



MARATHA VIDYA PRASARAK SAMAJ'S
KARMAVEER PUNJABABA GOVARDHANE ARTS, COMMERCE AND SCIENCE
COLLEGE, IGATPURI
TAL. IGATPURI, DIST. NASHIK – 422403
Affiliated to Savitribai Phule Pune University, Pune

Program Outcomes, Program Specific Outcomes, Course specific Outcomes

1) FACULTY OF ARTS

1	DEPARTMENT OF MARATHI
2	DEPARTMENT OF HINDI
3	DEPARTMENT OF ENGLISH
4	DEPARTMENT OF ECONOMICS
5	DEPARTMENT OF POLLITICAL SCIENCE
6	DEPARTMENT OF GEOGRAPHY

2) FACULTY OF COMMERECE

3) FACULTY OF SCIENCE

1	DEPARTMENT OF CHEMISTRY
2	DEPARTMENT OF BOTANY
3	DEPARTMENT OF PHYSICS
4	DEPARTMENT OF ZOOLOGY
5	DEPARTMENT OF MATHS
6	DEPARTMENT OF COMPUTER SCIENCE

DEPARTMENT OF MARATHI

Sr. No.	Class	Sem	Subject with Code	Course Outcomes
1.	FYBA	I	समकालीन मराठी कथा आणि भाषिक कौशल्य विकास 11021A – G1	<ul style="list-style-type: none"> साहित्य व समाज जीवनाची ओळख करून देणे. समकालीन मराठी कथांचा अभ्यास करणे. व्यक्तिमत्त्व विकासात भाषेचे स्थान स्पष्ट करणे. जागतिकीकरणात विविध क्षेत्रांना सामोरे जाण्यासाठी भाषिक क्षमता विकसित करणे.
2.	FYBA	II	मराठी साहित्य : एकांकिका 11022A – G1	<ul style="list-style-type: none"> एकांकिका या साहित्य प्रकाराची ओळख करून देणे. एकांकिका या साहित्य प्रकाराचे स्वरूप, घटक आणि प्रकार यांची ओळख करून देणे. मराठी साहित्यातील निवडक एकांकिका विडुल तो आला आला व हंडाभर चांदण्या या एकांकिकाचे अध्ययन करणे. विडुल तो आला व हंडाभर चांदण्या या एकांकिकाचे समकालीन महत्त्व तपासून भाषिक कौशल्यांचा विकास करणे.
3.	SYBA	III	भाषिक कौशल्य विकास आणि आधुनिक मराठी साहित्यप्रकार : कांदबरी 23023 – G2	<ul style="list-style-type: none"> कांदबरी या साहित्य प्रकाराचे स्वरूप, घटक, प्रकार आणि वाटचाल यांची ओळख करून देणे. नेमेलेल्या कांदबरीचा आस्वाद घेऊन आकलन करणे. नवतंत्रज्ञानाचा अभ्यास करणे. प्रभाकर पेंढारकर लिखित 'रारंगढांग' या कांदबरीचे विश्लेषण, मूल्यमापन करणे.
4.	SYBA	III	आधुनिक मराठी साहित्य: प्रकाशवाटा 23021 – S1	<ul style="list-style-type: none"> मराठीतील आत्मचरित्र या संकल्पनेची ओळख करून देणे. साहित्यकृतीचे आस्वाद व आकलन करण्याची दृष्टी निर्माण ललितगद्य मराठी भाषिक संज्ञापन कौशल्यांचे व्यवहारिक जीवनात उपयोजन करणे.
5.	SYBA	III	साहित्यविचार 23022 – S2	<ul style="list-style-type: none"> भारतीय आणि पाश्चात्य साहित्याच्या आधारे साहित्याची संकल्पना, स्वरूप आणि प्रयोजन विचार समजून देणे. साहित्याची निर्मिती प्रक्रिया समजावून देणे. साहित्याची निर्मिती प्रक्रिया समजावून देणे. साहित्याची भाषा आणि शैली विषयक विचार समजावून देणे. साहित्य व समाज यांचा सहसंबंध तपासणे.

6.	SYBA	III	प्रकाशन व्यवहार आणि संपादन 23025 SEC	● प्रकाशन व्यवहार आणि संपादन यांची ओळख करून देणे.
				● ग्रंथनिर्मितीप्रक्रिया समजावून देणे.
				● संहिता संपादन समजावून देणे.
				● प्रकाशन संस्था व जाहिरात यांचे व्यवहारिक जीवनातील उपयोजन स्पष्ट करणे.
7.	SYBA	III	मराठी भाषिक संज्ञापन कौशल्ये 23011 MIL	● भाषा व व्यक्तिमत्त्व विकास यांची ओळख करून देणे.
				● प्रसारमाध्यमांसाठी आवश्यक संज्ञापन कौशल्ये समजून देणे.
				● मुद्रित शोधनाची संकल्पना समजून सांगणे.
				● मराठी भाषिक संज्ञापन कौशल्यांचे व्यवहारिक जीवनात उपयोजन करणे.
8.	SYBA	IV	भाषिक कौशल्य विकास आणि आधुनिक मराठी साहित्य प्रकार ललित गद्य 24023 – G2	● ललित गद्य गद्य, या साहित्य प्रकाराचे स्वरूप घटक प्रकार आणि वाटचाल समजून देणे.
				● नेमलेल्या अभ्यासपुस्तकातील ललितगद्याचे आस्वाद आणि आकलन करणे.
				● गुगल साधनांचा अध्ययन व व्यावहारिक जीवनात प्रभावीपणे वापर करणे.
				● साहित्यरंग या पुस्तकाचे विश्लेषण आणि मूल्यमापन करणे.
9.	SYBA	IV	मध्ययुगीन मराठी साहित्य: निवडक मध्ययुगीन गद्य, पद्य 24021 – S1	● मध्ययुगीन गद्य-पद्य साहित्यप्रकारांची ओळख करून देणे.
				● नेमलेल्या अभ्यासपुस्तकातील मध्ययुगीन गद्य पद्य साहित्याचा आस्वाद आणि आकलन करणे.
				● मध्ययुगीन कालखंडातील प्रेरणा व प्रवृत्तींचा अभ्यास करणे.
				● मध्ययुगीन कालखंडातील साहित्याचे व भाषेचे विश्लेषण करणे.
10.	SYBA	IV	साहित्य समीक्षा 24024 – S2	● साहित्य समीक्षेची संकल्पना, स्वरूप यांचा परिचय करून देणे.
				● साहित्य आणि समीक्षा यांचे परस्पर संबंध समजावून देणे.
				● साहित्य प्रकारानुसार समीक्षेचे स्वरूप समजावून देणे.
				● विविध समीक्षा पद्धतीच्या आधारे विद्यार्थी मध्ये समीक्षात्मक दृष्टिकोन निर्माण करणे.
11.	SYBA	IV	उपयोजित लेखन	● जाहिरात, मुलाखतलेखन आणि संपादन यांचा अभ्यास करणे.

			कौशल्ये 24025 – SEC	<ul style="list-style-type: none"> ● दृकश्राव्य माध्यमासाठी मुलाखत कौशल्याची ओळख करून देणे. ● माहितीपर नोंदींची ओळख करून देणे. ● जाहिरात, मुलाखत लेखन आणि संपादन या उपयोजित कौशल्याचे दैनंदिन व्यवहारात उपयोजन करणे.
12.	SYBA	IV	नवसमाजमाध्यमे आणि समाज माध्यमांसाठी मराठी 24011 – MIL	<ul style="list-style-type: none"> ● भाषा व जीवन व्यवहार यांचा सहसंबंध समजून देणे. ● नवसमाजमाध्यमांविषयी जागरूकता निर्माण करणे. ● व्यावसायिक पत्रव्यवहाराची ओळख करून देणे. ● समाजमाध्यमांचे महत्त्व आणि परिणामाचे विश्लेषण करणे
13.	TYBA	V	भाषिक कौशल्य विकास आणि आधुनिक मराठी साहित्यप्रकार : प्रवासवर्णन 35023 – G3	<ul style="list-style-type: none"> ● मुद्रितमाध्यमांसाठी लेखन कौशल्यआत्मसात करणे. ● प्रवासवर्णन या साहित्यप्रकाराचे स्वरूप, प्रेरणा, प्रयोजन आणि वैशिष्ट्ये समजून देणे. ● तीन मुलांचे चार दिवस या पुस्तकाचे आधुनिक काळातील ● ^{महत्त्व} तीन मुलांचे चार दिवस या प्रवासवर्णनाचे आकलन, आस्वाद, आकलन आणि विश्लेषण करणे.
14.	TYBA	V	मराठी वाङ्मयाचा स्थूल इतिहास प्रारंभ ते इ.स. १६०० 35021 – S3	<ul style="list-style-type: none"> ● साहित्य इतिहासाची संकल्पना, स्वरूप, प्रेरणा, प्रवृत्ती समजावून सांगणे. ● मध्ययुगीन कालखंडाची सामाजिक, सांस्कृतिक पार्श्वभूमी समजून देणे. ● मराठी भाषा साहित्याची कालखंडानुसार विभागणी करणे व इतिहास समजून देणे. ● मध्ययुगीन कालखंडातील विविध साहित्यप्रकारांचा अभ्यास व विश्लेषण करणे.
15.	TYBA	V	वर्णनात्मक भाषाविज्ञान 35022 – S4	<ul style="list-style-type: none"> ● मराठी साहित्य, कौशल्य विकास आणि शासन व्यवहार यांची ओळख करून देणे. ● राज्यघटनेतील भाषा विषयक तरतुदीचा परिचय करून देणे. ● रूप कवितेचे या नेमलेल्या अभ्यास पुस्तकातील निवडक कवितांचे आस्वाद, आकलन आणि मूल्यमापन करणे.

				<ul style="list-style-type: none"> ● मराठी कवितेच्या प्रेरणा, प्रवृत्ती, स्वरूप व वाटचाल समजून देणे.
16.	TYBA	V	कार्यक्रम संयोजनातील भाषिक कौशल्ये 35025 – SEC	<ul style="list-style-type: none"> ● कार्यक्रमाचे स्वरूप व प्रकार समजून सांगणे. ● कार्यक्रमसंयोजनातील भाषिक कौशल्ये अवगत करणे. ● कार्यक्रम नियोजन, सूत्रसंचालन यांची कौशल्ये प्राप्त करणे. ● आयोजक, प्रायोजक, जाहिरातदार, निवेदक यांचे कार्य व महत्त्व समजून सांगणे.
17.	TYBA	VI	मराठी भाषिक कौशल्य विकास आणि आधुनिक मराठी साहित्यप्रकार : कविता 36023 – G3	<ul style="list-style-type: none"> ● मराठी साहित्य, कौशल्य विकास आणि शासन व्यवहारांची ओळख करून देणे. ● राज्यघटनेतील भाषा विषयक तरतुदीचा परिचय करून देणे. ● रूप कवितेचे या नेमलेल्या अभ्यास पुस्तकातील निवडक कवितांचे आस्वाद, आकलन आणि मूल्यमापन करणे. ● मराठी कवितेच्या प्रेरणा, प्रवृत्ती, स्वरूप व वाटचाल समजून देणे.
18.	TYBA	VI	मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास इ.स. १६०१ ते १८१७ 36021 – S3	<ul style="list-style-type: none"> ● शिवकाल आणि पेशवेकालातील वाङ्मयीन प्रेरणा, प्रवृत्ती, स्वरूप समजून देणे. ● संत तुकाराम, रामदास, अनंत फंदी, मोरोपंत, रामजोशी, प्रभाकर इ. संत, पंडित व शाहिर कवींचे मराठी साहित्यातील योगदान अभ्यासणे. ● बखर वाङ्मय प्रेरणा, प्रवृत्ती, स्वरूप समजून देणे. ● सभासद बखर, शिवछत्रपतीचे सप्त प्रकरणात्मक चरित्र, भाऊसाहेबांची बखर पानिपत बखर आज्ञापत्र अभ्यासणे व विश्लेषण करणे.
19.	TYBA	VI	वर्णनात्मक भाषाविज्ञान 36022 – S4	<ul style="list-style-type: none"> ● रूपविन्यास आणि मराठीची रूप व्यवस्था समजावून घेणे. ● वाक्यविन्यास आणि मराठी भाषे संदर्भात वाक्यव्यवस्थेचा परिचय करून देणे. ● अर्थविन्यास या संकल्पनेचा भाषाविज्ञानाच्या अंगाने परिचय करून देणे. ● क्षेत्रभेट व संशोधन प्रकल्प यांचे महत्त्व सांगून प्रत्यक्ष क्षेत्र भेट.
20.	TYBA	VI	कार्यक्रम संयोजनातील	<ul style="list-style-type: none"> ● विषयाशी अनिवार्य कार्यक्रम संयोजनातील लेखन कौशल्ये समजावून सांगणे.

			भाषिक कौशल्ये 36025 – SEC	<ul style="list-style-type: none"> ● आभासी कार्यक्रम संयोजनाचा परिचय करून देणे. ● निमंत्रणपत्रिका, मानपत्र लेखन, अहवाल लेखन इ. कौशल्ये समजावून सांगणे. ● कविसमेलन, मराठी भाषादिन. पुस्तकप्र दर्शन इ. कार्यक्रमांचे यशस्वी संयोजन करणे.
21.	FY BCom	I	भाषा, साहित्य आणि कौशल्य विकास : उत्कर्षवाटा – 117	<ul style="list-style-type: none"> ● विविध क्षेत्रातील कर्तृत्ववान व्यक्तींच्या विचारांची वकार्याची ओळख करून देणे. ● मराठी साहित्यातील भिन्नभिन्न प्रवाह आणि प्रकार ओळख करून समजावून देणे. ● साहित्याभ्यासातून जीवनविषयक समज विकसित करणे. ● वाणिज्य शाखा व मराठी साहित्यातील परस्परसंबंधाचे मूल्यमापन करणे.
22.	FY BCom	II	भाषा आणि कौशल्यविकास – 127	<ul style="list-style-type: none"> ● भाषिक कौशल्ये विकास करणे. ● विद्यार्थ्यांना पारिभाषिक संज्ञांचा परिचय करून देणे. ● व्यक्तिमत्त्व विकासात मराठी भाषेचे स्थान स्पष्ट करणे. ● जागतिकीकरणात विविध क्षेत्रांना सामोरे जाण्यासाठी भाषिक क्षमता विकसित करणे.
23.	SY BSc.	III	उपयोजित मराठी – 83111	<ul style="list-style-type: none"> ● मराठी भाषा आणि जीवन व्यवहार यांची ओळख करून देणे. ● प्रसारमाध्यमातील विविध लेखनप्रकारांचा अभ्यास वा प्रत्यक्षलेखन अभिरुचीचा विकास करणे. ● नवसमाजमाध्यमे व प्रशासकीय लेखन यामधील विविध संधीची माहिती देणे. ● जागतिकीकरणात विविध क्षेत्रांना सामोरे जाण्यासाठी भाषिक क्षमता विकसित करणे.
24.	SY BSc.	IV	मराठी कथा दर्शन – 83112	<ul style="list-style-type: none"> ● साहित्य विषयक अभिरुची विकसित करणे. ● साहित्य विषयक अभ्यासातून जीवनविषयक समज विकसित करणे. ● विज्ञान साहित्य विषयक आकलन क्षमता वाढवणे. ● निवडक विज्ञान कथांचा आस्वाद घेऊन त्यांचे विश्लेषण करण्याची क्षमता विकसित करणे.

25.	MA I 2023 Patt.	I	अर्वाचीन मराठी वाङ्मयाचा इतिहास (इ.स. १८१८ ते १९२०) – MAR 501 MJ	● वाङ्मयेतिहासाच्या स्वरूपाचा विद्यार्थ्यांना परिचय होईल.
				● अव्वल इंग्रजी कालखंडातील साहित्याच्या प्रेरणा, प्रवृत्ती, स्वरूप यांचे विवेचन करता येईल.
				● इ.स. १८१८ ते १९२० या कालखंडातील साहित्याचे स्वरूप विशद करता येईल.
				● इ.स. १८१८ ते १९२० या कालखंडातील साहित्याच्या प्रेरणा, प्रवृत्ती यांचे विश्लेषण करता येईल.
				● इ.स. १८१८ ते १९२० या कालखंडातील साहित्याची कारण मीमांसा करता येईल.
				● इ.स. १८१८ ते १९२० या कालखंडातील साहित्या निर्मितीच्या प्रेरणा, प्रवृत्ती लक्षात येऊन विद्यार्थ्यांना साहित्यनिर्मिती आणि विश्लेषण करता येईल.
26.	MA I 2023 Patt.	I	ऐतिहासिक भाषाविज्ञान – MAR 502 MJ	● ऐतिहासिक भाषाविज्ञानाचे स्वरूप व संकल्पना स्पष्ट करता येईल.
				● ऐतिहासिक भाषाविज्ञानाचे सिद्धांत महत्त्व आणि मर्यादा विशद करता येतील.
				● ऐतिहासिक भाषा विज्ञानाच्या ज्ञानातून स्थानिक भाषांचा अभ्यास करता येईल. सिद्धांत महत्त्व आणि मर्यादा विशद करता येतील.
				● जागतिक व भारतीय भाषांचे अध्ययनाच्या दृष्टीकोनातून वर्गीकरण करता येईल.
				● जागतिक व भारतीय भाषांचा तौलनिक अभ्यास करता येईल.
				● विविध भारतीय भाषा आणि बोली भाषांवर आधारित प्रकल्प तयार करता येतील.
27.	MA I 2023 Patt.	I	प्रशासनिक लेखन कौशल्ये – MAR 503 MJ	● कार्यालयीन लेखन पद्धतीची कौशल्य विकसित होतील.
				● दैनंदिन जीवन आणि रोजगार यासाठी सदर कौशल्याचे उपयोजन करता येईल.
				● विद्यार्थ्यांमध्ये भाषिक कौशल्ये विकसित होतील.
				● विद्यार्थ्यांना कार्यालयीन लेखन पद्धतीच्या कौशल्याची ओळख होईल.

