of the biotic and abiotic component.
ZO-113 **Zoology Practical Paper** **(Animal Diversity I & Animal Ecology)**	CO-1. Students acquires acknowledge of animal classification
	CO-2. Developed water analyses of water parameters
	CO-3. Find out how to out biodiversity the of given area
	CO-4. Finding density, diversity, richness, etc. of ecosystem
'E' Comp. **(Health Education & Family Planning)**	CO-1. To bring the health conciseness.
	CO-2. To control the population.
	CO-3. To generate awareness of health education.
	CO-4. To highlight importance of family planning in nation building

SEMISTER-II

COURSE	COURSE OUTCOMES
ZO-121 **Animal Diversity II**	CO-1. The course will help understand the Animal diversity around us.
	CO-2. To understand the role of economic important animals from lower phyla like Annelida, Arthropods etc.
	CO-3. Effective illustration of various systems of metazoan animal with Specific example that will help for comparative analysis with other animals.

	CO-4. The student will be able to understand classify and identify the diversity of animals up to Phylum : Echinodermata.
ZO-122 **Cell Biology**	CO-1. The learner will understand the importance of cell as a structural and functional unit of life.
	CO-2. The learner understands and compares between the prokaryotic and eukaryotic system and extrapolates the life to the aspect of development.
	CO-3. The dynamism of bio membranes indicates the dynamism of life. Its working mechanism and precision are responsible for our performance in life.
	CO-4. The cellular mechanisms and its functioning depend on endo-membranes and structures. They are best studied with microscopy.
ZO-123 **Zoology Practical Paper** **(Animal Diversity II & Cell Biology)**	CO-1. Student knows the cell structure and function of cell.
	CO-2. Student identify different types of cell
	CO-3. They know the blood and its indices
	CO-4. After practical work student defined functions cell organelles.
'E' Comp. **(Health Education & Family Planning)**	CO-1. To bring the health conciseness.
	CO-2. To control the population.
	CO-3. To generate awareness of health education.
	CO-4. To highlight importance of family planning in nation building

S.Y.B.SC. (2019 PATTERN)
SEMISTER-III

COURSE	**COURSE OUTCOMES**
ZO-231 **Animal Diversity III**	CO-1. The students will be able to understand, classify and identify the diversity of higher vertebrates.
	CO-2. The students will able to understand the complexity of higher vertebrates
	CO-3. The students will be able to understand different life functions of higher vertebrates
	CO-4. The students will be able to understand the linkage among different groups of higher vertebrates.
ZO-232 **Applied Zoology I**	CO-1. To understand the biology, varieties of silkworms and the basic techniques of silk production and harvesting of cocoons.
	CO-2. To learn the different silkworm species and their host plants.
	CO-3. To study types of agricultural pests and Major insect pests of agricultural
	CO-4. To study Pest control practices.
ZO-233 **Zoology Practical Paper** **(Animal Diversity III & Applied Zoology I)**	CO-1. Gain knowledge to identify various animals based on morphological features.
	CO-2. Observe the various tools, used in Sericulture and Pest control.
	CO-3. Identify the pests in agriculture
	CO-4. The student will be able to describe the

	morphology, habit and habitat. Systematic position and various systems in Scoliodon.
'C' Comp. (Applied Entomology) Theory	CO-1. Students will be able to have in-depth knowledge of basic Concepts in Applied Entomology.
	CO-2. Student will learn about process and get knowledge of Applied Entomology that help in Further education.
	CO-3. Students will become responsible and achieve self-confident
	CO-4. The students will be able to understand the linkage among different orders of Insects
'C' Comp. (Applied Entomology) Practical	CO-1. Appreciate the importance of insect collection and preservation for Entomological study.
	CO-2. Students will able to understand the morphological and anatomical structures of insect.
	CO-3. It will help to understand the various systems of insects.
	CO-4. It will help to understand the life cycle pattern and development of insects.
'D' Comp. (Medical Laboratory Technique) Theory	CO-1. Determination of Hb by haemoglobinometer method
	CO-2. Different Blood test analysis related to blood.
	CO-3. Determination of Hb by haemoglobinometer method.
	CO-4. Slide identification of different Parasite.
'D' Comp. (Medical Laboratory Technique) Practical	CO-1. To understand Hb by haemoglobinometer method.
	CO-2. To identify Different Blood test analysis related to blood.
	CO-3. To understand different blood diseases.
	CO-4. To understanding different methods for blood disease.