				<ul style="list-style-type: none"> ● विद्यार्थ्यांना प्रमाण भाषा आणि कार्यालयीन भाषेचे स्वरूप अवगत झाल्याने रोजगाराच्या संधी उपलब्ध होतील. ● कार्यालयीन लेखन पद्धतीची कौशल्य विकसित होतील.
28.	MA I 2023 Patt.	I	प्रशासनिक लेखन कौशल्ये – MAR 503 MJP	<ul style="list-style-type: none"> ● कार्यालयीन लेखनासंदर्भातील ज्ञान विकसित होईल. ● कार्यालयीन लेखन पद्धतीची कौशल्य विकसित होतील. ● दैनंदिन जीवन आणि रोजगार या साठी सदर कौशल्याचे उपयोजन करता येईल. ● विद्यार्थ्यांनामध्ये भाषिक कौशल्ये विकसित होतील. ● विद्यार्थ्यांना कार्यालयीन लेखन पद्धतीच्या कौशल्याची ओळख होईल. ● विद्यार्थ्यांना प्रमाणभाषा आणि कार्यालयीन भाषेचे स्वरूप अवगत झाल्याने रोजगाराच्या संधी उपलब्ध होतील.
29.	MA I 2023 Patt.	I	प्रकाशन व्यवहार आणि ग्रंथ प्रक्रिया – MAR 504 MJP	<ul style="list-style-type: none"> ● प्रकाशन व्यवहारआणि ग्रंथ प्रक्रिया यांचे स्वरूप सांगता येईल. ● प्रकाशन व्यवहारा साठी आवश्यक कौशल्ये प्राप्त होतील. ● ग्रंथनिर्मिती, ग्रंथाचे सम्पादन आणि प्रकाशन करता येईल. ● प्रकाशन व्यवहार आणि ग्रंथनिर्मिती प्रक्रिया यासाठी आवश्यक कौशल्ये अंगीकरता येतील. ● प्रकाशन व्यवहा आणि ग्रंथनिर्मिती प्रक्रिया संबंधीत कौशल्यांचा परिस्थितीनुरूप वापर करता येईल. ● ग्रंथनिर्मिती प्रक्रियेमध्ये नाविन्यपूर्णता आणता येईल.
30.	MA I 2023 Patt.	I	साहित्यप्रवाहांचा अभ्यास : दलित साहित्य आणि ग्रामीण साहित्य – MAR 510 MJ	<ul style="list-style-type: none"> ● साठोत्तरी वाड्मयीन प्रवाहाविषयीज्ञानप्राप्तहोईल. ● साठोत्तरी वाड्मयीन प्रवाहांचा उगम आणि विकास स्पष्ट होईल. ● साठोत्तरी आणि त्यापूर्वीच्या साहित्याच्या तौलनिक अभ्यासाची क्षमता विकसित होईल. ● साहित्यकृतींचे साठोत्तरी वाड्मयीन प्रवाहामध्ये वर्गीकरण क्षमता विकसित होईल. ● साहित्यकृतींचे साठोत्तरी वाड्मयीन प्रवाहामध्ये मूल्यमापन करण्याची क्षमता विकसित होईल.

				<ul style="list-style-type: none"> याप्रवाहामध्ये लेखनकरण्याचे कौशल्ये व त्याअनुषंगाने रोजगाराच्या संधी उपलब्ध होण्याच्या दृष्टीने क्षमता विकसित होईल.
31.	MA I 2023 Patt.	I	साहित्य प्रवाहांचा अभ्यास: दलित साहित्य आणि ग्रामीण साहित्य MAR 510 MJ P	<ul style="list-style-type: none"> साठोत्तरी वाङ्मयीन प्रवाहा विषयी ज्ञान प्राप्त होईल. साठोत्तरी वाङ्मयीन प्रवाहांचा उगम आणि विकास स्पष्ट होईल. साठोत्तरी आणि त्यापूर्वीच्या साहित्याच्या तौलनिक अभ्यासाची क्षमता विकसित होईल. साहित्यकृतींचे साठोत्तरी वाङ्मयीन प्रवाहामध्ये वर्गीकरण क्षमता विकसित होईल. साहित्यकृतींचे साठोत्तरी वाङ्मयीन प्रवाहामध्ये मूल्यमापन करण्याची क्षमता विकसित होईल. याप्रवाहामध्ये लेखन करण्याचे कौशल्ये व त्याअनुषंगाने रोजगाराच्या संधी उपलब्ध होण्याच्या दृष्टीने क्षमता विकसित होईल.
32.	MA I 2023 Patt.	I	संशोधन पद्धती – MAR 541 MN	<ul style="list-style-type: none"> संशोधनाचे स्वरूप कळण्यास मदत होईल. संशोधनाच्या विविध पद्धती समजतील. प्रत्यक्ष संशोधन करताना वरील अभ्यासाचा आधार घेता येईल. संशोधनाच्या विविध अभ्यास क्षेत्रांची माहिती होईल. संशोधनाचा आराखडा तयार करता येईल. संशोधनास पूरक पुरावे गोळा करता येतील. संशोधनदृष्टी विकसित होईल तसेच चिकित्सक दृष्टी विकसित होईल.
33.	MA I 2023 Patt.	II	अर्वाचीन मराठी वाङ्मयाचा इतिहास (इ.स. 1920 ते 2010) – MAR 551 MJ	<ul style="list-style-type: none"> इ.स. १९२० ते २०१० या कालखंडातील वाङ्मयेतिहासाच्या स्वरूपाचा विद्यार्थ्यांना परिचय होईल. अव्वल इंग्रजी कालखंडातील साहित्याच्या प्रेरणा, प्रवृत्ती, स्वरूपांचे विवेचन करता येईल. इ.स. १९२० ते २०१० या कालखंडातील साहित्याचे स्वरूप विशद करता येईल.

				<ul style="list-style-type: none"> ● इ.स. १९२० ते २०१० या कालखंडातील साहित्याच्या प्रेरणा प्रवृत्ती यांचे विश्लेषण करता येईल. ● इ.स. १९२० ते २०१० या कालखंडातील साहित्याची कारणमीमांसा करता येईल. ● इ.स. १९२० ते २०१० या कालखंडातील साहित्यानिर्मितीच्या प्रेरणा, प्रवृत्ती लक्षात येऊन विद्यार्थ्यांना साहित्य निर्मिती आणि विश्लेषण करता येईल.
34.	MA I 2023 Patt.	II	समाजभाषाविज्ञान – MAR 552 MJ	<ul style="list-style-type: none"> ● समाजभाषा विज्ञानाचे स्वरूप व संकल्पना स्पष्ट करता येईल. ● समाजभाषा विज्ञानाची व्याप्ती, स्वरूप, सिद्धांत, महत्त्व व मर्यादा विशद करता येतील. ● समाजभाषा विज्ञानाच्या ज्ञानातून स्थानिक भाषांचा अभ्यास करता येईल. ● भारतीय भाषांचे समाजभाषाविज्ञानाच्या अध्ययनाच्या दृष्टीकोनातून वर्गीकरण करता येईल. ● स्त्रिया, पुरुष, मुले, युवक व वृद्धांच्या भाषेचे मूल्यमापन करता येईल. ● विविध भारतीय भाषा व बोली भाषावर आधारित प्रकल्प तयार करता येतील.
35.	MA I 2023 Patt.	II	प्रसारमाध्यमांसाठी लेखनकौशल्ये – MAR 553 MJ	<ul style="list-style-type: none"> ● प्रसारमाध्यमांसाठी लेखन कौशल्याचा परिचय होईल. ● मराठीचे प्रसारमाध्यमांसाठी लेखन या क्षेत्रातील उपयोजन ज्ञात होईल. ● विविध माध्यमांसाठी उपयुक्त लेखन तंत्र अवगत होईल. त्याचे उपयोजन करता येईल. ● विविध माध्यमांतील आकृतिबंधाचे स्वरूप अवगत होईल. ● विद्यार्थ्यांना प्रसारमाध्यमांसाठी लेखनया क्षेत्राचा परिचय होईल. ● विद्यार्थी प्रसारमाध्यमांसाठी लेखनकौशल्ये आत्मसात करतील.
36.	MA I 2023 Patt.	II	प्रसारमाध्यमांसाठी लेखन कौशल्ये – MAR 553 MJP	<ul style="list-style-type: none"> ● प्रसारमाध्यमांसाठी लेखनकौशल्यांचा परिचय होईल. ● मराठीचे प्रसारमाध्यमांसाठी लेखन या क्षेत्रातील उपयोजन ज्ञात होईल.

				<ul style="list-style-type: none"> ● विविध माध्यमांसाठी उपयुक्त लेखनतंत्र अवगत होईल. त्याचे उपयोजन करता येईल. ● विविध माध्यमांतील आकृतिबंधाचे स्वरूप अवगत होईल. ● विद्यार्थ्यांना प्रसारमाध्यमांसाठी लेखन या क्षेत्राचा परिचय होईल. ● विद्यार्थी प्रसारमाध्यमांसाठी लेखनकौशल्ये आत्मसात करतील.
37.	MA I 2023 Patt.	II	नियतकालिकांचे स्वरूप आणि संपादन – MAR 554 MJP	<ul style="list-style-type: none"> ● नियतकालिकांचे स्वरूप आणि संपादन यांची माहिती होईल ● नियतकालिकांच्या संपादनासाठी आवश्यक असलेली कौशल्ये प्राप्त होईल. ● नियतकालिकांचे संपादन करता येईल. ● नियतकालिकांच्या संपादनासाठी आवश्यक असलेली कौशल्ये अंगीकारता येतील. ● नियतकालिकांच्या संपादन प्रक्रियेत आवश्यक कौशल्याचा परिस्थितीनुरूप वापर करता येईल. ● नियतकालिकांच्या संपादन प्रक्रियेत नाविन्यपूर्णता आणता येईल.
38.	MA I 2023 Patt.	II	साहित्य प्रवाहांचा अभ्यास: आदिवासी साहित्य आणि स्त्रीवादी साहित्य – MAR 560 MJ	<ul style="list-style-type: none"> ● साठोत्तरी वाड्मयीन प्रवाहाविषयी ज्ञान प्राप्त होईल. ● साठोत्तरी वाड्मयीन प्रवाहांचा उगम आणि विकास स्पष्ट होईल. ● साठोत्तरी आणि त्यापूर्वीच्या साहित्याच्या तौलनिक अभ्यासाची क्षमता विकसित होईल. ● साहित्यकृतींचे साठोत्तरी वाड्मयीन प्रवाहामध्ये वर्गीकरण क्षमता विकसित होईल. ● साहित्यकृतींचे साठोत्तरी वाड्मयीन प्रवाहामध्ये मूल्यमापन करण्याची क्षमता विकसित होईल. ● या प्रवाहामध्ये लेखन करण्याचे कौशल्ये व त्या अनुषंगाने रोजगाराच्या संधी उपलब्ध होण्याच्या दृष्टीने क्षमता विकसित होईल.
39.	MA I 2023 Patt.	II	साहित्य प्रवाहांचा अभ्यास: आदिवासी साहित्य	<ul style="list-style-type: none"> ● साठोत्तरी वाड्मयीन प्रवाहाविषयी ज्ञान प्राप्त होईल. ● साठोत्तरी वाड्मयीन प्रवाहांचा उगम आणि विकास स्पष्ट

			आणि स्त्रीवादी साहित्य – MAR 560 MJP	<ul style="list-style-type: none"> ● साठोत्तरी आणि त्यापूर्वीच्या साहित्याच्या तौलनिक अभ्यासाची क्षमता विकसित होईल. ● साहित्यकृतींचे साठोत्तरी वाङ्मयीन प्रवाहामध्ये वर्गीकरणक्षमता विकसित होईल. ● साहित्यकृतींचे साठोत्तरी वाङ्मयीन प्रवाहामध्ये मूल्यमापन करण्याची क्षमता विकसित होईल. ● याप्रवाहामध्ये लेखन करण्याचे कौशल्ये व त्या अनुषंगाने रोजगाराच्या संधी उपलब्ध होण्याच्या दृष्टीने क्षमता विकसित होईल.
40.	MA I 2023 Patt.	II	व्यावसायिक प्रशिक्षण – MAR 560 MJ	<ul style="list-style-type: none"> ● प्रकाशन संस्थेची कार्य प्रक्रिया माहिती होईल. ● छपाईतंत्र प्रक्रिया माहिती होईल. ● बांधणी तंत्राची माहिती होईल. ● साहित्य संस्थांचे कार्य प्रत्यक्ष अनुभवता येईल. ● विविध प्रसारमाध्यामामध्ये रोजगार क्षमता विकसित होईल. ● ग्रंथ विक्रीची माहिती व त्याअनुषंगाने रोजगार क्षमता विकसित होईल.
41.	MA I 2023 Patt.	II	व्यावसायिक प्रशिक्षण / क्षेत्रभेट – MAR 560 MJP – OJT	<ul style="list-style-type: none"> ● प्रकाशन संस्थेची कार्य प्रक्रिया माहिती होईल. ● छपाई तंत्र प्रक्रिया माहिती होईल. ● साठोत्तरी आणि त्यापूर्वीच्या साहित्याच्या तौलनिक अभ्यासाची क्षमता विकसित होईल. ● साहित्यकृतींचे साठोत्तरी वाङ्मयीन प्रवाहामध्ये वर्गीकरण क्षमता विकसित होईल. ● साहित्यकृतींचे साठोत्तरी वाङ्मयीन प्रवाहामध्ये मूल्यमापन करण्याची क्षमता विकसित होईल. ● याप्रवाहामध्ये लेखन करण्याचे कौशल्ये व त्याअनुषंगाने रोजगाराच्या संधी उपलब्ध होण्याच्या दृष्टीने क्षमता विकसित होईल.
42.	MA II 2019 Patt.	III	प्रसारमाध्यमांसाठी लेखन कौशल्ये भाग - १ – 30491	<ul style="list-style-type: none"> ● प्रसारमाध्यमासाठी आवश्यक लेखन कौशल्याची ओळख करून देणे. ● प्रसारमाध्यमांचे समाजातील महत्त्व विशद करणे.

				<ul style="list-style-type: none"> ● प्रसारमाध्यमांच्या स्वरूपाचे ज्ञान करून देणे. ● दृक्श्राव्य नवमाध्यमासाठी लेखन करण्याची क्षमता विकसित करणे.
43.	MA II 2019 Patt.	III	साहित्य समीक्षा – 30492	<ul style="list-style-type: none"> ● साहित्य समीक्षा व्यवहाराची समज वाढीस लावणे. ● समीक्षेची सकल्पना समजावून देणे. ● विविध समीक्षा पद्धती मागील विचारव्यूह, दृष्टी समजावून देणे. ● समीक्षा करण्याची दृष्टी व क्षमता विकसित करणे.
44.	MA II 2019 Patt.	III	नेमलेल्या अर्वाचीन साहित्यकृतीचा अभ्यास भाग – १ – 30493	<ul style="list-style-type: none"> ● अर्वाचीन कालखंडातील साहित्यप्रकार, संकल्पना व स्वरूप यांचा आढावा घेणे. ● नेमलेल्या अर्वाची नसाहित्यकृतीची वैशिष्ट्ये जाणून घेणे. ● कालखंड आणि साहित्यकृतीच्या निर्मितीतील अनुबंध शोधणे. ● नेमलेल्या अर्वाची नसाहित्यकृतीतील वाडमयीन मूल्ये आणि जीवनमूल्ये यांचे विश्लेषण करणे.
45.	MA II 2019 Patt.	III	लोकसाहित्याची मूलतत्त्वे आणि मराठी लोकसाहित्य – 30494	<ul style="list-style-type: none"> ● लोकसाहित्याचे स्वरूप समजावून देणे. ● लोकसाहित्याची व्यापकता व सर्वसमावेशकता लक्षात आणून देणे. ● लोकसाहित्यामधील लोकजीवन समजावून सांगणे. ● लोकसाहित्य व ग्रांथिक साहित्य सहसंबंध तपासणे.
46.	MA II 2019 Patt.	IV	प्रसार माध्यमांसाठी लेखनकौशल्ये : भाग २ – 40491	<ul style="list-style-type: none"> ● माहितीपटासाठी लेखनकौशल्यांची ओळख करून देणे. ● चित्रपट माध्यमासाठी आवश्यक कौशल्ये विकसित करणे. ● लिखित स्वरूपातील नवमध्यामासाठी लेखनकौशल्ये विकसित करणे. ● दृक्श्राव्य स्वरूपाच्या नवसमाजमाध्यमासाठी लेखनकौशल्ये विकसित करणे.
47.	MA II 2019 Patt.	IV	साहित्य संशोधन – 40492	<ul style="list-style-type: none"> ● संशोधनाची संकल्पना, प्रयोजने आणि विविध संशोधन पद्धतीचा मागोवा घेणे. ● वाङ्मयीन संशोधनाच्या विविध अभ्यासक्षेत्रांचा परिचय करून देणे. ● आंतरविद्याक्षेत्रीय संशोधनाचे स्वरूप आणि महत्त्व समजावून सांगणे.

				<ul style="list-style-type: none"> ● मराठी साहित्य संशोधकांच्या परंपरांचा वेध घेणे.
48.	MA II 2019 Patt.	IV	नेमलेल्या अर्वाचीन साहित्यकृतीचा अभ्यास भाग -२ – 40493	<ul style="list-style-type: none"> ● अर्वाचीन कालखंडातील साहित्य प्रकार संकल्पना व स्वरूप समजावून सांगणे.
				<ul style="list-style-type: none"> ● अर्वाचीन कालखंडातील नेमलेल्या साहित्यकृतीचा परिचय करून देणे.
				<ul style="list-style-type: none"> ● नेमलेल्या साहित्यकृतीमधील वाडमयीन मूल्ये आणि जीवनमूल्ये यांचा शोध घेणे.
				<ul style="list-style-type: none"> ● नेमलेल्या साहित्यकृतींचे विश्लेषण आणि मूल्यमापन करणे.
49.	MA II 2019 Patt.	IV	लोकसाहित्याची मूलतत्वे आणि मराठी लोकसाहित्य – 40494	<ul style="list-style-type: none"> ● लोकसाहित्यातील विविध प्रकार समजावून सांगणे.
				<ul style="list-style-type: none"> ● लोकसाहित्याचे विविध कलाविष्कार अभ्यासणे.
				<ul style="list-style-type: none"> ● मराठी लोकसाहित्याचे कलात्मक सौंदर्य अभ्यासणे.
				<ul style="list-style-type: none"> ● लोकसाहित्यातील सामाजिक, धार्मिक, सांस्कृतिक जाणीवा स्पष्ट करणे.

DEPARTMENT OF HINDI

PO -01	साहित्य सृजन : हिंदी साहित्य की कतिपय विधाओं का अध्ययन तथा विभिन्न साहित्यकारों के व्यक्तित्व एवं कृतित्व का अध्ययन I
PO-02	भाषिक कौशल्य : हिंदी भाषा में बोलने की क्षमता को विकसित करना तथा हिंदी में रोजगार की संभावनाओं से छात्रों को सक्षम करना I
PO-03	अनुसंधान कौशल्य: किसी विशेष विषय में रूचि रखते हुए उसमें अध्ययन करना तथा समस्या का समाधान ढूंढते हुए ज्ञानात्मक कौशल्य को विकसित करना I
PO-04	समीक्षात्मक दृष्टिकोन: अपनी आंतरिक अभिव्यक्ति को विकसित करने के लिए अभिव्यक्ति क्षमता का विकास करना I
PO-05	रोजगार एवं स्वयं रोजगार : वैश्वीकरण के दौर में हिंदी भाषा का अध्ययन करते हुए विभिन्न क्षेत्रों में रोजगार की संभावनाओं को आत्मसात करना I

Programme Specific Outcomes (PSO)

PSO -01	हिंदी भाषा का उदभव,विकास एवं ऐतिहासिक प्रक्रिया को समझा गया I
PSO-02	साहित्य का स्वरूप,कौशल्य,एवं लेखन की प्रक्रिया को अवगत किया I
PSO-03	काव्य,कहानी,उपन्यास,नाटक आदि विधा से छात्रों को अवगत किया I
PSO-04	मध्ययुगीन हिंदी काव्य,साहित्यकार के व्यक्तित्व एवं कृतित्व का परिचय हुआ I
PSO-05	हिंदी साहित्य के संत वचनों का अध्ययन करते हुए उनके विचारों का अनुसरण किया I

Course Outcome (CO)

SN	Class	Sem	Subject With Code	COURSE OUTCOME
1.	F.Y.B.A	I	11092(LA)	<ul style="list-style-type: none"> ● साहित्य एवं सामाजिक गतिविधियों के माध्यम से छात्रों की बौद्धिक क्षमता को विकसित करना I ● हिंदी कथा साहित्य का अध्ययन करना I ● व्यक्तिमत्व विकास की दृष्टि से भाषा साहित्य का अध्ययन करना I

2	F.Y.B.A	II	12092(IA)	<ul style="list-style-type: none"> ● वैश्वीकरण के दौर में विभिन्न क्षेत्रों में अपनी क्षमता को वृद्धिमान करने की दृष्टि से भाषा शास्त्र का अध्ययन करना I ● हिंदी कहानी साहित्य के माध्यम से लेखन कार्य के लिए छात्रों को प्रेरित करना I ● साहित्य की कतिपय विधाओं की जानकारी देते हुए जीवन मूल्यों को समझाना I ● हिंदी साहित्य के प्रमुख साहित्यकारों की जानकारी देते हुए उनके व्यक्तित्व से छात्रों को प्रेरित करना I
3	S.Y.B.A (G-2)		23093	<ul style="list-style-type: none"> ● भाषिक कौशल्य का विकास करना I ● हिंदी कहानी के तत्वों का अध्ययन I ● हिंदी काव्य के माध्यम से विभिन्न विषयों से परिचित करना
4	S.Y.B.A (S-1)		23091	<ul style="list-style-type: none"> ● हिंदी उपन्यास साहित्य का परिचय देते हुए उपन्यास के तत्वों को समझाना I. ● काव्यशास्त्र का सामान्य परिचय ● काव्य की परिभाषा, स्वरूप को समझना
5	S.Y.B.A (S-2)		23092	<ul style="list-style-type: none"> ● काव्य के तत्त्व एवं शब्दशक्ति का अभ्यास ● रस सिद्धांत-परिभाषा, स्वरूप ● मध्ययुगीन हिंदी साहित्य का परिचय देना I
6	S.Y.B.A		23093	<ul style="list-style-type: none"> ● मध्यकाल के प्रमुख संतों का परिचय देते हुए उनके जीवन काल से अवगत कराना I

	(SEC)			<ul style="list-style-type: none"> ● कबीर,सूरदास,मीराबाई,बिहारी आदि के साहित्य का अध्ययन I ● अनुवाद का अर्थ,स्वरूप एवं प्रक्रिया को समझाना I ● अनुवाद की प्रक्रिया को समझाना I ● अनुवाद कार्य के लिए छात्रों को प्रेरित करना I ● माध्यम लेखन के स्वरूप को समझाना I ● छात्रों को संस्मरण साहित्य से अवगत कराना I
7	T.Y.B.A (G-3)	35093		<ul style="list-style-type: none"> ● छात्रों को रेखाचित्र साहित्य से अवगत कराना I ● छात्रों में वार्ता-लेखन कौशल्य दृष्टि निर्माण करना I ● साहित्य का काल विभाजन एवं नामकरण की प्रक्रिया I
8	T.Y.B.A (S-3)	35091		<ul style="list-style-type: none"> ● आदिकाल,भक्तिकाल,रीतिकाल की प्रवृत्तियों का परिचय I ● संत काव्य परंपरा का अनुसरण I ● आधुनिक काल की सामान्य पृष्ठभूमि का अध्ययन I ● भाषा की परिभाषाएँ एवं विशेषताएँ I
9	T.Y.B.A (S-4)	35092		<ul style="list-style-type: none"> ● हिंदी की बोलियों का सामान्य परिचय I
10	T.Y.B.A (SEC)	35096		

				<ul style="list-style-type: none">● नगरीलिपि का उदभव और विकास I● नगरी लिपि की विशेषताएँ एवं सुधर की संभावनाएँ I● पटकथा लेखन का स्वरूप एवं प्रक्रिया का अध्ययन I● फीचर के प्रकार एवं महत्त्व I● पटकथा लेखन की पद्धति,पटकथा का स्वरूप I● ड्राफ्ट लेखन की प्रक्रिया,स्क्रिप्ट लेखन की प्रक्रिया को समझना I● हिंदी फीचर एवं ब्लॉग लेखन का अध्ययन .
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DEPARTMENT OF ENGLISH

	Students of undergraduate general degree programme at the time of graduation will be able to:
PO -01	Effective Communication: The student will be to communicate in English language fluently and effectively and make meaning of the world by connecting people, ideas, books and technology.
PO-02	Literariness & Ethics: The student will be able to understand literary texts in English as well as the value system, moral dimensions and ethics.
PO-03	Critical Thinking: The student will be able to understand and apply critical theories and texts in English by looking at them from various perspectives.
PO-04	Advanced Learning: The student will be equipped with the knowledge of phonology, morphology, syntax, semantics and pragmatics of English language for further reference or advanced study.

Programme Specific Outcomes

	Students of undergraduate general degree programme at the time of graduation will be able to:
PSO -01	Communicate in English language fluently and effectively.
PSO-02	Demonstrate the knowledge and understanding of English language and texts in English.
PSO-03	Understand literary texts in English
PSO-04	Understand and apply critical theories and texts in English.
PSO-05	Understand the phonology, morphology, syntax, semantics and pragmatics of English language.

COURSE OUTCOME

SN	Class	Sem	Subject with Code	COURSE OUTCOME
1	F.Y.B.A.	I	Compulsory English 11001	After studying the paper successfully, the learners will be able to- <ul style="list-style-type: none"> • CO1. Expose to the best examples of prose and poetry in English so that they realize the beauty and communicative power of English. • CO2. Realize the beauty and communicative power of English by learning the prescribed prose and poetry. • CO3. Instill human values. • CO4. Develop the character building. • C04. Prepare to be responsible citizens

				of the world.
2	F.Y.B.A.	II	Compulsory English 12001	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to- • CO1. Develop the abilities to appreciate ideas and think critically. • CO2. Enhance employability by developing linguistic competence and communicative skills. • CO3. Revise and reinforce the structures already learnt in the previous stages of learning. • CO4. Acquire the skills of understanding and using English language correctly by learning grammar. • CO4. Communicate in English in different situations.
3	F.Y.B.A.	I	Optional English 11331	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to- • CO1. Expose to the basics of literature and language. • CO2. Expose to develop an integrated view about language and literature in them. • CO3. Acquaint with minor forms of literature in English especially short stories, essay and poetry. • CO4. Appreciate the creative use of language in literature.
4	F.Y.B.A.	II	Optional English 12331	<ul style="list-style-type: none"> • CO1. Learn the basics of phonology of English. • CO2. Do the English pronunciation and speak English correctly. • CO3. Prepare for the detailed study and understanding of literature and language. • CO4. Enhance the job potential by improving their language skills.
5	S.Y.B.A.	III	Compulsory English 23001	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to- • CO1. Expose to the best examples of literature in English and to contribute to their emotional quotient as well as independent thinking. • CO2. Instill universal human values through best pieces of literature in English. • CO3. Develop effective communication skills by developing ability to use right words in the right context. • CO4. Enhance the employability of the

				<p>students.</p> <ul style="list-style-type: none"> • CO5. Revise and reinforce the learning of some important areas of grammar for better linguistic competence.
6	S.Y.B.A.	IV	<p>Compulsory English</p> <p>24001</p>	<ul style="list-style-type: none"> • CO1. Expose to the best examples of literature in English and to contribute to their emotional quotient as well as independent thinking. • CO2. Instill universal human values through best pieces of literature in English. • CO3. Develop effective communication skills by developing ability to use right words in the right context. • CO4. Enhance the employability of the students. • CO5. Revise and reinforce the learning of some important areas of grammar for better linguistic competence.
7	S.Y.B.A.	III	<p>Skill Enhancement Course-SEC-1A Old General English (G-2)</p> <p>23333</p>	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to- • CO1. Familiarize with the various components of language. • CO2. Develop overall linguistic competence of the students. • CO3. Introduce to some advanced areas of language study. • • CO4. Prepare to go for detailed study and understanding of language.
8	S.Y.B.A.	IV	<p>Skill Enhancement Course-SEC-1A Old General English (G-2)</p> <p>24333</p>	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to- • CO1. Familiarize with the various components of language. • CO2. Develop overall linguistic competence of the students. • CO3. Introduce to some advanced areas of language study. • CO4. Prepare to go for detailed study and understanding of language. •
9	S.Y.B.A.	III	<p>Discipline Specific Course (DSC-1A) (Old Special Paper-I) Appreciating Drama</p>	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to- • CO1. Introduce to Drama as a major form of literature. • CO2. Introduce minor forms of Drama. • CO3. Acquaint and enlighten regarding the literary and the performing

			23331	<p>dimensions of drama.</p> <ul style="list-style-type: none"> • CO4. Acquaint and familiarize with the elements and the types of Drama. • CO5. Encourage to make a detailed study of a few sample masterpieces of English Drama from different parts of the world.
10	S.Y.B.A.	IV	<p>Discipline Specific Course (DSC-1A) (Old Special Paper-I) Appreciating Drama</p> <p>24331</p>	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to- • CO1. Encourage to make a detailed study of a few sample masterpieces of English Drama from different parts of the world. • CO2. Develop interest to appreciate and analyze drama independently. • CO3. Enhance awareness regarding aesthetics of Drama and to empower them to evaluate drama independently.
11	S.Y.B.A.	III	<p>Discipline Specific Course (DSC-2A) (Old Special Paper-II) Appreciating Poetry</p> <p>23332</p>	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to- • CO1. Acquaint with the terminology in poetry criticism (i.e. the terms used in appreciation and critical analysis of poems). • CO2. Encourage to make a detailed study of a few sample masterpieces of English poetry. • CO3. Enhance awareness in the aesthetics of poetry and to empower them to read, appreciate and critically evaluate poetry independently.
12	S.Y.B.A.	IV	<p>Discipline Specific Course (DSC-2A) (Old Special Paper-II) Appreciating Poetry</p> <p>24332</p>	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to- • CO1. Acquaint with the terminology in poetry criticism (i.e. the terms used in appreciation and critical analysis of poems). • CO2. Encourage to make a detailed study of a few sample masterpieces of English poetry. • CO3. Enhance awareness in the aesthetics of poetry and to empower them to read, appreciate and critically evaluate poetry independently.
13	S.Y.B.A.	III	Skill	<ul style="list-style-type: none"> • After studying the paper successfully,

			Enhancement Course- (SEC-2A & 2B) “A Certificate Course in Skill Development” 23334	<p>the learners will be able to-</p> <ul style="list-style-type: none"> • CO1. enhance the skill of using English for everyday communication • CO2. Acquaint with the verbal and nonverbal communication. • CO3. Create opportunities to access exposure of speaking in various contexts. • CO4. Acquaint and familiarize with soft skills. • CO5. Develop interest among the students to interact in English.
14	S.Y.B.A.	IV	Skill Enhancement Course- (SEC-2A & 2B) “A Certificate Course in Skill Development” 24333	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to- • CO1. Enhance the skill of using English for everyday communication. • CO2. Acquaint with the verbal and nonverbal communication. • CO3. Create opportunities to access exposure of speaking in various contexts. • CO4. Acquaint and familiarize with soft skills. • CO5. Develop interest among the students to interact in English.
15	T.Y.B.A.	V	Compulsory English 35001	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to- • CO1. Familiarize with some excellent pieces of prose and poetry in English so that they realize the beauty and communicative power of English. • CO2. Become competent and effective users of English in real life situations. • CO3. Contribute to the overall personality development. • CO4. Instill humanitarian values and foster sympathetic attitude. • CO5. Train in practical writing skills required in work environment. • CO6. Enhance employability through imparted knowledge of some essential soft skills.
16	T.Y.B.A.	VI	Compulsory English 36001	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to- • CO1. Familiarize with some excellent pieces of prose and poetry in English so that they realize the beauty and

				<p>communicative power of English.</p> <ul style="list-style-type: none"> • CO2. Become competent and effective users of English in real life situations. • CO3. Contribute to the overall personality development. • CO4. Instill humanitarian values and foster sympathetic attitude. • CO5. Train in practical writing skills required in work environment. • CO6. Enhance employability through imparted knowledge of some essential soft skills.
17	T.Y.B.A.	V	<p>Skill Enhancement Course (SEC 1-C & SEC 1-D) (Old G-3) Enhancing Employability Skills</p> <p>35333</p>	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able: • CO1. Be aware of career opportunities available to them. • CO2. Identify the career opportunities suitable to them. • CO3. Understand the use of English in different careers. • CO4. Develop competence in using English for the career of their choice. • CO5. Enhance skills required for their placement. • CO6. Use English effectively in the career of their choice. • CO7. Exercise verbal as well as nonverbal communication effectively for their career.
18	T.Y.B.A.	VI	<p>Skill Enhancement Course (SEC 1-C & SEC 1-D) (Old G-3) Enhancing Employability Skills</p> <p>36333</p>	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able: • CO1. Be aware of career opportunities available to them. • CO2. Identify the career opportunities suitable to them. • CO3. Understand the use of English in different careers. • CO4. Develop competence in using English for the career of their choice. • CO5. Enhance skills required for their placement. • CO6. Use English effectively in the career of their choice. • CO7. Exercise verbal as well as nonverbal communication effectively for their career.

19	T.Y.B.A.	V	Discipline Specific Elective (DSE-1C&DSE-1D) (Old S-3) Appreciating Novel 35331	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to: • CO1. Introduce to the basics of novel as a literary form. • CO2. Expose to the historical development and nature of novel. • CO3. Be aware of different types and aspects of novel. • CO4. Develop literary sensibility and sense of cultural diversity in students. • CO5. Expose to some of the best examples of novel.
20	T.Y.B.A.	VI	Discipline Specific Elective (DSE-1C& DSE-1D) (Old S-3) Appreciating Novel 36331	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to: • CO1. Introduce to the basics of novel as a literary form. • CO2. Expose to the historical development and nature of novel. • CO3. Be aware of different types and aspects of novel. • CO4. Develop literary sensibility and sense of cultural diversity in students. • CO5. Expose to some of the best examples of novel.
21	T.Y.B.A.	V	Discipline Specific Elective (DSE-2C & DSE-2D) (Old S-4) Introduction to Literary Criticism 35332	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to: • CO1. Introduce to the basics of literary criticism. • CO2. Become aware of the nature and historical development of criticism. • CO3. Become familiar with the significant critical approaches and terms. • CO4. Interpret literary works in the light of the critical approaches. • CO5. Develop aptitude for critical analysis.
22	T.Y.B.A.	VI	Discipline Specific Elective (DSE-2C & DSE-2D) (Old S-4) Introduction to Literary Criticism 36332	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able to: • CO1. Introduce to the basics of literary criticism. • CO2. Become aware of the nature and historical development of criticism. • CO3. Become familiar with the significant critical approaches and terms. • CO4. Interpret literary works in the light of the critical approaches.