SEMISTER-IV

COURSE	**COURSE OUTCOMES**
ZO-241 Animal Diversity IV	CO-1. The students will be able to understand, classify and identify the diversity of Reptiles, Aves and Mammals.
	CO-2. The students will be able to understand different life functions of higher vertebrates –like Reptiles, Aves and Mammals.
	CO-3. The students will able to understand the Basic structure of Mammals.
	CO-4. 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.
ZO-242 Applied Zoology II	CO-1. To understand the basic life cycle of the honeybees, beekeeping tools and equipment's.
	CO-2. To learn for managing beehives for honey production and pollination.
	CO-3. The learner understands the basic

	information about fishery, cultural and harvesting methods of fishes.
	CO-4. To understand fish preservation techniques.
ZO-243 Zoology Practical Paper (Animal Diversity IV & Applied Zoology II)	CO-1. Gain knowledge to distinguish between poisonous and non-poisonous snakes
	CO-2. Observe the various tools, crafts and gears used in Apiary, Fishery
	CO-3. Identify the enemies in Apiary.
	CO-4. Describe External features and economic importance of freshwater and Marine water fishes and other aquaculture organisms
'C' Comp. (Applied Entomology) Theory	CO-1. Learn the taxonomy, biology and control of insect pest. Identify major orders and families of insect
	CO-2. Student will learn about process and get knowledge of Applied Entomology that help in further education.
	CO-3. Student will appreciate the importance of insect
	CO-4. To develop the good qualities of integrity, responsibility and self confidence
'C' Comp. (Applied Entomology) Practical	CO-1. Study of useful economically important insects and their products, this will help to understand the role of insects in economy development.
	CO-2. To improve the knowledge about medically important insectpest, their role in disease transfer so one can design various methods of control medical pest.
	CO-3. Course will help to understand various control measures and thier application methods for agricultural, household and medical pest.
	CO-4. A field visit helps to understand practical knowledge about insect pest management.
'D' Comp. (Medical Laboratory Technique) Theory	CO-1. To understand Hb by haemoglobinometer method
	CO-2. To identify Different Blood test analysis related to blood.
	CO-3. To understand different blood diseases
	CO-4. To understanding different methods for blood disease
'D' Comp. (Medical Laboratory Technique) Practical	CO-1. Determination of Hb by haemoglobinometer method
	CO-2. Different Blood test analysis related to blood.
	CO-3. Determination of Hb by haemoglobinometer method.
	CO-4. Slide identification of different Parasite.

T.Y.B.SC. (2019 PATTERN)
SEMISTER-V

ZO-351 **Pest Management**	CO-1. To understand the concept of pest management with economic, ecological, and sociological benefits of IPM.
	CO-2. It will help to distinguish positive and negative impacts of pesticide use. Understand problems resulting from misuse, overuse, and abuse of chemical pesticides, pesticide resistance and how it develops.
	CO-3. To understand society's role in IPM decisions.
	CO-4. Analyze and compare management strategies to determine the most effective method of reducing pest populations, weeds, and disease presence. Find appropriate, scientifically valid sources of information on specific insect pest, weed, and disease management tactics.
ZO-352 **Histology**	CO-1. The students will be able to understand, classify and identify the different types of tissue.
	CO-2. The students will understand the complexity of various tissues in an organ.
	CO-3. The students will be able to learn structure & functions of various tissues.
	CO-4. The students will understand the various diseases related to organs.
ZO-353 **Biological Chemistry**	CO-1. To comprehend the fundamental ideas and importance of biology
	CO-2. To comprehend the biological and therapeutic importance of the chemical makeup of carbohydrates.
	CO-3. To comprehend the makeup and significance of lipids and proteins
	CO-4. To comprehend the variances in the kinetics and activity of enzymes.
ZO-354 **Genetics**	CO-1. Comprehensive, detailed understanding of the chemical basis of heredity
	CO-2. Understanding of how genetic concepts affect broad societal issues including health and disease, food and natural resources, environmental sustainability, etc.
	CO-3. Understanding the role of genetic mechanisms in evolution.
	CO-4. The knowledge required to design, execute, and analyse the results of genetic experimentation in animal and plant model systems.
ZO-355 **Developmental Biology**	CO-1. Explain the concepts like growth, differentiation, dedifferentiation, induction and regeneration in animal development.
	CO-2. Explain the theories of embryonic development in developmental biology.
	CO-3. Gains knowledge about gametogenesis, fertilization, cleavage, blastulation and gastrulation in animals
	CO-4. Gain the knowledge of chick embryo development