				<ul style="list-style-type: none"> • CO5. Develop aptitude for critical analysis.
23	T.Y.B.A.	V	Skill Enhancement Course (SEC 2-C & SEC 2-D) Mastering Life Skills and Life Values 35334	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able: • CO1. Equip with the social skills. • CO2. Train the students' interpersonal skills. • CO3. Build self-confidence and communicate effectively. • CO4. Encourage the students to think critically. • CO5. Learn stress management and positive thinking. • CO6. Enhance leadership qualities. • CO7. Become aware about universal human values. • CO8. Develop overall personality.
24	T.Y.B.A.	VI	Skill Enhancement Course (SEC 2-C & SEC 2-D) Mastering Life Skills and Life Values 36334	<ul style="list-style-type: none"> • After studying the paper successfully, the learners will be able: • CO1. Equip with the social skills. • CO2. Train the students' interpersonal skills. • CO3. Build self-confidence and communicate effectively. • CO4. Encourage the students to think critically. • CO5. Learn stress management and positive thinking. • CO6. Enhance leadership qualities. • CO7. Become aware about universal human values. • CO8. Develop overall personality.
25	F. Y. B. Com.	I	Compulsory English 111	<ul style="list-style-type: none"> • CO1 Offer relevant and practically helpful pieces of prose and poetry to students so that they not only get to know the beauty and communicative power of English but also its practical application • CO2 Expose students to a variety of topics that dominate the contemporary socio-economic and cultural life •
26	F. Y. B.	II	Compulsory English	

	Com.		121	<ul style="list-style-type: none"> • CO1 Develop oral and written communication skills of the students so that their employability enhances • CO2 Develop overall linguistic competence and communicative skills of students
27	F. Y. B. Com.	I	Additional English 117A	<ul style="list-style-type: none"> • CO 1 Expose students to a good blend of old and new literary extracts having various themes that are entertaining, enlightening and informative so that they realize the beauty and communicative power of English
28	F. Y. B. Com.	II	Additional English 127A	<ul style="list-style-type: none"> • CO1 Make students aware of the cultural values and the major problems in the world today • CO2 Develop literary sensibilities and communicative abilities among students
29	S. Y. B. Sc	III	ENGLISH (Ability Enhancement Compulsory Course-AECC) 23221	<ul style="list-style-type: none"> • CO1 Introduce the use of English in multimedia • CO2 Acquaint the students with the language skills in multivalent contexts • CO3 Acquaint and enlighten students regarding the speaking skill in various contexts
30	S. Y. B. Sc	IV	ENGLISH (Ability Enhancement Compulsory Course-AECC) 24321	<ul style="list-style-type: none"> • CO1 Acquaint and familiarize the students with advanced writing skills in different Contexts • CO2 Acquaint and familiarize the students with soft skills • CO3 Minimize the gap between the existing communicative skills of the students and the skills they require at professional level • CO4 Develop competence among the students to appreciate and analyze short stories and poetry
31	S. Y. B. Sc (Computer Science)	III	ENGLISH AECC-II : Language Communication –I 23922	<ul style="list-style-type: none"> • CO1 Introduce the use of English in multimedia • CO2 Acquaint the students with the language skills in multivalent contexts • CO3 Acquaint and enlighten students regarding the speaking skill in various contexts
32	S. Y. B. Sc (Computer Science)	IV	ENGLISH AECC-II: Language Communication	<ul style="list-style-type: none"> • CO1 Acquaint and familiarize the students with advanced writing skills in different Contexts

			-II 24922	<ul style="list-style-type: none">• CO2 Acquaint and familiarize the students with soft skills• CO3 Minimize the gap between the existing communicative skills of the students and the skills they require at professional level• CO4 Develop competence among the students to appreciate and analyze short stories and• poetry
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DEPARTMENT OF ECONOMICS

PO-01	Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
PO-02	Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
PO-03	Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.
PO-04	Effective Citizenship: Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
PO-05	Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
PO-06	Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.
PO-07	Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes.
PO-08	Ability to apply the concepts of micro economics such as demand, supply, revenue, cost, elasticity, etc.

M.A(Economics)

PO-1	Ability to compare and contrast various market structures and understand concept of equilibrium and price determination.
PO-2	At the end of the course, the student should be able to evaluate microeconomic concepts, models and its use in real life situations.
PO-3	Ability to understand, apply and analyze concepts-public debt, budget, fiscal policy in public economics.
PO-4	Ability to interpret the theories relating to public economics in real life situations.
PO-5	Ability to discuss and debate on the public finance and policies.
PO-6	Ability to understand and interpret the concepts such as Balance of Payments, Exchange Rates, Foreign Exchange transactions, International capital flows, etc.
PO-07	Ability to critically analyze the effects of deficits, exchange risk, role of foreign capital on the world economy/trade.
PO-08	Ability to discuss and debate on subjects related to international trade and finances the Indian Economy.

PO-09	Ability to analyze and evaluate the subject with reference to various aspects of Labour economics.
PO-10	Ability to develop an understanding of the labour with its intricacies and imperfections and to be able to construct intellectual dialogue on the challenges of labour. the Indian Economy.

COURSE OUTCOMES

SN	Class	Sem	Subject with code	Course Outcomes
1	FY BA	1	Indian Economic Environment-I (11151)	<ul style="list-style-type: none"> • To familiarize the students with the recent developments in the Indian Economy. • To help the students to prepare for varied competitive examinations • To provide the students with the background of the Indian Economy with focus. Ability to develop an understanding of the economic environment and the factors affecting economic environment. • Ability to develop awareness on the various new developments in the different sectors of an economy – agriculture, industry, services, banking, etc.
2	FY BA	2	Indian Economic Environment-II (12151)	<ul style="list-style-type: none"> • To help the students to prepare for varied competitive examinations • To enable students to understand and comprehend the current business scenario, agricultural scenario and other sectorial growth in the Indian context. To make the student aware of the developments such as MSMEs, Digital Economy, E-Banking, BPO & KPO, etc. • Ability to develop an understanding of the economic environment and the factors affecting economic environment. • 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.
3	SY BA	3	Financial System-I (23153)	<ul style="list-style-type: none"> • Understanding of the opportunities of banking their interaction with rest of the economy essential to realize how monetary force operates through multitude of channels. • To understand fundamentals of modern financial system • To understand the recent trends and developments in banking system. <hr/> <ul style="list-style-type: none"> • To understand the role of the Reserve Bank of India in Indian financial system. • To provide the knowledge of various financial and non-financial institutions.

				<ul style="list-style-type: none"> To provide the students the intricacies of Indian financial system for better financial decision making.
4	SY BA	4	Financial System-II (24153)	<ul style="list-style-type: none"> To develop an understanding about subject matter of Economics. To impart knowledge of microeconomics. To clarify micro economic concepts To analyse and interpret charts, graphs and figures To develop an understanding of basic theories of micro economics and their application.
5	SY BA	3	Micro Economics –I (23151)	<ul style="list-style-type: none"> To understand the behavior of an economic agent namely; a consumer, a producer, a factor owner and the price fluctuations in a market. To demonstrate that the theories discussed in class will usually be applied to real-life situations. To help the students to prepare for varied competitive examinations
6	SY BA	4	Micro Economics-II (24151)	<ul style="list-style-type: none"> To understand the economic analysis in terms of theoretical, empirical as well as policy-making issues. The objective of the course is to familiarize the students the basic concepts of Macroeconomics and applications. To introduce students to the historical background of the emergence of macroeconomics
7	SY BA	3	Macro Economics-I (23152)	<ul style="list-style-type: none"> To familiarize students with the differences between microeconomics and macroeconomics. To familiarize students with various concepts of national income To familiarize students with Keynesian macroeconomic theoretical framework of consumption and investment functions
8	SY BA	4	Macro Economics-II (24152)	<ul style="list-style-type: none"> This paper is devoted to the theories of economics development, approaches to economic development, social and institutional aspects of development, constraints on development process, macroeconomic policies, role of foreign capital and economic planning in developing countries. To relate and recognize the concept and indicators of Economic Development. To describe and analyze the concept and indicators of Human Development.
9	TY BA	5	Indian Economic Development-I (35153)	<ul style="list-style-type: none"> To explain the characteristics of Developing and Developed Countries. To describe the constraints to the process of Economic Development.

10	TY BA	6	Indian Economic Development-II (36153)	<ul style="list-style-type: none"> • Course provides the students a thorough understanding and deep knowledge about the basic principles that tent to govern the free flow of trading goods and services at the global level. • It trained about the rational of recent challenge in the export import policies of India.
11	TY BA	5	International Economics-I (35151)	<ul style="list-style-type: none"> • To relate and recall the concepts of International Economics and • International Trade. • To describe and apply the theories of international trade. • To explain and comprehend the issues relating to Terms of trade and Balance of Payment.
12	TY BA	6	International Economics-II (36151)	<ul style="list-style-type: none"> • To relate and recognize the Nature and Scope of Public Finance. • To explain types of Public Expenditure and reasons for rising Public Expenditure. • To explain the types of Public Debt and its effects.
13	TY BA	5	Public Finance-I (35152)	<ul style="list-style-type: none"> • To explain and assess the components and instruments of Fiscal Policy. • To relate to the concepts of Budget and its components. • To describe and analyze the concept of Deficit Financing and its effects. • To describe and explain the Centre and State Financial Relationship.
14	TY BA	6	Public Finance-II (36152)	<ul style="list-style-type: none"> • Ability to compare and contrast Indian Economy with other world economies. • To describe and analyse the concept of Public Revenue and its components.

COURSE OUTCOME (M.A)

SN	Class	Sem	Course	Course Outcomes
1	MA-I	1	Micro Economics Analysis-I (12301)	<ul style="list-style-type: none"> • To provide a thorough understanding of the principles of economics • To enable students to apply micro economic concepts in various contexts. • To enable understanding the basic theories in microeconomics such as demand theory, production theory, market structures. • To discuss the modern developments in micro economics such as Modern Demand theories.
2	MA-		Micro	<ul style="list-style-type: none"> • To provide a thorough understanding of the principles of

	I	2	Economics Analysis-II (22301)	<p>economics</p> <ul style="list-style-type: none"> To enable students to apply micro economic concepts in various contexts. To enable understanding the basic theories in microeconomics such as demand theory, production theory, market structures. To discuss the modern developments in micro economics such as Game Theory.
3	MA-I	1	Public Economics-I (12302)	<ul style="list-style-type: none"> To develop an understanding of the changing role of the government and the fiscal functions of the modern governments. To discuss and deliberate on the concepts and theories in public economies like public policy, principles of taxation, theories of public expenditure, etc. To develop an understanding of various policies in public economics like fiscal policy, taxation policy, public debt policy, public expenditure policy etc.
4	MA-I	1	International Trade (12303)	<ul style="list-style-type: none"> To develop an understanding of the theoretical concept in international trade. To analyze international economics with reference to terms of trade, trade policy, trade agreements etc. To provide knowledge to students regarding recent developments and changes in international banking, international banking agreements etc. To make the students understand role of international economic organization and global crisis development.
5	MA-I	1	Agricultural Economics (12304)	<ul style="list-style-type: none"> To develop an understanding of agricultural economics in the theoretical as well as practical context. To discuss and debate the various issues and challenges faced by agrarian economies production, productivity, efficiency, employment, etc.
6	MA-I	2	Public Economics-II (22302)	<ul style="list-style-type: none"> To develop an understanding of various policies in public economics like fiscal policy, public debt policy, fiscal finances, etc. To help the students to understand the normative policies and compare it with the policies framed and followed by Indian economy. To impart information to the students about the reforms like taxation reforms in India
7	MA-I	2	International Finance (22303)	<ul style="list-style-type: none"> To develop an understanding of the theoretical concept in international finance Balance of Payments, exchange rate policies, capital flows, etc. To compare and contrast the scenarios on international trade in India vis-à-vis the world economy. To provide knowledge to students regarding recent developments and changes in international banking,

				<p>international banking agreements etc.</p> <ul style="list-style-type: none"> To make the students understand role of international economic organization and global crisis development
8	MA-I	2	Labour Economics (22304)	<ul style="list-style-type: none"> To develop an understanding of labour economics in the theoretical as well as practical context. To discuss and debate the various issues and challenges faced by labour with reference to division of labour, employment, wage determination, etc. To demonstrate on the various aspect
9	MA-II	3	Macro Economics Analysis-I (32301)	<ul style="list-style-type: none"> Course equips the students to understand systematic facts and latest theoretical development for empirical analysis.
9	MA-II	4	Macro Economics Analysis-II (42301)	<ul style="list-style-type: none"> This course assumed such a great significance in recent times that a prior understanding of macroeconomics theoretical structure is considered essential of the proper comprehension of the different issues and policies
10	MA-II	3	Growth & Development-I (32302)	<ul style="list-style-type: none"> To understand the importance of population in economic development and various theories that explains the growth of population in a country
10	MA-II	4	Growth & Development-II (42302)	<ul style="list-style-type: none"> India beginning a developing country this subject becomes extremely relevant for current situation. It includes the practical aspects of process of growth and development including the role of agriculture and industry, external trade and resources mobilization and the role of the state and the markets.
11	MA-II	3	Research Methodology (32303)	<ul style="list-style-type: none"> Course intends to make students aware about the changing scenario of the modern banking role, structure, performance and the current problem faced by the banking sector in India and also in the world. It also covers the future prospects and role of modern banking sector at the global level
11	MA-II	4	Research Methodology (42303)	<ul style="list-style-type: none"> Course provides extension and application of knowledge in a current specialized field. To get exposed to a few elements of social science research. Elementary knowledge of research methodology consolidated and depend their understanding of various branches of economics.
11	MA-II	3	Demography (32305)	<ul style="list-style-type: none"> Gender characteristics, migration and urbanization are the essential to understand the dynamics of this change
12	MA-II	4	Economics of Environment (42306)	<ul style="list-style-type: none"> The course attempts to sensitize the students about the dynamics of changes in the Rural Economy. It includes the study of problems faced by rural population and also includes the critical review of various schemes and projects

				that benefit the rural population. In this course the students are also made capable to understand the process of rural development and problems of rural development
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DEPARTMENT OF POLLITICAL SCIENCE

PO -01	The students acquire knowledge in the field of social sciences, literature and humanities which make them sensitive and sensible enough.
PO-02	The B.A. graduates will be acquainted with the social, economical, historical, geographical, political, ideological and philosophical tradition and thinking
PO-03	The program also empowers the graduates to appear for various competitive examinations or choose the post graduate programme of their choice.
PO-04	The B. A. program enables the students to aquire the knowledge with human values framing the base to deal with various problems in life with courage and humanity.
PO-05	The students will be ignited enough to think and act over for the solution of various issues prevailed in the human life to make this world better than ever
PO-06	Programme provides the base to be the responsible citizen

PROGRAM SPECIFIC OUTCOME(PSO)

PSO -01	Student aware about the Political Process
PSO-02	The concept and Ideas political science will be developed.
PSO-03	Student will understand the traditional and modern political thought.
PSO-04	Student will aware about concept of Political Journalism
PSO-05	Student will able to understand the various Political Ideologies administrative systems.

COURSE OUTCOME

SN	Class	Sem	Subject With Code	COURSE OUTCOME
1.	F.Y.B.A	I	11161	<ul style="list-style-type: none"> • Understanding of basic concept o Indian Constitution • Understanding of structure and Functions of Indian Political Systems. • Knowledge of fundamental rights and duty. • Understanding the role of cast and
2	F.Y.B.A	II	12161	

3	S.Y.B.A (G-2)	III	23164	religion in Indian Politics
		IV	24164	<ul style="list-style-type: none"> • To study of power Politics • To study the role of ideology • Role of different political ideologies and their impact in politics • To study how to work political Ideology
4	S.Y.B.A (S-1)	III	23161	<ul style="list-style-type: none"> • To know basic concept of Western Political Thought • Major traditions of thought that have shaped political discourse in different parts of The world • The great diversity of social contexts and philosophical visions
		IV	24161	
5	S.Y.B.A (S-2)	III	23162	<ul style="list-style-type: none"> • To Introduced The concept of Political Journalism • To Developed interest in study of Political Journalism • Awareness about various agencies of Political Journalism
		IV	24162	
6	S.Y.B.A (SEC)	III	23165	<ul style="list-style-type: none"> • To acquaint students with the important features of the Constitution of India and with the basic framework of Indian government • To familiarize students with the working of the Constitution of India • This paper focuses in detail on the political processes and the actual functioning of the political system.
		IV	24165	<ul style="list-style-type: none"> • To study of Local self Government • To Study of Jhilha Parishad • To Study of Panchayat Samiti & Gram Panchayat • To Study of Municipal Corporation

7	T.Y.B.A (G-3)	V	35164	<ul style="list-style-type: none"> • Understand the Concept of Governance • Knowledge of Bureaucracy • Introduction about various method of recruitment and training
		VI	36164	
8	T.Y.B.A (S-3)	V	35161	
		VI	36161	
9	T.Y.B.A (S-4)	V	35162	<ul style="list-style-type: none"> • Introduction of the various approaches to the study of international relation • Knowledge of Post Second World War • Understanding of basic concept of International Politics
		VI	36162	
10	T.Y.B.A (SEC)	V	35165	
		VI	36165	

DEPARTMENT OF GEOGRAPHY

PO -01	The bachelor program in geography is tailored to meet the students specific educational and professional goals in mind.
PO-02	During the first year of the program, the students are trained on advanced concepts of physical and human geography.
PO-03	The second year allows them to concentrate on specific areas of the subject, on which they complete their field reports.
PO-04	Develop the general understanding of global human population pattern factor influencing the distribution and mobility of human population including settlement and economic activities and human impacts on the physical environment.
PO-05	Read, interpret and generate maps and other geographic representations as well as analyze and present information from a special perspective.
PO-06	Evaluate cultural social physical and environmental process with a particular focus on space and place.
PO-07	The bachelor program in geography is tailored to meet the student's specific educational and professional goals in mind.

PROGRAM SPECIFIC OUTCOME (PSO)

PSO -01	Student aware about the geographical Process
PSO-02	The concept and Ideas geographical will be developed.
PSO-03	Student will understand the traditional and modern geographical thought.
PSO-04	Student will aware about concept of geography
PSO-05	Student will able to understand the various geographical activities

COURSE OUTCOMES (CO)

SN	Class	Sem	Subject With Code	COURSE OUTCOME
1.	F. Y. B. A.	I	Gg110 (A): Physical Geography(11201)	CO-1ToStudents are introduced to the basic concepts in Physical Geography. CO-2ToStudents are introduced to the various geographical features.
2.	F. Y. B. A.	II	110(B) Human Geography (12201)	CO-1Acquaint learners to the correlations between Economic activities and Geographical factors.
	F. Y. B. Com	I	Commercial Geography	CO-1Acquaint learners to the correlations between Economic activities and

			(115C)	<p>Geographical factors.</p> <p>CO-2 Keep students update with various economic activities in Geographical Environment.</p> <p>CO-3The students with the dynamic aspects of resources and need for their conservation.</p> <p>CO-4Interpretation of the role and dynamics of population in Commerce.</p>
	F. Y. B. Com	II	Commercial Geography (125C)	<p>CO-1 To acquaint learners to the correlations between Economic activities and Geographical factors.</p> <p>CO-2 To discover the Industrial sector and the pollution associated with it.</p> <p>CO-3 To identify the changing role of transport and communication in Trade and Commerce.</p> <p>CO-4 To predict the role of tourism in development.</p> <p>CO-5 To observe basic cartographic techniques</p>
3.	S.Y.B.A	III	Gg.210 (A) Environment Geography – (23204)	<p>CO-1Students are aware about dynamic environment among the student.</p> <p>CO-2Students are acquainted with fundamental concepts of environment Geography for development in different areas.</p> <p>CO-3Students have been able to integrate the various components of economic development and the dynamic aspects of economic geography.</p> <p>CO-4Students aware about the problems of environment, their utilization and conservation in the view of sustainable development.</p>
4.	S.Y.B.A	IV	Sem. IV Gg.210 (B) Environment Geography- (24204)	<p>CO-1Student are aware about dynamic environment among the students.</p> <p>CO-2Students are acquainted with the fundamental concepts of Environmental Geography.</p> <p>CO-3Students are acquainted about the past, presents and future utility and potentials of natural resources.</p> <p>CO-4Students are aware about the problems of environment, its utilization and conservation in the view of sustainable development.</p>

5.	S.Y.B.A	III	Gg. 201 (A) Scale and Map Projection Practical Geography- (23203)	CO-1Develop practical skill and use of map scale and projection. CO-2To makes students aware of the new techniques, accuracy and skills of map making.
6.	S.Y.B.A	IV	Sem. IV Gg. 201 (B) Cartographic Techniques, Surveying and Excursion / Village / Project Report-(24203)	CO-1Develop practical knowledge and application of cartographical techniques. CO-2To makes students aware of the new techniques, accuracy and skills of Map Making.
7.	S.Y.B.A	III	: SEC Applied course of Disaster Management (23207)	CO-1Students are introduced to the basic concepts and fundamental structure of Disaster Management (DM). CO-2Students inculcated critical thinking and problem-solving abilities on disaster management. CO-3Students acquired assess the situation and design plan for Disaster management.
8.	S.Y.B.A	IV	: SEC Applied course of Travel and Tourism (24207)	CO-1Students will be able to perform online as well as offline booking and cancellation procedures for different available modes of travel and tourism. CO-1Students will be able to acquire earning skills in tourism industry.
9.	T.Y.B.A	V	Gg. 320 (A) Geography of India- I (35201)	CO-1 Students are acquainted with Geography of our nation. CO-2 Students are aware about the magnitude of problems and Prospects at National level. CO-3Students are understand the inter relationship between the subject and society. CO-4 Students understand the recent trends in Regional studies.
10.	T.Y.B.A	VI	Gg. 320 (B) Geography of India- II (36201)	CO-1Students are acquainted with Geography of our nation. CO-2 Students are aware about the magnitude of problems and Prospects at National level. CO-3 Students are understand the inter

				relationship between the subject and society. CO-4 Students are understand the recent trends in Regional studies
	T.Y.B.A	V	301 (A) Practical Geography- I (Techniques of Spatial Analysis (35203)	CO-1Students introduced the basic concepts and techniques of Geographical Analysis. CO-2Students are introduced with SOI Top sheets and acquire the Knowledge of Top sheet interpretation. CO-3Students are students Introduced with Weather Maps and acquire the Knowledge of its interpretation. CO-4 Students are introduced with Aerial Photographs and Satellite Images and acquire knowledge to interpret it.
	T.Y.B.A	VI	Gg. 301 (B) Practical Geography- II Techniques of Spatial Analysis, Surveying and Excursion /Village/ Project Report(36203)	CO-1Students are acquainted students with the spatial and structural characteristics of Practical Geography. CO-2Students explained the elementary and essential principles on field of practical work.
	T.Y.B.A	V	SEC 2 C Research Methodology – I (35207)	CO-1Students developed the understanding of the basic concept of research. CO-2Students developed the understanding of the basic framework of sampling and data collection. CO-3Students developed the understanding of various sampling methods and techniques.
	T.Y.B.A	VI	SEC 2 C Research Methodology – II (35207)	CO-1Students identified various sources of information for data collection. CO-2Students Understand of the conducting survey on various issues and develop the Report writing skill of students.

DEPARTMENT OF COMMERCE

PROGRAM OUTCOME (PO)

Program Outcomes : B. Com.	
1	To develop independent logical thinking and facilitate personality development of the students
2	To equip the students for seeking suitable careers in management and entrepreneurship

Program Outcomes : M. Com.	
1	To equip and train Post Graduate students to accept the challenges of Business World by providing opportunities for study and analysis of advanced Commercial and business methods and processes
2	To inculcate students with methods of Data collection and interpretations.
3	To develop among students Communication, Study and Analytical skills.

Program Specific Outcomes : B. Com. (Cost & Works Accounting)	
1	Students got knowledge about Basic Cost concepts, Elements of cost, Ascertainment of Material and Labour Cost.
2	Students obtained knowledge about the concepts and principles application of Overheads
3	Students understood various methods of costing and their applications
4	Students understood the concepts and utility regarding costing techniques.
5	Students obtained the information about importance of training includes concepts, procedures and legal Provisions of cost audit.

Program Specific Outcomes : B. Com. (Business Administration)	
1	Students understood the concept and functions of Management and levels of management
2	Students acquired basic knowledge about various forms of business organizations
3	Students got information about various theories of management with modern aspects

4	Students understood management in globalize scenario
5	Students got knowledge about management techniques and organization structure.
6	Students got acquaint about business environment and its implications thereon.
7	Students understood the recent trends in business.

Program Specific Outcomes : B. Com. (Marketing Management)	
1	Students understood the concept and functions of marketing planning and sales management
2	Students got knowledge about marketing strategies and organization
3	Students got information about various facts of marketing with regulatory aspects
4	Students understood marketing in globalize scenario
5	Students obtained knowledge regarding the concepts of Marketing Research
6	Students understood the role of Brand and Distribution of production including Management in marketing.
7	Students understood the basic concepts related to Marketing, Management, Productivity and Economic Development
8	Students obtained knowledge about the importance of control on marketing activities

Program Specific Outcomes : M. Com. (Business Administration)	
1	Students got knowledge of concepts, nature and structure of Production and Operation Management
2	Students got sound knowledge of concepts, nature and structure of Financial Management
3	Students acquire sound knowledge of concepts, nature and importance of knowledge management
4	Students got acquaint with in-depth knowledge of HRM, practices followed by HR managers and understanding about recent trends in HRM
5	Students understood various concepts of organization behavior, knowledge about process of formation of group behaviour in an organization set up
6	The students got familiarize with the recent advancements in business administration and developed understanding about tools and their application in the business.
7	Students learnt the actual research process of the business organization

COURSE OUTCOMES

Sr. No.	Class	Sem.	Subject with Code	Outcome
1	F. Y. B. Com.	I	Financial Accounting-112	<ol style="list-style-type: none"> 1. Students got knowledge of various accounting concepts 2. Students gained knowledge about accounting procedures, methods and techniques.
2	F. Y. B. Com.	I	Business Mathematics and Statistics-114	<ol style="list-style-type: none"> 1. Students got prepared for competitive examinations. 2. Students understood the concept of Simple interest, compound interest and the concept of EMI. 3. Students got aware with the concept of shares and calculations of Dividend 4. Students understood the concept of population and sample. 5. Students upgraded their knowledge regarding the use of frequency distribution useful for make decision.
3	F. Y. B. Com.	I	Consumer Protection and Business Ethics-116	<ol style="list-style-type: none"> 1. Students got acquaint with concept of consumer and consumer movement. 2. The students got aware about consumer rights, duties and mechanism for resolving their disputes.
4	F. Y. B. Com.	II	Financial Accounting-122	<ol style="list-style-type: none"> 1. Students gained knowledge about accounting procedures, methods and techniques. 2. Students have developed practical approach to accounts writing by using software package.
5	F. Y. B. Com.	II	Business Mathematics and Statistics-124	<ol style="list-style-type: none"> 1. Students understood various methods of calculation regarding averages and variations. 2. Students understood the concept and application of profit and loss in business. 3. Students obtained knowledge for solving the LPP to maximize the profit and to minimize the cost. 4. Students knew about utility of correlation and regression analysis and estimation about the relationship between two variables. 5. Students understood the concept and techniques of different types of index numbers.
6	F. Y. B. Com.	II	Consumer Protection and Business Ethics-126	<ol style="list-style-type: none"> 1. Students got aware about laws relating to consumers. 2. Students got aware with role of Business Ethics in various functional areas.
7	S. Y. B. Com.	III	Business Communication I-231	<ol style="list-style-type: none"> 1. Students understood the concept, process and importance of communication. 2. Students acquired and developed good

				<p>communication skills requisite for business correspondence.</p> <p>3. Students developed awareness regarding new trends in business communication</p>
8	S. Y. B. Com.	III	Corporate Accounting I-232	<p>1. The students are enabled to develop awareness about Corporate Accounting in conformity with the provisions of Companies Act and Accounting as per Indian Accounting Standards.</p> <p>2. The students have learned about the conceptual aspect of corporate accounting and skills for Computerized Accounting</p> <p>3. The students are capable to implement their skills about accounting standards</p> <p>4. Students were updated with knowledge for preparation of final accounts of a company as per Schedule III of the Companies Act 2013</p>
9	S. Y. B. Com.	III	Business Management-I-234	<p>1. Students upgraded with the basic knowledge & understanding about business management concept.</p> <p>2. Help was provided to the students to develop cognizance of the importance of management principles.</p>
10	S. Y. B. Com.	III	Elements of Company Law-235	<p>1. Students imparted with the knowledge of fundamentals of Company Law.</p> <p>2. The knowledge of students updated regarding the provisions of the Companies Act of 2013.</p> <p>3. The knowledge of students improved regarding new concepts involving in company law regime.</p>
11	S. Y. B. Com.	IV	Business Communication II-241	<p>1. Students aware regarding new trends in business communication.</p> <p>2. Students were provided with knowledge of various media of communication.</p> <p>3. Students upgraded with the knowledge of various media of communication.</p> <p>4. Students developed with various skills of business communication through the application and exercises.</p>
12	S. Y. B. Com.	IV	Corporate Accounting I 242 -	<p>1. Students are empowered with skills to interpret the financial statements in simple and summarized manner for effective decision making process</p> <p>2. Students got acquaint with knowledge about various concepts , Objectives and applicability of some important accounting standards associated with corporate accounting.</p> <p>3. An understanding among the students was developed on the difference between</p>

				commencement and incorporation of a company and the accounting treatment for transactions during the two phases.
13	S. Y. B. Com.	IV	Business Management-II-244	<ol style="list-style-type: none"> 1. Students understood various functions of management 2. Students were provided with tools and techniques to be used in the performance of the managerial job.
14	S. Y. B. Com.	IV	Elements of Company Law-245	<ol style="list-style-type: none"> 1. Students acquainted with the duties and responsibilities of Key Managerial Personnel. 2. Students imparted with the provisions and procedures under company law 3. The capacity of the learners is enhanced to seek the career opportunity in corporate sector.
15	T. Y. B. Com.	V	Business Regulatory Framework-351	<ol style="list-style-type: none"> 1. Students grasped the detailed information regarding the basic concepts, terms & provisions of Mercantile and Business Laws. 2. Awareness improved among the students regarding these laws affecting business, trade and commerce.
16	T. Y. B. Com.	V	Advanced Accounting-352	<ol style="list-style-type: none"> 1. Imparted the knowledge of various accounting concepts 2. The knowledge about accounting procedures, methods and techniques has installed.
17	T. Y. B. Com.	V	354- Auditing	<ol style="list-style-type: none"> 1. The students got acquaint with the concept and principles of Auditing, Audit process, Assurance Standards, Tax Audit, and Audit of computerized Systems. 2. They got knowledge about preparation of Audit report.
18	T. Y. B. Com.	VI	361 Business Regulatory Framework	<ol style="list-style-type: none"> 1. Students were provided with conceptual knowledge about the framework of business Law in India. 2. Students were oriented about the legal aspect of business.
19	T. Y. B. Com.	VI	362- Advanced Accounting	<ol style="list-style-type: none"> 1. Students got acquainted with practical approach to accounts writing by using software package. 2. Students are empowered with skills to prepare the investment account in simple and summarized manner.
20	T. Y. B. Com.	VI	364- Taxation	<ol style="list-style-type: none"> 1. Students understood 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. 2. Students are trained to file income tax return in online mode.

21	M. Com. I	I	Management Accounting	<p>1) Students understood importance of management accounting and functions of Management Accounting.</p> <p>2) Students understood various decision-making techniques of marginal costing and its application in modern business.</p> <p>3) Product Pricing decision-making capacity of the students has been developed.</p> <p>4) Learners have prepared various budgets independently</p>
22	M. Com. I	I	Industrial Economics IE502M J	<p>1. Learners are acquainted with the concepts of industrial economics</p> <p>2. The learners got exposed to recent changes in industrial finance, measures to correct industrial imbalance etc.</p> <p>3. The students have identified the location of industries and the concepts associated therewith</p> <p>4. The learners are aware of the industrial profile of Maharashtra</p> <p>5. The students have developed an ability to apply and interpret the concepts of industrial economics</p>
23	M. Com. I	I	Research Methodology RM529MJ	<p>1. Students have understood research process and can explore various ethical issues and modern practices in research.</p> <p>2. Students gained fundamental knowledge about Methods of Data Collection and formulating questionnaire. They understood the process of Analysis and Interpretation of data.</p> <p>3. Students grasped knowledge on developing the most appropriate methodology for their research studies</p> <p>4. Students developed knowledge on how to write a research report by using different research methods and techniques.</p>
24	M. Com. I	II	Financial Analysis & Control. FA551MH	<p>1. Students acquired sound knowledge of concepts, methods and techniques of management accounting and the students developed for competence with their usage in managerial decision making and control</p> <p>2. Students learned to analyse the financial information for decision-makings.</p>
25	M. Com. I	II	Strategic Management ST552MJ	<p>1. Students understood the concept and process of strategic management. Emergence of changes in modern business environment will be learn be them.</p> <p>2. Students developed strategic analytical skills to design an effective strategic plan. They gained technical and managerial skills in various areas of business administration.</p> <p>3. Students learned Development of Applicability skills for effective plan implementation. They will gain technical skills required for evaluation of</p>

				alternatives and analytical skills for choice among alternatives 4. Students have a strong foundation in understanding the formulation of sound functional Strategy in various areas of business. They developed Analytical and Managerial Abilities for critical evaluation.
26	M. Com. II	III	Business Finance-321-	Students acquired sound knowledge of concepts, nature and structure of business finance.
27	M. Com. II	III	Research Methodology for Business-322	<ol style="list-style-type: none"> 1. The students got acquaint with the areas of Business Research Activities. 2. The students enhanced capabilities to conduct the research in the field of business and social sciences. 3. The students got enable in developing the most appropriate methodology for their research studies. 4. The students are familiar with the art of using different research methods and techniques
28	M. Com. II	IV	Capital Market and Financial Services.- 421	Students acquired sound knowledge, concept and structure of capital market and financial services.
29	M. Com. II	IV	Industrial Economic Environment. - ss422	<p>The students studied</p> <ol style="list-style-type: none"> 1. The basic concepts of Industrial Finance. 2. The effects of New Economic Policy. 3. The impact of Labor reforms on Industries.

SCIENCE FACULTY

DEPARTMENT OF CHEMISTRY

PO-01	To do Bachelors' in the basic areas of the discipline.
PO-02	To apply their broad knowledge of science across a range of fields, with in-depth knowledge in at least one area of study.
PO-03	To articulate the methods of science and explain why current scientific knowledge is both contestable and testable by further inquiry.
PO-04	To apply appropriate methods of research, investigation and design, to solve problems in science, including the planning and/or conduct of a significant project, problem or investigation.
PO-05	To recognize the need for information; effectively search for, evaluate, manage and apply that information in support of scientific investigation.
PO-06	Employ highly developed conceptual, analytical, quantitative and technical skills and are adept with a range of technologies.
PO-07	To evaluate the role of science, in addressing current issues facing local and global communities, for example climate change, health and disease, food security, sustainable energy use etc.
PO-08	To work effectively in groups to meet a shared goal with people who's disciplinary and cultural backgrounds differ from their own.
PO-09	To communicate clearly and convincingly about science ideas, practice and future contributions to expert and non-expert audiences, matching the mode of communication to their audience.