ZO-356 **Parasitology**	CO-1. To understand the basic terminologies in parasitology.
	CO-2. To understand the concepts of animal association with examples
	CO-3. To understand the morphology and life cycle of common parasites (Protista and Platyhelminthes).
	CO-4. To understand the phenomenon of Host-parasite relationship.
ZO-357 **Zoology Practical Paper 1** **(Developmental Biology & Histology)**	CO-1. Practical aspect of embryology of animals (developmental stages of animals- egg, sperm, blastulae and gastrulae)
	CO-2. Skill-based knowledge of chick embryo mounting.
	CO-3. Apply skill-based knowledge of histological techniques
	CO-4. Describe the histological details of different organs in mammals
ZO-357 **Zoology Practical Paper 1** **(Developmental Biology & Histology)**	CO-1. The ability of the pupils to comprehend, analyse, and evaluate the structure of proteins, carbohydrates, and lipids.
	CO-2. The ability to understand changes in enzyme kinetics and activity
	CO-3. The chemical makeup of carbohydrates and their biological and medical relevance will be taught to the pupils.
	CO-4. To research the development of body organs.
ZO-359 **Zoology Practical** **Paper 3 (Pest management and Parasitology)**	CO-1. To explain why identification of the pest is the first step in developing an effective pest control strategy.
	CO-2. To Explain the differences between continuous pests, sporadic pests, and potential pests.
	CO-3. To understand the basic terminologies in parasitology.
	CO-4. To understand the concepts of animal association with examples.
ZO-3510 **Aquarium Management**	CO-1. Students should be familiar with the foundational terms in Aquarium Management
	CO-2. Understanding the ideas behind animal association through examples
	CO-3. To understand the morphology and life cycle of Endemic and Exotic Ornamental Fishes
	CO-4. The students Will have the opportunity to learn about the fundamentals, scope, and importance of aquarium management to the Environment.
ZO- 3511 **Poultry Management**	CO-1. The students will be able to understand the Poultry farming practices and breeding techniques.
	CO-2. The students will be able to understand poultry rearing techniques and feeding requirement and food ingredients.
	CO-3. The students will be able to understand the poultry disease and their pathogens.
	CO-4. The students will be able to understand market value of poultry products.

'C' Comp. (Applied Entomology) Theory	CO-1. After completion of program, students will be able to have in-depth knowledge of basic Concepts in Applied Entomology.
	CO-2. Student will learn about process and get knowledge of Applied Entomology that help Further education.
	CO-3. Students will be able to apply the knowledge of Applied Entomology in real life Situations to solve the problems.
	CO-4. Students use safety practices and regulations inside the Applied Entomology.
'C' Comp. (Applied Entomology) Practical	CO-1. Students use safety practices and regulations inside the Applied Entomology.
	CO-2. Student will learn about process and get knowledge of Applied Entomology that help Further education.
	CO-3. Students will be able to apply the knowledge of Applied Entomology in real life Situations to solve the problems.
	CO-4. Students use safety practices and regulations inside the Applied Entomology.
'C' Comp. (Project)	CO-1. Student know , what is Project, how it completed, etc.
	CO-2. Student acquires acknowledge to collect primary data and secondary data
	CO-3. Student know how to completed data in text
	CO-4. Student knows idea of entire research work in lab. or in nature.