Program Specific Outcomes

PSO-1	To have post graduate education in chemistry after B.Sc. Chemistry.
PSO-2	To use modern library search tools to locate and retrieve scientific information about a topic, chemical, chemical technique, or an issue relating to chemistry.
PSO-3	To understand the objective of their chemical experiments, properly carry out the experiments, and appropriately record and analyze the results.

PSO-4	To use standard laboratory equipment, modern instrumentation, and classical techniques to carry out experiments.
PSO-5	To follow the proper procedures and regulations for safe handling and use of chemicals.
PSO-6	To communicate the concepts and results of their laboratory experiments through effective writing and oral communication skills.
PSO-7	To pursue their career objectives in advanced education in professional and in a scientific career in government or industry, in a teaching career in the school systems, or in a related career following graduation.

COURSE OUTCOME UG

S N	Class	Sem	Subject with Code	COURSE OUTCOME
1	F. Y.B. Sc. Chemistry	1 st	CH-101: Physical Chemistry	<ul style="list-style-type: none"> ✓ The principles of thermodynamics & calculation of different types of energies. Exothermic and endothermic reactions. ✓ Third law of thermodynamics and its application. ✓ Different salts, their pH value and preparation of buffer solution. ✓ Concept of common ion effect, ionic product, solubility product, hydrolysis constant, etc
2		1 st	CH-102: Organic Chemistry	<ul style="list-style-type: none"> ✓ The fundamental principles of organic chemistry, nomenclatures, stereochemistry (Conformations and configurations) of organic compounds. ✓ Different functional groups in organic chemistry.
3		1 st	CH-103: Practical Chemistry	<ul style="list-style-type: none"> ✓ The importance of chemical safety and Lab safety while performing experiments in laboratory. ✓ Thermochemical parameters and related concepts. ✓ Importance and techniques of pH measurements and preparation of buffer solutions. ✓ Elemental analysis of organic compounds and chromatographic techniques for separation of constituents of mixtures.
4		2 nd	CH-201: Inorganic	<ul style="list-style-type: none"> ✓ Different theories and principles applied to reveal atomic structure.

			Chemistry	<ul style="list-style-type: none"> ✓ Significance of quantum chemistry. Aufbau principle, Pauli Exclusion Principle. ✓ Hund's rule of maximum multiplicity and Electronic configuration. ✓ Classification, name, symbol, electronic configuration, periodic trends in properties of elements. ✓ Types of chemical bonds- Ionic, covalent, coordinate and metallic bond. ✓ Valence Bond Theory, its application and also the need of VSEPR theory.
5		2 nd	CH-202: Analytical Chemistry	<ul style="list-style-type: none"> ✓ Concept of mole concentrations, units of concentrations, preparation of solutions of different concentrations. ✓ Stoichiometric calculation, terms like ppm, ppb, ppt, density and specific gravity. Basics and types of chromatography. ✓ Working and application of pH meter. ✓ Classification, separation and analysis of binary mixture.
6		2 nd	CH-203: Practical Chemistry	<ul style="list-style-type: none"> ✓ Inorganic volumetric analysis and synthesis of Inorganic compounds. ✓ Chemical analysis of commercial products. ✓ Preparations and purification of organic compounds.
7	S.Y. B. Sc. (CBCS Pattern)	1 st	CH-301: Physical & Analytical Chemistry Paper-I	<ul style="list-style-type: none"> ✓ Concept of chemical kinetics and related terms (rate laws, molecularity, order, energy of activation, factors affecting rate of reaction, integrated rate laws). ✓ Characteristics of zero, first, and second order reactions. ✓ Order of reaction by integrated rate equation method, graphical method, half-life method and differential method. ✓ Arrhenius equation, collision theory and transition state theory of bimolecular reaction and its applications. ✓ Concept of adsorption, classification, factors affecting adsorption. Langmuir adsorption isotherm, Freundlich adsorption Isotherm, BET theory and application of adsorption. ✓ Concept of accuracy and precision. Methods of expressing the errors in analysis from results and different terms related to errors in quantitative

				<p>analysis.</p> <ul style="list-style-type: none"> ✓ Concept of volumetric analysis and related terms (concentration, indicator, equivalence point, end point, standard solutions, primary and secondary standards, complexing agent, precipitating agent, oxidizing agent, reducing agent, redox indicators, acid base indicators, metallochrome indicators, etc.). ✓ Preparation of standard solution and perform standardization of solutions. ✓ To construct acid – base titration curves and select proper indicator for particular titration (acid-base titrations, complexometric titration / precipitation titration / redox titration).
8		1 st	CH-302: Inorganic & Organic Chemistry Paper-II	<ul style="list-style-type: none"> ✓ Terms related to molecular orbital theory (AO, MO, sigma & pi bond, bond order, magnetic property etc.). ✓ Application of LCAO principle for the formation of different types of MO's from AO's. ✓ Distinction between AO and MO, bonding, anti-bonding and non-bonding molecular orbitals. ✓ MO energy level diagrams for homo and hetero diatomic molecules. ✓ Bond order, magnetic property and stability of molecule on the basis of bond order. ✓ Terms related to the coordination chemistry (double salt, coordination compounds, coordinate bond, ligand, central metal ion, complex ion, coordination number, magnetic moment, crystal field stabilization energy, types of ligand, chelate effect, etc.) ✓ Werner's theory of coordination compounds, distinction between primary and secondary valency. ✓ Coordination number and structure of complex ion. IUPAC nomenclature of coordination compound. ✓ Aromatic hydrocarbons/alkyl and aryl halides/ alcohols/ phenols and ethers from their names or from structure, name can be assigned. Synthesis/ important reactions of expected aromatic hydrocarbons/Alkyl and aryl halides/ Alcohols/ Phenols and ethers. Mechanism of reactions involved and differentiate between alcohols and phenols
9		1 st	CH-303:	<ul style="list-style-type: none"> ✓ Verification of theoretical principles by experiment

			Practical Chemistry Paper-III	<p>observations and interpret practical output with the help of theoretical principles.</p> <ul style="list-style-type: none"> ✓ Methods of identification of substance by chemical methods. ✓ To write and verify balanced equation for the chemical reactions performed in the laboratory. ✓ Different reactions of organic and inorganic synthesis and follow the progress of the chemical reaction by suitable method (colour change, ppt. formation, TLC). ✓ To arrange and set the apparatus for the desired experiments. ✓ Quantitative chemical analysis of substances & explain principles behind it. ✓ Systematic working skill in the laboratory.
10		4 th	CH-401: Physical & Analytical Chemistry Paper-	<ul style="list-style-type: none"> ✓ The term phase equilibria, components in phase system, degree of freedom and phase rule, etc. ✓ Types of equilibrium such as true or static, metastable and unstable equilibrium. ✓ Phase rule relationship and typical features for i) Water system ii) Carbon dioxide system iii) Sulphur system. ✓ Ideal and no-ideal solutions, their thermodynamic aspects such as Gibbs free energy change, volume change, enthalpy and entropy change of mixing. ✓ Raoult's law, Interpretation of i) vapour pressure–composition diagram ii) temperature- composition diagram. Explain azeotropes, Lever rule, Henry's law and its application. ✓ Solubility of partially miscible liquids- systems with upper critical solution temperature, lower critical solution temperature. Concept of distribution of solute amongst pair of immiscible solvents. ✓ Terms in conductometry, Kohlrausch's law and its Applications, Conductometric titrations and their applications in conductometric methods of analysis. ✓ Terms in Colorimetry, Construction and working of colorimeter. Applications of colorimetric methods in analysis. Terms in column chromatography, Applications of column chromatographic process in analysis.
11		4 th	CH-402: Inorganic & Organic	<ul style="list-style-type: none"> ✓ Different types of coordination complexes and isomerism in them. ✓ Application of VBT to explain bonding in coordination

			Chemistry Paper-II	<p>compound of different geometries & limitation of VBT.</p> <ul style="list-style-type: none"> ✓ Correlate no of unpaired electrons and orbitals used for bonding, inner and outer orbital complexes, ✓ Principle of crystal field theory (CFT) and its applications to different type of complexes (Td, Oh, Sq. Pl complexes). ✓ Magnetic properties of coordination compounds on the basis of weak and strong ligand field ligand concept. Origin of colour of coordination complex. ✓ Calculation of field stabilization energy and magnetic moment for various complexes. ✓ To identify Td and Sq. Pl complexes on the basis of magnetic properties / unpaired electrons. ✓ Spectrochemical series, tetragonal distortion / Jahn-Teller effect in Cu(II) Oh complexes. ✓ To draw structures of different aldehydes/ketones/carboxylic acids and their derivatives/ amines from their names or name can be assigned from structure. ✓ Synthesis of expected compounds, inter conversion of functional groups, important reaction and their mechanism, synthesis of diazonium salt from amines and their reactions. ✓ Structures of different conformations of cyclohexane (terms like axial and equatorial hydrogen, confirmation, substituted cyclohexane, etc.) ✓ Conformation of cyclohexane, their interconversion, stability with respect to potential energy. ✓ Cis-trans conformations of methyl / t-butyl monosubstituted cyclohexane (axial, equatorial) and 1, 2 dimethyl cyclohexane and their stability.
12		4 th	CH-403: Practical Chemistry Paper-III	<ul style="list-style-type: none"> • Verification of theoretical principles by experiment observations and interpret practical output with the help of theoretical principles. • Methods of identification of substance by chemical methods. • To write and verify balanced equation for the chemical reactions performed in the laboratory. • Different reactions of organic and inorganic synthesis and follow the progress of the chemical reaction by suitable method (colour change, ppt. formation, TLC).

				<ul style="list-style-type: none"> To arrange and set the apparatus for the desired experiments. Quantitative chemical analysis of substances & explain principles behind it.
13	T.Y. B. Sc. (CBCS Pattern) DSEC I	5 th	CH-501: Physical Chemistry-I	<ul style="list-style-type: none"> ✓ Concept of quantization, wave particle duality, Uncertainty principle and its physical significance, Schrodinger wave equation, Wave function and its Interpretation, Degeneracy and application. ✓ Additive and constitutive properties, electrical polarization of molecule, induced and orientation polarization, dipole moment, nature of wave Rotational / Microwave spectroscopy, Vibrational Spectra, Vibrational rotational Spectra, Raman Spectroscopy and Solve the numerical problems. ✓ Thermal and photochemical processes, photochemical laws, Quantum Photochemical reactions and various photochemical phenomena and are able to solve problems.
14		5 th	CH-502: Analytical Chemistry-I	<ul style="list-style-type: none"> ✓ Gravimetric and thermal methods of analysis, basic concepts of spectrophotometry, parameters in instrumental analysis and qualitative analysis.
15		5 th	CH-503: Physical Chemistry Practical-I	<ul style="list-style-type: none"> ✓ The molecular weight of polymer by using Ostwald viscometer. ✓ Different instrument like pH meter, Spectrophotometry, colorimeter, photofluorometer etc. and are able to determine different parameters. ✓ Students can develop the technique to analysis of the given vibration-rotation spectrum of HCl(g)
16	T.Y. B. Sc. (CBCS Pattern) DSEC-II	5 th	CH-504: Inorganic Chemistry-I	<ul style="list-style-type: none"> ✓ Understand the theoretical concepts behind organic synthesis. Terms involved in coordination chemistry, Werner's theory of coordination complexes, limitations of VBT, shapes and degeneracy of d-orbital's, geometrical and optical isomerism of complexes, p-type and n-type semiconductor
17		5 th	CH-505: Industrial Chemistry	<ul style="list-style-type: none"> ✓ Importance and basic requirements of chemical, sugar and fermentation industry. ✓ Importance of food starches, basic chemical, molasses and bagasse, manufacture of dyes, glass, soap and detergents by modern methods, various pharmaceutical drugs, their application and synthesis. ✓ Function of dyes, paints and pigments, various type of surfactants.

18		5 th	CH-506: Inorganic Chemistry Practical-I	<ul style="list-style-type: none"> ✓ Gravimetric analysis of ores and alloy. Preparation of various inorganic complex and their % purity. ✓ Removal of borate and phosphate from inorganic binary mixtures. Chromatographic techniques
19	T.Y. B. Sc. (CBCS Pattern) DSEC-III	5 th	CH-507: Organic Chemistry-I	<ul style="list-style-type: none"> ✓ Meaning, structure, synthesis and reactions of polynuclear and heteronuclear aromatic compounds. ✓ Synthesis and synthetic applications of active methylene compounds. ✓ Types of reactive intermediate and mechanism of different rearrangement reactions. ✓ Different types of elimination reactions with their mechanism, stereochemistry, orientation and reactivity of geometrical isomers
20		5 th	CH-508: Chemistry of Biomolecules	<ul style="list-style-type: none"> ✓ Types of cell, difference between bacterial, plant and animal cell. ✓ Biological composition and organization of cell membrane, structure and function of various cell organelles of plant and animal cell. ✓ Types, structure, reactions and biochemical significance of carbohydrates (glucose). Types, structure and properties of lipids and amino acids. ✓ Types and structural features of proteins. Effect of pH on structure of amino acid. Different classes and features of various types of enzyme inhibitions, their industrial applications. ✓ Concept of endocrinology, different types of endocrine glands and their hormones. Biochemical nature, mechanism of action of lipophilic and hydrophilic hormones.
21		5 th	CH-509: Organic Chemistry Practical-I	<ul style="list-style-type: none"> ✓ Separation of organic binary mixture and its qualitative analysis. ✓ Preparation of dibenzalpropanone, nitration of phenol and bromination of acetamide by green synthesis route. ✓ Preparation of 1,4-dihydropyrimidone, p-Iodonitrobenzene and p-Chloro benzoic acid. ✓ Preparation of organic derivative of carboxylic acid, glucose and p-Aminophenol.
22	T.Y. B. Sc. (CBCS Pattern) SEC-I	5 th	CH-510: Polymer Chemistry	<ul style="list-style-type: none"> ✓ History, name and various ways of nomenclature of polymers. Difference between natural, synthetic, organic and inorganic polymers. ✓ Degree of polymerization, Functionality, Number average, Weight average molecular weight. Mechanisms of polymerization, polymerization techniques. Uses & properties of polymers, role of polymer industry in the economy, advantages of polymers.
23	T.Y. B. Sc.	5 th	CH-511: Environme	<ul style="list-style-type: none"> ✓ The importance and conservation of environment and biogeochemical cycles.

	(CBCS Pattern) SEC-II		ntal Chemistry	<ul style="list-style-type: none"> ✓ About the Water resources, hydro-logical cycle, organic and inorganic pollutants present in the water and water quality parameters. ✓ The analytical techniques in water analysis, different types of water pollution and water treatments. ✓ About the solid waste management and water preservation. ✓
24	T.Y. B. Sc. (CBCS Pattern) DSEC-IV	6 th	CH-601 Physical Chemistry-II	<ul style="list-style-type: none"> ✓ Types and emf of cells, reference electrode, Nernst equation, thermodynamic parameters, equilibrium constant K of the cell reaction, liquid junction potential. ✓ Classification of electrochemical cell, redox titrations, fuel cells and their applications. ✓ Crystalline and amorphous solids / anisotropic and isotropic solid, laws of crystallography, Weiss and Millers Indices, Crystal system different planes, Bragg's experiment. ✓ Structure of NaCl Laue's and Bragg's method, applications and solve the numerical problems ✓ Classification of nuclides, decay kinetics, measurement of radioactivity, application of radioisotopes and solve the numerical problems based on this topic.
25		6 th	CH-602 Physical Chemistry-III	<ul style="list-style-type: none"> ✓ The terms-Solution, electrolytes, nonelectrolytes and different colligative properties. ✓ Vant Hoff's factor and degree of dissociation of electrolyte by colligative property. ✓ Chemical kinetics; reaction rates applications of chemical kinetics. Cohesive energy of ionic crystals, correspondence between energy levels in the atom and energy bands in solid. ✓ Band structure in conductors and insulators, its correlation, photoconductivity, semiconductors, cohesive energy in metals. ✓ History of polymers, classification, chemical bonding, molecular forces molecular weight of polymers and determination.
26		6 th	CH-603 Physical Chemistry Practical-II	<ul style="list-style-type: none"> ✓ Determination of plateau voltage, resolving time of GM counter and Emax of beta particle. ✓ Handling of different instrument like pH meter, conductivity meter, turbidometer etc. and determine different parameters. ✓ Determination of various colligative properties and analysis of crystal structure from X-ray diffraction spectra.
27	T.Y. B. Sc. (CBCS Pattern)	6 th	CH-604 Inorganic Chemistry-II	<ul style="list-style-type: none"> ✓ Meaning and importance of organometallic compounds in the homogenous catalysis. ✓ Bio-inorganic chemistry, types of inorganic polymers and preparation of inorganic solids by

	DSEC-V			various methods.
28		6 th	CH-605 Inorganic Chemistry- III	<ul style="list-style-type: none"> ✓ Crystalline solids. Acid-base theories. Toxicity of chemicals in the environment and their impact on enzyme. ✓ Different zeolite framework types, classification, synthesis and structure. ✓ Various methods of nanoparticle synthesis
29		6 th	CH-606 Inorganic Chemistry Practical-II	<ul style="list-style-type: none"> ✓ Gravimetric and volumetric analysis of ores and alloy. ✓ Importance of flame photometry, column chromatography techniques for estimation and purification respectively. Synthesis of Nanomaterial. ✓ Verification of periodic trends using solubility of alkaline earth metal hydroxides.
30	T.Y. B. Sc. (CBCS Pattern) DSEC-VI	6 th	CH-607 Organic Chemistry- II	<ul style="list-style-type: none"> ✓ Nature of interactions between different regions of the electromagnetic radiation and organic molecules. ✓ Principles of UV-Visible, Infra-red, NMR and Mass spectroscopy and nature of UV, IR, NMR and Mass spectrum. ✓ Different types of electronic transitions, maximum wavelength, fundamental modes of vibrations, functional group frequency, finger print region, types of protons, measurement of chemical shift, coupling constants etc. ✓ Structure elucidation of organic molecule on the basis of spectral data. ✓ Stereochemistry, geometrical isomers, energy calculations and optical activity of different conformers of disubstituted cyclohexane and decalin.
31		6 th	CH-608 Organic Chemistry- III	<ul style="list-style-type: none"> ✓ Retrosynthetic analysis and synthesis of acetophenone, crotonaldehyde, cyclohexene, benzyl benzoate and benzyl diethyl malonate. ✓ Reaction mechanism and synthetic applications of Wolff rearrangement, Hofmann rearrangement, Simmons-Smith, Michael, Wittig, McMurry and Diels-Alder reactions. ✓ Use of different oxidizing and reducing agents for specific purpose. ✓ Extraction/Isolation, Classification of terpenoids and alkaloids. Structure determination by chemical and spectral methods. Synthesis of Citral and Ephedrine.
32		6 th	CH-609 Organic Chemistry Practical-II	<ul style="list-style-type: none"> ✓ Functional group from given IR spectra and structure from NMR spectra of organic compound. ✓ Estimation of glucose, glycine, Alkali content in antacid and saponification value of oil volumetrically. ✓ Extraction of caffeine from tea leaves, Eugenol from cloves, lycopene from tomato peels, cinnamic acid from cinnamon and Trimyristin from nutmeg.

				<ul style="list-style-type: none"> ✓ Separation of mixture of aldehyde and carboxylic acid, o-nitrophenol and p-nitrophenol by column chromatography.
33	T.Y. B. Sc. (CBCS Pattern) SEC-III	6 th	CH-610 Chemistry of Soil and Agrochemicals	<ul style="list-style-type: none"> ✓ Agriculture chemistry with its potential, basic concept of soil, its properties & classification on the basis of pH. ✓ The different plant nutrients, their functions and deficiency symptoms, various techniques to protect the plants. ✓ The problematic soil and recommend method for their reclamation. ✓ The quality irrigation water, quality standard and analysis of irrigation water. ✓ About different pesticides, their nature and, mode of action and their fate in soil so as to monitor their effect on the environment. ✓ Various nutrient management concepts and Nutrient use efficiencies of major and micro nutrients and enhancement techniques.
34	T.Y. B. Sc. (CBCS Pattern) SEC-VI	6 th	CH-611 Analytical Chemistry-II	<ul style="list-style-type: none"> ✓ The basic concepts of solvent extraction, basics of chromatography, ✓ Principle, instrumentation and uses of HPLC, GC and AAS.

PROGRAM OUTCOME (PG)

M.SC ANATYTICAL CHEMISTRY

PO-01	Learn the terms, theories, assumptions, methods, principles, theorem statements and classification, Disciplinary knowledge
PO-02	Fix out the problem and resolve it using the ories and practical knowledge, Critical thinking and Problem solving
PO-03	Analyze and interpret ideas, evidences and experiences with learned scientific reasoning, Scientific reasoning
PO-04	Aware and implement the subject facts that can be applied for the personal and social development, Reflective thinking
PO-05	Usedigital literacy to retrieve and evaluate subject related information, Information/Digitally literacy
PO-06	Get moral and ethical values for society as well as in research, Moral and ethical awareness

PO-07	Give analytical reasoning to interpret research data, Analytical Reasoning
PO-08	Improve their managerial skills and abilities in subject related activities, Leadership readiness/ qualities
PO-09	Inculcate continuous learning habit through all available resources, Lifelong readiness/ qualities

PROGRAM SPECIFIC OUTCOME (PSO)

PSO-1	Disciplinary knowledge Demonstrate a comprehensive knowledge of all disciplines.
PSO-2	Critical thinking To assess and evaluate facts, claims and arguments using their scientific knowledge
PSO-3	Research-related skills To define a problem, analyses, interpret and draw conclusion by planning, implementing and reporting the results of an experiment.
PSO-4	Information/ digital literacy To access, evaluate and apply a variety of useful sources
PSO-5	Multicultural competence To participate in multicultural society and communicate the subject knowledge for the betterment of society
PSO-6	Lifelong learning To acquire knowledge and skills including—Learning how to learn that are necessary in learning activities throughout life

COURSE OUTCOME (CO)

SN	Class	Sem	Subject with Code	COURSE OUTCOME
1	F.Y. M. Sc. (CBCS Pattern)	1 st	CHE-501: Physical Chemistry Paper-I	✓ Students should be able to remember the concepts of thermodynamic parameters, quantum mechanical postulates, rate laws of chemical reactions and computation of

				<p>macroscopic properties of matter.</p> <ul style="list-style-type: none"> ✓ Students should understand the basics like state function and path function, Schrodinger wave equation, kinetics of fast reactions, partition functions and ensembles. ✓ 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 ✓ 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. ✓ 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. ✓ Students should be able to create the solutions to avoid excess use of energy in chemical reactions by applying their knowledge of thermodynamics and chemical kinetics.
2	F.Y. M. Sc. (CBCS Pattern	1 st	CHE-502: Inorganic Chemistry Paper-I Section I- Molecular Symmetry and its applications to Inorganic chemistry	<ul style="list-style-type: none"> ✓ Define symmetry elements and symmetry operations, classes, properties of a group, group multiplication table, etc. ✓ Classify symmetry elements, point group, Group, sub-group and classes. ✓ Use wave function as basis for determination of irreducible representations and the Great Orthogonality theorem and its consequence. ✓ Solve problem based on point group, matrix representation and character table ✓ Construct character table of various point group ✓ Justify which can take part in bonding on the basis of SALCs and point group of molecules.

3	F.Y. M. Sc. (CBCS Pattern)	1 st	CHE-502: Inorganic Chemistry Paper-I Section-II: Chemistry of Main Group Elements	<ul style="list-style-type: none"> ✓ Define electron deficient, electron precise and electron rich species, Pseudohalogen, Oxoacids and Oxidation state. ✓ Describe special properties of fluorine, Nitrogen activation, Oxo acids of nitrogen, sulphur and phosphorous, synthesis and structure of xenon fluorides. ✓ Explain term metal sulfides, selenides, tellurides, polonide, inter-halogen, Halogen oxides, Graphene, fullerenes and carbon nanotube. ✓ Determine Oxidation states of nitrogen and their inter conversion and application of crown ether in extraction of alkali and alkaline earth metal. ✓ Differentiate between diamond and graphite, Pseudohalogen and interhalogen. ✓ Classify the hydrides, borides and oxyacids and draw their structure.
4	F.Y. M. Sc. (CBCS Pattern)	1 st	CHE -503, Organic Chemistry-I	<ul style="list-style-type: none"> ✓ Understand the concepts of aromaticity, stereochemistry, and oxidation-reduction reactions. Learn the concepts of stereochemistry. ✓ Predict the product and mechanism of the reactions. ✓ Advance knowledge of various stereochemical aspects. ✓ Apply the concepts of oxidations and reduction to solve the advance problems. ✓ Develop problem solving ability
5	F.Y. M. Sc. (CBCS Pattern)	1 st	CHE- 504, Physical Chemistry Practical I	<ul style="list-style-type: none"> ✓ Students will grasp the concept of reaction rate and its significance in Chemical Kinetics. ✓ Students will learn how to use experimental data to deduce rate laws and rate constants. ✓ 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. ✓ Students will be able to operate the instruments like spectrophotometer and colorimeter. ✓ Students will be able to determine the densities of the solutions and can calculate molar volumes

6	F.Y. M. Sc. (CBCS Pattern)	1 st	CHE-505, Inorganic Chemistry Practical-I	<ul style="list-style-type: none"> ✓ Prepare solution of required conc. and handle the laboratory equipment properly. ✓ Perform experiment accurately and able to perform calculation. ✓ Explain experiment and principal of experiment in detail. ✓ Perform calculations and discuss results and write conclusions of the experiment. ✓ Apply knowledge to a) design experiment for given aim or modify experiment to enhance results. b) to find out lacuna in experimental procedure. ✓ Solve problem/ numerical depending on given experimental data / information.
7	F.Y. M. Sc. (CBCS Pattern)	1 st	CHE-506, Organic Chemistry Practical I	<ul style="list-style-type: none"> ✓ Understand the theoretical aspects behind separation, purification and synthesis of organic compounds. ✓ Acquire the experimental skills for separation, purification, identification and synthesis of organic compounds. ✓ Design experimental set up for performing the organic reactions. ✓ Monitor the organic reactions. ✓ Describe the mechanistic aspects of organic reactions. ✓ Develop problem solving ability.
8	F.Y. M. Sc. (CBCS Pattern)	1 st	CHEPIA-507 (D), Basic Organic Chemistry	<ul style="list-style-type: none"> ✓ Understand the concepts of chemical bonding, various structural effects, acids and bases, and types of reactions ✓ Basic knowledge of aliphatic and aromatic substitutions, elimination and addition reactions ✓ Understand and identify the types of organic reactions. ✓ Write the mechanism of aliphatic and aromatic substitutions, elimination and addition reactions and oxidation-reduction reactions ✓ Solve the problems involving multiple steps. ✓ Develop problem solving ability of the students
9	F.Y. M. Sc. (CBCS Pattern)	1 st	CHE-508, Research methodology	<ul style="list-style-type: none"> ✓ Develop a comprehensive understanding of different research methodologies and their applications in mathematics. ✓ Cultivate critical thinking and analytical skills necessary for

				identifying research problems and formulating research questions. ✓ Provide practical experience in designing experiments, collecting and analyzing data, and interpreting research results. ✓ research results.
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SN	Class	Sem	Subject with Code	COURSE OUTCOME
1	S.Y.M.Sc. (CBCS Pattern)	4 th	CHA-490:Advanced Analytical Spectroscopic Techniques	<ul style="list-style-type: none"> ✓ Define / understand various terms in atomic absorption, atomic emission, fluorescence, ESR and electron spectroscopy. ✓ Explain instrumentation of atomic absorption, atomic emission, ICPAES, ICPAES-MS, fluorescence, ESR and electron spectroscopy. ✓ To describe basic principles of atomic absorption, atomic emission, ICPAES, ICPAESMS, fluorescence, ESR and electron spectroscopy. ✓ Select appropriate methods for sample treatment in AAS / AES, ICPAES, ICPAES-MS.
2	S.Y.M.Sc. (CBCS Pattern)	4 th	CHA-491:Chemical Methods of Pharmaceuticals Analysis	<ul style="list-style-type: none"> ✓ Define / understand various terms in pharmaceutical raw material and finished product analysis. ✓ Explain various pharmaceutical dosage forms and types of raw materials used. ✓ To describe basic principles of methods of pharmaceutical analysis according to IP. ✓ Explain importance particular test in pharmaceutical raw material and finished product analysis.
3	S.Y.M.Sc. (CBCS Pattern)	4 th	CHA-492: A) Laboratory Automation and Environmental Analytical Chemistry	<ul style="list-style-type: none"> ✓ Define / understand various terms in – i) Laboratory automation and sensors, ii) environmental pollution, analysis water and air. ✓ Explain instrumentation of automated laboratory analysis and sensors. ✓ To describe basic principles of automated laboratory analysis and sensors. ✓ Explain importance of automated laboratory analysis and sensors.
4	S.Y.M.Sc. (CBCS Pattern)	4 th	CHA-492: B) Analytical Chemistry of agriculture, Polymer and Detergents	<ul style="list-style-type: none"> ✓ Define / understand various terms in soil analysis, pesticide residue analysis, detergent analysis and polymer analysis. ✓ Explain/describe techniques/methods of soil analysis, pesticide residue analysis, detergent analysis and polymer analysis.

				<ul style="list-style-type: none"> ✓ To describe basic principle techniques/methods ✓ soil analysis, pesticide residue analysis, detergent analysis and polymer analysis.
5	S.Y.M.Sc. (CBCS Pattern)	4 th	CHA-493: A) Optional Analytical Chemistry Practical	<ul style="list-style-type: none"> ✓ Maintain proper record of analytical data in notebook. Observe personal safety in laboratory and able to handle all chemicals, instruments, etc safely in laboratory. ✓ Define / understand various terms involved in practical methods of quantitative analysis. ✓ Perform analysis of sample with described procedure. Able to handle analytical instruments.
6	S.Y.M.Sc. (CBCS Pattern)	4 th	CHA-493: B) Project	<ul style="list-style-type: none"> ✓ Maintain proper record of analytical data in notebook for research purpose. ✓ Perform review of literature related to the topic of project work and design the problem for project work. ✓ Decide and describe methodology for problem to solve proposed problem in the form of project. Decide and ✓ perform application of research work.

DEPARTMENT OF BOTANY

PROGRAM OUTCOME (PO)

PO -01	Apply the knowledge of biology to make scientific queries and enhance the comprehension potential.
PO-02	It also provides opportunities to learn experimental concepts related with life sciences.
PO-03	Successful transfer of scientific knowledge both orally and in writing.
PO-04	Function as an individual, as a member or a leader to perform a task in class room situation or during field study.
PO-05	Acquired the skills handling scientific instruments, planning and performing in laboratory experiments. The skills of observations and drawing logical inferences from the scientific experiments.
PO-06	Insist the significance of conserving a clean environment for perpetuation and sustainable development. Study incessantly by self to cope with growing competition for higher studies and employment.
PO-07	Developed scientific outlook not only with respect to science subjects but also in all aspects related to life. Realized that knowledge of subjects in other faculties such as humanities, performing arts, social sciences etc.

PROGRAM SPECIFIC OUTCOME (PSO)

PSO -01	Understand the nature and basic concepts of cell biology, genetics, anatomy, morphology, biochemistry, physiology, taxonomy and ecology of plants.
PSO-02	Students learn to carry out practical work, in the field and in the laboratory, gain skills and proficiency in Interpreting plant morphology and anatomy, Plant identification etc.
PSO-03	Identify the taxonomic position of plants, formulate the research literature and analyze plants with substantiated conclusions using first principles and methods of nomenclature and classification in Botany.
PSO-04	Identify problems and finding of solutions using creative approaches, acquired through interdisciplinary experiences, and a depth and breadth of knowledge/expertise in the field of Plant Identification.
PSO-05	Demonstrate hands on skill in the experimental techniques and methods of analysis in various fields of Botany.

COURSE OUTCOME (CO)

SN	Class	Sem	Subject With Code	COURSE OUTCOME
1	F.Y.B.Sc	I	BO-111: Plant life & Utilization I	<ul style="list-style-type: none"> ● Learn the lower Cryptogams (Thallophytes and Bryophytes). ● Know the lifecycle patterns. ● Identify the applications of Algae, Fungi, Lichens and Bryophytes. ● Participate in field visit.
2	F.Y.B.Sc	I	BO112: Plant Anatomy & Morphology	<ul style="list-style-type: none"> ● Learn the importance of plant morphology. ● Identify the morphology of reproductive parts of plants. ● Gain knowledge of various tissues and internal organization of plant body. ● Explore the knowledge.
3	F.Y.B.Sc	I	BO-113: Practical based on BO111&112	<ul style="list-style-type: none"> ● Correlate between practicals with the or to improve the understanding. ● Participate actively in educational tour for the study of flora. ● Gain insights of research related methodology.

				<ul style="list-style-type: none"> • Learn the plant related practical skills.
4	F.Y.B.Sc	II	BO-121: Plant life & Utilization II	<ul style="list-style-type: none"> • Collect the information of plant diversity. • Gain knowledge of general characters. • Give classification. • Study of lifecycle of Pteridophytes, Gymnosperms and Angiosperms.
5	F.Y.B.Sc	II	BO-122: Principles of Plant Science	<ul style="list-style-type: none"> • Learn the fundamental concepts of plant physiology. • Gain the knowledge of cell, cell organelles and cell cycle. • Learn the nature of genetic material. • Learn the DNA replication, DNA organization in chromosome.
6	F.Y.B.Sc	II	BO-123: Practical based on BO121 & BO122	<ul style="list-style-type: none"> • Correlate between practicals with theory to improve the understanding. • Participate actively in educational tour for the study of flora.
7	S.Y.B.Sc.	III	BO-231: Taxonomy of plant Angiosperms & Ecology	<ul style="list-style-type: none"> • Gain knowledge of taxonomy. • Identify, classify and give the name. • Give comparative account of various systems of classification. • Learn various families with reference to systematic position and description.

				<ul style="list-style-type: none"> ● Introduce ecology, diversity, methods of vegetation sampling and hotspots.
8	S.Y.B.Sc.	III	BO-232: Plant Physiology	<ul style="list-style-type: none"> ● Correlate between practicals with theory to improve the understanding. ● Participate actively in educational tour for the study of flora. ● Learn the plant related practical skills.
9	S.Y.B.Sc.	III	BO-233: Practical based on BO231 & BO232	<ul style="list-style-type: none"> ● Gain insights of research related methodology.
10	S.Y.B.Sc.	IV	BO-241: Plant Anatomy & Embryology	<ul style="list-style-type: none"> ● Learn about plant anatomy with epidermal tissue and mechanical tissue system. ● Gain knowledge of normal and abnormal secondary growth in Angiosperms. ● Gain knowledge of embryology with respect to micro and megasporogenesis. ● Gain information of flower pollination, fertilization and embryo development.
11	S.Y.B.Sc.	IV	BO-242 Plant Biotechnology	<ul style="list-style-type: none"> ● Learn the concepts of plant tissue culture techniques and single cell protein. ● Gain the knowledge of plant genetic engineering, genomics, proteomics and bioinformatics. ● Learn the bioremediation and biofuel technology. ● Use the techniques for the developments.
12	S.Y.B.Sc.	IV	BO-243: Practical based on BO241	<ul style="list-style-type: none"> ● Correlate between practicals with theory to

			&BO242	<p>improve the understanding.</p> <ul style="list-style-type: none"> • Participate actively in educational tour for the study of flora. • Learn the plant related practical skills. • Gain insights of research related methodology.
13	T.Y.B.Sc.	V	BO-351: Algae and Fungi	<ul style="list-style-type: none"> • Learn the knowledge of Lower Cryptogams. • Identify the Algal and Fungal thallus. • Study the life cycles of algae. • Identify the economic importance of algae. • Learn the symbiotic Association of Lichens, Mycorrhiza.
14	T.Y.B.Sc.	V	BO-352: Archegoniate	<ul style="list-style-type: none"> • Gain the knowledge of Archegoniate. • Identify the Bryophytes. • Collect the knowledge of range of thallus organization. • Study the life cycles of Bryophytes. • Compare different Bryophytes.
15	T.Y.B.Sc.	V	BO-353: Spermatophyta & Paleobotany	<ul style="list-style-type: none"> •Collect the information of origin of angiosperms. •Gain the knowledge of Speciation &Endemism. •Learn the classifications. •Gather the information of Herbaria and Botanical Gardens.
16	T.Y.B.Sc.	V	BO-354: Plant Ecology	<ul style="list-style-type: none"> •Learn the inter relationship between the living world and the environment. •Gain the knowledge of Biogeography. •Learn the population ecology and community ecology. •Study of biogeochemical cycles.