SEMISTER-VI

ZO-361 Medical & Forensic Zoology	CO-1. The students will be able to understand the basics principles of Medical and Forensic Zoology.
	CO-2. The students will able to understand scientific methods in crime detection.
	CO-3. The students will be able to understand the advancements in the field of Medical and Forensic Zoology.
	CO-4. The students will be able to understand modern tools, techniques and skills in forensic investigations.
ZO-362 Animal Physiology	CO-1. The various physiological organ-systems and their importance to the integrative functions of the human body.
	CO-2. Understand Concept of energy requirements
	CO-3. Various aspects of Digestive physiology, circulatory system with medical conditions, respiratory mechanism and gases transport and eliminations of waste materials from the body.
	CO-4. Understand formation of gametes and function of endocrine glands.
ZO-363 Molecular Biology	CO-1. The course is designed to introduce students to the molecular mechanisms that underlie diverse biological activities in cells and organisms.

	CO-2. To comprehend the genetic material's DNA and RNA structures.
	CO-3. To comprehend Molecular Biology's Central Dogma
	CO-4. Acquire knowledge of the idea of gene regulation in order to comprehend DNA Damage and Repair
ZO-364 **Entomology**	CO-1. To understand the scope of Entomology and general characters of Insects.
	CO-2. To study the morphology and anatomy of Insects.
	CO-3. To learn the concept of social organization in Insects.
	CO-4. To understand metamorphosis in Insects.
ZO-365 **Techniques in Biology**	CO-1. To understand the different types of microscopes and their applications.
	CO-2. To study the procedure of micro technique to make permanent histological slides. Steps like – fixation, dehydration, clearing, impregnation, embedding, block making, section cutting, affixation and staining procedure.
	CO-3. Different haematological and immunological techniques and their significance - RBCs, WBCs and Differential count of WBC, Bleeding time & clotting time. ELISA & its types.
	CO-4. Study of Biodiversity sampling equipment's and methods. Instruments in field biology and laboratory techniques for Biodiversity: Binocular, GPS, digital camera, DSLR, mobile camera and various types of microscope adaptors.
ZO-366 **Evolutionary Biology**	CO-1. To provide comprehensive overview of Concept of Evolution.
	CO-2. Most of the fundamental elements of evolutionary biology will be covered in detail for students, allowing them to have a deeper understanding of the subject.
	CO-3. To investigate key aspects of the many theories of evolution, including Lamarckism, Darwinism, and Neo-Darwinism. Explain key procedures, ideas, and concepts in evolutionary biology and assess its hypotheses and empirical research critically.
	CO-4. To provide a thorough explanation of the Hardy-Weinberg Law, genetic drift, and different types of natural selection as they relate to population genetics' main principles.
ZO-367 **Zoology Practical Paper 1** **(Medical & Forensic Zoology & Animal Physiology)**	CO-1. Learn clinical procedures for blood & urine analysis
	CO-2. The student will acquire the skills relating to the physical and chemical techniques of developing finger prints, scale pattern of human hair on crime scene evidence.
	CO-3. Be able to perform, analyse and report on experiments and observations in physiology.
	CO-4. Perform the haematological test like blood cell count, haemoglobin estimation, bleeding/ clotting time, etc.

ZO-368 **Zoology Practical Paper 2** **(Molecular Biology & Techniques in Biology)**	CO-1. The course aims to foster a fundamental grasp of the connections between the structures and functions of proteins and nucleic acids.
	CO-2. The course will equip students with knowledge of the Central Dogma of Molecular Biology.
	CO-3. To understand the Compound and stereo microscopes: parts, applications, and upkeep.
	CO-4. To understand Block preparation, fixation, and collection of tissue.
ZO-369 **Zoology Practical Paper 3** **(Entomology and evolutionary Biology)**	CO-1. Understand basic concepts in Entomology and its scope.
	CO-2. Understand the development process of Insects.
	CO-3. Identify disease causing insect vectors
	CO-4. Will be able to design and implement pest controlling methods against pests.
ZO-3610 **Environmental Impact Assessment**	CO-1. The students will be able to understand the explicate the concept of EIA and objectives and scope of EIA.
	CO-2. The students will be able to understand the illustrate the necessity of public participation in EIA studies.
	CO-3. The students will be able to understand the summarize the importance of Environmental Attributes and phenomena of Impacts on environment.
	CO-4. The students will be able to understand the quantify impacts for various developmental projects.
ZO-3611 **Project**	CO-1. Student know , what is Project, how it's completed, etc.
	CO-2. Student acquires acknowledge to collect primary data and secondary data
	CO-3. Write good research and development projects relevant to the needs of society and environment
	CO-4. Student knows idea of entire research work in lab. Or in nature.

Department of Physics

PROGRAMME: B.SC. (PHYSICS) (GENERAL)	
PROGRAMME OUTCOMES	PO-1. To faster scientific attitude provides in depth knowledge of scientific & technological concept of Physics.
	PO-2. To Familiarize with recent scientific & technological development.
	PO-3. To help students to learn various experimental & computational tools there by developing analytical abilities to address real word problem.

PROGRAMME SPECIFIC OUTCOMES	PSO-1. Students will have acquired necessary skills & expertise to work in industry.
	PSO-2. Students will have acquired necessary skills for working in research.
	PSO-3. Students will have acquired necessaryskills to teach physics in colleges
	PSO-4. To help students build up progressive & successful career in Physics.

COURSE OUTCOMES:

F.Y.B.SC. (2019 PATTERN)
SEMISTER-I

COURSE	COURSE OUTCOMES
PHY-111 Mechanics andProperties of Matter	CO-1. The students will be able to apply Newton's laws of motion.
	CO-2. The students will be able to apply the variational principles to realphysical problem.
	CO-3. At the end of course student will have through knowledge & problem- solving skills related to the mechanics.
PHY-112 Physics Principlesand Application	CO-1. Understanding of basics law of physics.
	CO-2. To understand the atomic excitation & laser principles.
	CO-3. To understands the bonding mechanism in molecules & rotational &vibrational energy level of diatomic molecules.
PHY-113 Physics Laboratorycourse 1A	CO-1. Use various instruments and equipment.
	CO-2. Design experiments to test a hypothesis and/or determine the value of an unknown quantity.
	CO-3. Investigate the theoretical background of an experiment.
	CO-4. Setup experimental equipment to implement an experimentalapproach.
	CO-5. Analyze the data, plot appropriate graphs and reach conclusionsfrom data analysis.

SEMISTER-II

COURSE	COURSE OUTCOMES
PHY-122 **Electromagnetism**	CO-1. Understanding of basics law of electromagnetism.
	CO-2. The students will able to analyze radiation system in which the electric dipole, magnetic dipole or electric quadruple dominate.
	CO-3. Demonstrate an understanding of magnetization of materials.
PHY-121 **Heat and Thermodynamics**	CO-1. Apply the laws of thermodynamic to formulate the relations necessary to analyze a thermodynamics process.
	CO-2. Understand the types of thermometers & their usage.
	CO-3. Describe the properties of & relationships between the properties of apure substance.
PHY-123 **Physics Laboratorycourse 1B**	CO-1. Use various instruments and equipment.
	CO-2. Design experiments to test a hypothesis and/or determine the value of an unknown quantity.
	CO-3. Investigate the theoretical background of an experiment.
	CO-4. Setup experimental equipment to implement an experimentalapproach.
	CO-5. Analyze the data, plot appropriate graphs and reach conclusionsfrom data analysis.

S.Y.B.SC. (2019 PATTERN)
SEMISTER-III

COURSE	COURSE OUTCOMES
PHY-231 **MathematicalMethods in Physics-I**	CO-1. Understand the complex algebra useful in physics courses.
	CO-2. Understand the concept of partial differentiation.
	CO-3. Understand the role of partial differential equations in physics.
	CO-4. Understand vector algebra useful in mathematics and physics.
	CO-5. Understand the concept of singular points of differentialequations
PHY-232 **Electronics**	CO-1. Apply different theorems and laws to electrical circuits.
	CO-2. Understand the relations in electricity.
	CO-3. Understand the parameters, characteristics and working oftransistors.
	CO-4. Understand the functions of operational amplifiers.
	CO-5. Design circuits using transistors and applications of operationalamplifiers
	CO-6. Understand the Boolean algebra and logic circuit
PHY-233 **PracticalCourse**	CO-1. Use various instruments and equipment.
	CO-2. Design experiments to test a hypothesis and/or determine the value of an unknown quantity.

	CO-3. Investigate the theoretical background of an experiment.
	CO-4. Setup experimental equipment to implement an experimentalapproach.
	CO-5. Analyze the data, plot appropriate graphs and reach conclusionsfrom data analysis.
	CO-6. Work in a group to plan, implement and report on aproject/experiment.
	CO-7. Keep a well-maintained and instructive laboratory logbook.

SEMISTER-IV

COURSE	COURSE OUTCOMES
PHY-241 Oscillations,Waves, and Sound	CO-1. To study underlying principles of oscillations and its scope indevelopment.
	CO-2. To understand and solve the equations / graphical representations of motion for simple harmonic, damped, forced oscillators and waves.
	CO-3. To explain oscillations in terms of energy exchange with variouspractical applications.
	CO-4. To solve numerical problems related to undamped, damped, forced oscillations and superposition of oscillations.
	CO-5. To study characteristics of sound, decibel scales and applications.
PHY-242 Optics	CO-1. Acquire the basic concept of wave optics.
	CO-2. Describe how light can constructively and destructively interfere.
	CO-3. Explain why a light beam spread out after passing through anaperture
	CO-4. Summarize the polarization characteristics of electromagneticwave
	CO-5. Understand the operation of many modern optical devices thatutilize wave optics
	CO-6. Understand optical phenomenon such polarization, diffraction and interference in terms of the wave model
	CO-7. Analyze simple example of interference and diffraction.
PHY-243 PracticalCourse	CO-1. Use various instruments and equipment.
	CO-2. Design experiments to test a hypothesis and/or determine the value of an unknown quantity.
	CO-3. Investigate the theoretical background of an experiment.
	CO-4. Setup experimental equipment to implement an experimentalapproach.
	CO-5. Analyze the data, plot appropriate graphs and reach conclusionsfrom data analysis.
	CO-6. Work in a group to plan, implement and report on aproject/experiment.
	CO-7. Keep a well-maintained and instructive laboratory logbook.

Faculty of B.C.A. (Science)

POs, PSOs and COs

CBCS-2019 Pattern

PROGRAMME: B.C.A. (Science)	
Programme Outcomes	PO-1. Ability to adapt analytical and logical thinking in order to solve real world problems and deploy reliable software programs.
	PO-2. Ability to investigate complex problems and provide computer based solutions.
	PO-3. Ability to adapt new technologies for upgrading their skills and contributing to a lifelong learning.
	PO-4. Ability to demonstrate knowledge of Computers and its applications in order to enhance basic understanding of various software technologies.
	PO-5. Ability to become employable in a variety of IT companies and government sectors andalso seek entrepreneurship opportunities for the betterment of an individual and the society at large.
	PO-6. Ability to create and manage multidisciplinary projects and successfully apply softwareand project management principles.

Course Outcomes
F.Y.B.C.A. (Science) (CBCS-2019)

BCA-111 **Fundamentals of Computer**	CO-1. Define working of computers and peripherals, types of software and languages
	CO-2. Troubleshoot the computer systems and use utility software
	CO-3. Choose commands and features of operating systems and application software
	CO-4. Use open source software C
BCA-112 **Problem solving and C programming**	CO-1. Identify and understand the working of key components of a computer system (hardware, software, firmware etc.). Understand the computing environment, how computers work and the strengths and limitations of computers.
	CO-2. Identify and understand and choose the right data representation format based on the requirements of the problems.
	CO-3. Identify and understand the representation of numbers, alphabets and other characters in computer systems.
	CO-4. Understand, analyze and implement software development tools like algorithms, pseudo codes and programming structure.
	CO-5. Approach the programming task using techniques learned and write pseudo code.
	CO-6. Write the program on a computer, edit, compile, debug, correct, recompile and run it.
	CO-7. Study, analyze and understand the logical

	structure of a computer program, and different constructs to develop a program in 'C' language & Write small programs related to simple/ moderate mathematical, and logical problems.
BCA-118 **Business Communication**	CO-1. Guide to communicate effectively
	CO-2. Help to meet domestic and international business requirements.
	CO-3. Communicate via electronic mail, internet and other technologies
	CO-4. Make an effective business presentation.
	CO-5. Able to listen to lectures, public announcements and news on TV and radio.
BCA-118 **Applied Mathematics**	CO-1. Relate and apply techniques for constructing mathematical proofs and make use of appropriate set operations, propositional logic to solve problems
	CO-2. Use function or relation models to interpret associated relationships
	CO-3. Apply basic counting techniques and use principles of probability
	CO-4. Given a data, compute various statistical measures of central tendency
	CO-5. Use appropriate Sampling techniques

S.Y.B.C.A. (Science) (CBCS-2019)

BCA-231 **Data Structure**	CO-1. Understand and restates the fundamentals of basic data structure
	CO-2. Develop skills in implementations and applications of data structure
	CO-3. Apply appropriate algorithm
	CO-4. Design an efficient algorithm for the given algorithm.
	CO-5. Determine time and space complexity.
BCA-232 **Database Management Systems –II**	CO-1. Formulate SQL queries with the help of advanced SQL features
	CO-2. Perform various Database operations like functions, cursors, triggers and exception handling using PL/PostgreSQL
	CO-3. Compare and contrast different concurrency control and recovery techniques.
	CO-4. Apply mechanisms for database security
	CO-5. Analyze various database system architectures.
BCA-233 **Computer Networks**	CO-1. Describe how computer networks are organized with the concept of layered approach.
	CO-2. Familiarize the student with the basic taxonomy and terminology of the computer networking area.
	CO-3. Identify the different types of network topologies and protocols.
	CO-4. Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer
	CO-5. Illustrate applications of Computer Network, Compare and contrast different routing and switching algorithms

BCA-351 **Programming in Java**	CO-1. Identify classes, objects, class members and relationships for a given problem.
	CO-2. Design end to end applications using object oriented constructs.
	CO-3. Apply collection classes for storing java objects.
	CO-4. Use Java APIs for program development.
BCA-352 **Data Mining and Data Science**	CO-1. Identify the key processes of data mining, data warehousing and knowledge discovery.
	CO-2. Design data warehouse with dimensional modeling and apply OLAP operations
	CO-3. Identify appropriate data mining algorithms to solve real world problems.
	CO-4. Compare and evaluate different data mining techniques like classification, prediction, clustering and association rule mining.
	CO-5. Choose an appropriate method to perform exploratory analysis
	CO-6. Interpret results by carrying out data visualization and formal inference procedures
BCA-353 **Principles of Operating Systems**	CO-1. Describe, contrast and compare differing structures for operating systems.
	CO-2. Explain how processes and threads are managed, and evaluate the performance of various scheduling algorithms.
	CO-3. Understand and explain process synchronization process and deadlock handling techniques.
	CO-4. Analyze the relationship between the operating system and the hardware environment in which it runs.
	CO-5. Explain how memory is managed, and evaluate the performance of various page replacement algorithms.
	CO-6. Defining I/O systems, Device Management Policies and Secondary Storage Structure and Evaluation of various Disk Scheduling Algorithms
	CO-7. Use system calls for managing processes, memory and the file system.
BCA-354 **Artificial Intelligence**	CO-1. Apply the suitable algorithms to solve AI Problems.
	CO-2. Identify and apply suitable Intelligent agents for various AI applications.
	CO-3. Build a smart system using different informed search / uninformed search or heuristic approaches.
	CO-4. Represent complex problems with expressive language of representation.
BCA-355 **Cloud Computing**	CO-1. Explain the core issues in cloud computing such as security, privacy, and interoperability.
	CO-2. Choose the appropriate technologies, algorithms, and approaches for the given application.
	CO-3. Compare and contrast various cloud services.