17	T.Y.B.Sc.	V	BO-355: Cell and Molecular Biology	<ul style="list-style-type: none"> •Define the terms in Cell Biology. •Collect the information on cell organelles. •Identify nucleus nucleolus and nucleolar organizer and nuclear envelope. •Learn about Chromosomes. •Gets idea of cell signalling.
18	T.Y.B.Sc.	V	BO-356: Genetics	<ul style="list-style-type: none"> •Define genetics and terms involved in it. •Gain the insights of Mendelism and Neo Mendelism (Gene Interaction). •Learn the multiple alleles, linkage, recombination and crossing over and mutation. •Solve the numerical and structural alterations of chromosomes. •Learn the sex linked chromosomes.
19	T.Y.B.Sc.	V	BO-357: Practical based on BO 351 &BO 352	<ul style="list-style-type: none"> •Correlate between practicals with theory to improve the understanding. •Participate actively in educational tour for the study of flora and characterization of bio different molecules.
20	T.Y.B.Sc.	V	BO-358: Practical based on BO353 & BO354	<ul style="list-style-type: none"> •Correlate between practicals with theory to improve the understanding. •Participate actively in educational tour. •Study of families Nymphaeaceae, Oleaceae, Amaranthaceae and Cannaceae. •Prepare Botanical keys by using vegetative and reproductive characters.
21	T.Y.B.Sc.	V	BO- 359: Practical based on BO355 & BO 356	<ul style="list-style-type: none"> •Correlate between practicals with theory to improve the understanding. •Cytological techniques-preparation of Fixatives, preparation of stains. •Isolation of nuclei and characterization. •Study of various stages of mitosis and meiosis. •Study of Chromosomes Morphology. •Isolation of plant genomic DNA by suitable method, Estimation of Plant DNA by DPA method.
22	T.Y.B.Sc.	V	SECI:BO-3510: Medicinal Botany	<ul style="list-style-type: none"> •Study of medicinal plants: History, Scope and Importance.

				<ul style="list-style-type: none"> •Define ions and Scope of Indigenous Medicinal Sciences. •Study of Ayurveda, Siddha and Unani. •Ethnobotany and Folk medicines. •Learn the conservation of endangered and endo medicinal plants. •Propagation of Medicinal Plants.
23	T.Y.B.Sc.	V	SECII:BO-3511: Plant Diversity & Human Health	<ul style="list-style-type: none"> •Study of plant biodiversity, agrobiodiversity and loss of biodiversity. •Study of Management of Plant Biodiversity and Conservation of Biodiversity. •Study of role of plants in relation to Human Welfare. •Prepare a list of plants.
24	T.Y.B.Sc.	VI	BO-361: Plant Physiology & Metabolism	<ul style="list-style-type: none"> • Learn minerals nutrition. • Gain the knowledge of mechanism of photosynthesis. •Learn the respiration, types of respiration, mechanism of aerobic respiration. • Learn stomatal biology. • Gain knowledge of translocation in phloem. • Learn plant growth regulators and Photomorphogenesis.
24	T.Y.B.Sc.	VI	BO-362: Biochemistry	<ul style="list-style-type: none"> • Learn the foundation of Biochemistry. • Define the terms involved in it. • Identify the importance of the solvent of life. • Define enzymes and learn nature of enzymes and co-factors. • Give classification and properties of enzymes. • Learn stomatal biology.
25	T.Y.B.Sc.	VI	BO-363: Plant Pathology	<ul style="list-style-type: none"> • Learn non-Parasitic Diseases. • Learn the fundamentals of Plant Pathology. • Learn the concepts of plant pathology. • Learn the defence mechanisms. • Identify and use methods of studying plant diseases. • Learn principles of plant diseases control.
26	T.Y.B.Sc.	VI	BO-364: Evolution & Population Genetics	<ul style="list-style-type: none"> • Learn the concept organic evolution. • Explain the evidence of evolution. • Learn the evolution through ages. • Study population genetics and evolution. • Learn the speciation an dis locating mechanisms.
27	T.Y.B.Sc.	VI	BO-365: Advanced	<ul style="list-style-type: none"> • Introduce biotechnology.

			Plant Biotechnology	<ul style="list-style-type: none"> • Study plant tissue culture. • Identify the techniques of genetic engineering and methods of gene transfer. • Learn Cryopreservation and Germplasm Conservation. • Correlate the biotechnology and society. • Learn about microbial biotechnology and transgenic plants.
28	T.Y.B.Sc.	VI	BO-366: Plant Breeding & Seed Technology	<ul style="list-style-type: none"> • Define and give scope and objectives of Plant breeding. • Learn the techniques and practices of plant. • Identify and use advanced techniques in plant breeding. • Give the introduction of Seed Technology. • Give the importance of Seed Technology.
29	T.Y.B.Sc.	VI	BO-367: Practical based on BO361 &BO362	<ul style="list-style-type: none"> • Correlation between practical's with theory to improve the understanding. • To organize educational tour for study of flora. • To develop plant related practical skills among the students. • To research related methodology in students. • Determination of plasmolysis, stomatal index, catalase activity, Photosynthesis and paper chromatography. • To demonstration physiological experiments.
30	T.Y.B.Sc.	VI	BO-368: Practical based on BO363 &BO 364	<ul style="list-style-type: none"> • Study the preparation of any one culture media and culture technique for isolation of plant pathogens. • Study of any two of fungal, bacterial, viral and mycoplasma diseases. • Prepare 1% Bordeaux mixture, 10% Bordeaux paste and Jivamruta. • Study of Koch's Postulates, Fungicides and Microbial pesticides. • Study of geological time scale, types of fossils and evidences of Organic Evolution. • Solve numerical problems.
31	T.Y.B.Sc.	VI	BO-369: Practical based on BO365 & BO 366	<ul style="list-style-type: none"> • Identify the different tissue culture techniques. • Study of the equipment's used in genetic engineering and study of GM plants. • Prepare plant based nano-particles. • Demonstrate wine production from different fruits.

				<ul style="list-style-type: none"> • Demonstrate Hybridization Techniques. • Study of pollen viability and floral morphology of crops. • Study of seed moisture, germination, purity and viability to seed. • Visit to a Plant Breeding Research Centre/Seed Industry.
32	T.Y.B.Sc.	VI	SECI:BO-3610: Nursery & Gardening Management	<ul style="list-style-type: none"> • Study the different nursery management techniques. • Study of garden management and Sowing/raising of seed sand seedlings. • Prepare saplings.
33	T.Y.B.Sc.	VI	SECI:BO-3611: Biofertilizers	<ul style="list-style-type: none"> • Study the general account of the microbes used as Biofertilizers. • Study of bacterial, algal, Azolla and fungal biofertilizers. • Study the compost and manuring w.r.t. recycling, methods, Vermicomposting and applications. • Learn the marketing skills.

DEPARTMENT OF PHYSICS

PROGRAM OUTCOME (PO)

PO -01	Programme Outcome of Physics deals with a wide variety of systems, certain theories are used by all physicists.
PO-02	The science stream endeavors the spirit of scientific inquiry and analytical thinking among the students.
PO-03	It also provides opportunities to learn experimental concepts related with life science.
PO-04	Acquired the knowledge with facts and figures related to various subjects in pure sciences such as Physics.
PO-05	Understood the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life.
PO-06	Each of these theories were experimentally tested numerous times and found to be an adequate approximation of nature.
PO-07	Physics uses mathematics to organize and formulate experimental results.
PO-08	From those results, precise or estimated solutions, quantitative results from which new predictions can be made and experimentally confirmed or negated.
PO-09	The results from physics experiments are numerical measurements.

PROGRAM SPECIFIC OUTCOME (PSO)

PSO -01	To foster scientific attitude, provide in-depth knowledge of scientific and technological concepts of Physics.
PSO-02	To enrich knowledge through problem solving, minor/major projects, seminars, tutorials, review of research articles/papers, participation in scientific events, study visits.
PSO-03	To familiarize with recent scientific and technological developments.
PSO-04	To create foundation for research and development in Physics.
PSO-05	To help students to learn various experimental and computational tools thereby developing analytical abilities to address real world problems.
PSO-06	To train students in skills related to research, education, industry, and market.
PSO-07	To help students to build-up a progressive and successful career in Physics.
PSO-08	Explain evaluate and effectively interpret factual clarions theories and assumptions for students' discipline (Physics).
PSO-09	Find access critically evaluate and ethically use of information.
PSO-10	Integrate quantitative and qualitative information to reach creative conclusions.
PSO-11	Apply concepts of sustainability to analyze challenges facing humans and earth's resources.
PSO-12	Familiarize with recent scientific and technological developments.
PSO-13	Train students in skills related to research, education, industry and market.
PSO-14	Help student to build-up a progressive and successful career in physics.

COURSE OUTCOME (CO)

SN	Class	Sem	Subject With Code	COURSE OUTCOME
1	F.Y.B.Sc	I	Mechanics and Properties of Matter PHY-111	<ul style="list-style-type: none"> • To understand the concept of motion displacement velocity Newtons laws of motion. • To understand Work and Energy, Work done with varying force. • To demonstrate Fluid mechanics, Bernoulli's Principle, viscosity. • To understand property of matter, stress and strain, Hook's law, young's modulus. solving the problem.
2	F.Y.B.Sc	I	Physics Principles and Application PHY-112	<ul style="list-style-type: none"> • To understand the general structure of atom, spectrum of hydrogen atom. • To understand the atomic excitation and LASER principles. • To understand the bonding mechanism and its different types. • To demonstrate an understanding of electromagnetic waves and its spectrum. • Understand the types and sources of electromagnetic waves and applications. • To demonstrate quantitative problem solving skills in all the topics covered.
3	F.Y.B.Sc	I	Physics Laboratory- IA PHY-113	<ul style="list-style-type: none"> • To train students in skills related to research, education, industry, and market. • To help students to build-up a progressive and successful career in Physics. • Study and use of various measuring instrument such as vernier caliper, micrometer screw Gauge, Travelling microscope. • Study of various practical related to research level such as LASER ,Spectrometer, Flat spiral spring with moment of inertia of disc, Coefficient of viscosity angle of prism.
4	F.Y.B.Sc	II	Heat and Thermodynamics PHY-121	<ul style="list-style-type: none"> • To understand thermodynamic state, Van Der Waal's equation with study of laws of thermodynamic.

				<ul style="list-style-type: none"> • To understand the concept of Heat transfer mechanism, Study the different types of heat engine such as Carnot's cycle, Diessel otto cycle ,refrigerator Principles, Air conditioner. • To study the thermometry, Gas filled thermometer, bimetallic thermometer, Platinum resistance thermometer, thermocouple.
5	F.Y.B.Sc	II	Electricity and Magnetism PHY-122	<ul style="list-style-type: none"> • To understand the concept of the electric force, electric field and electric potential for stationary charges. • Able to calculate electrostatic field and potential of charge distributions using Coulomb's law and Gauss's law. • To understand the dielectric phenomenon and effect of electric field on dielectric. • To Study magnetic field for steady currents using Biot-Savart and Ampere's Circuital laws. • To study magnetic materials and its properties. • Demonstrate quantitative problem solving skills in all the topics covered.
6	F.Y.B.Sc	II	Physics Laboratory-1B PHY-123	<ul style="list-style-type: none"> • Study of thermocouple, specific heat oh gravity, thermal conductivity of lee's method, Carnot's cycle. • Design charging and discharging of capacitor LR circuit, Kirchhoff's law, Diode characteristics, frequency of AC mains.
7	S.Y.B.Sc.	III	Mathematical Methods in Physics I PHY-231	<ul style="list-style-type: none"> • Understand the complex algebra useful in physics courses • Understand the concept of partial differentiation. • Understand the role of partial differential equations in physics • Understand vector algebra useful in mathematics and physics • Understand the singular points of differential equation.
8	S.Y.B.Sc.	III	Electronics II PHY-232	<ul style="list-style-type: none"> • Apply laws of electrical circuits to different circuits. • Understand the properties and

				<p>working of transistors.</p> <ul style="list-style-type: none"> • Understand the functions of operational amplifiers. • Design circuits using transistors and operational amplifiers. • Understand the Boolean algebra and logic circuits.
9	S.Y.B.Sc.	III	Physics Lab-2A PHY-233	<ul style="list-style-type: none"> • Study of BAR pendulum, Compound pendulum with instruments. • Use various instruments and equipment. Design experiments to test a hypothesis and/or determine the value of an unknown quantity.
10	S.Y.B.Sc.	IV	Oscillations, Waves and Sound PHY-241	<ul style="list-style-type: none"> • Understand the physics and mathematics of oscillations. • Solve the equations of motion for simple harmonic, damped, and forced oscillators. • Formulate these equations and understand their physical content in a variety of applications, Describe oscillatory motion with graphs and equations, and use these descriptions to solve problems of oscillatory motion. • Explain oscillation in terms of energy exchange, giving various examples. Solve problems relating to undamped, damped and force oscillators and superposition of oscillations. • Understand the mathematical description of travelling and standing waves. Recognize the one-dimensional classical wave equation and solutions to it.
11	S.Y.B.Sc.	IV	Optics PHY-242	<ul style="list-style-type: none"> • Acquire the basic concepts of wave optics. • Describe how light can constructively and destructively interfere. Explain why a light beam spreads out after passing through an aperture. • Summarize the polarization characteristics of electromagnetic waves. Appreciate the operation of many modern optical devices that utilize wave optics .

				<ul style="list-style-type: none"> • Understand optical phenomena such as polarization, birefringence, interference and diffraction in terms of the wave model. • Analyze simple examples of interference and diffraction phenomena. Be familiar with a range of equipment used in modern optics.
12	S.Y.B.Sc.	IV	Physics Lab-2B PHY-243	<ul style="list-style-type: none"> • Use various instruments and equipment. Design experiments to test a hypothesis and/or determine the value of an unknown quantity. • Investigate the theoretical background to an experiment. Set up experimental equipment to implement an experimental approach. • Analyze data, plot appropriate graphs and reach conclusions from your data analysis. • Work in a group to plan, implement and report on a project/experiment. Keep a well-maintained and instructive laboratory logbook.
13	T.Y.B.Sc.	V	Mathematical Method in Physics-II PHY-351	<ul style="list-style-type: none"> • Student will get information about various co-ordinate systems for solving physics • Student will be able to explain different problems between Newtonian & Einstein relativity. • Student can solve physics problems using differential equations. • Student will know the importance of Special function in physics & their solutions.
14	T.Y.B.Sc.	V	Electrodynamics PHY-352	<ul style="list-style-type: none"> • Student will be able to solve problems on electric intensity & potentials using law of electrostatics. • Student will explain generation of magnetic field by electric currents. • Student will interpret the meaning of the Maxwell's equations in magnetic & dielectric media.
15	T.Y.B.Sc.	V	Classical Mechanics PHY-353	<ul style="list-style-type: none"> • Student will use conservation of energy & linear as well as angular momentum to solve dynamic problems. • Student will be able to solve problems

				<p>related to Newton's laws, Kepler's laws & their applications in planetary motion.</p> <ul style="list-style-type: none"> • Student can explain types of scattering & get idea of canonical Transformation for solving problems in mechanics. • Student may apply Lagrangian & Hamiltonian equations to solve these problems.
16	T.Y.B.Sc.	V	Atomic and Molecular Physics PHY-354	<ul style="list-style-type: none"> • Student will explain various atomic models & their assumption as well as applications. • Student can get idea of different types of coupling. • Student will be able to develop Zeeman effect set up. • Student will know idea of rotational & vibrational spectra. • Student can explain Raman spectroscopy & their applications.
17	T.Y.B.Sc.	V	C-Programming & Computational Physics PHY-355	<ul style="list-style-type: none"> • Student will know the basic idea of algorithm, flowchart, syntax of C-programming language reserve words constant, variables, operators, arrays, pointers, functions etc. • Student will solve problems in Physics using different Computation methods such as Newton Rhason method, Bisection method, Trapezoidal rule, Simpson's rule etc. • Student will know the basic graphic commands to draw different figures. • Student can write C-program for any problem in physics.
18	T.Y.B.Sc.	V	Elements of Material Science PHY-356	<ul style="list-style-type: none"> • The student will explain electric, mechanical & thermal properties of materials. • Student will study defect in solid like line, surface & volume defects. • Student will know diffusion mechanism according to Fick's law. • Student studies phases of metals & explain CRSS(Critical Resolved Shear stress), Plastic deformation. • Student will know polymerization

				<p>process.</p> <ul style="list-style-type: none"> • Student will know about ceramic materials by addition & condensation methods. • For phase diagram student will know lever rule & Gibb's phase rule & phases of substance. • Student will know about smart materials along with their properties & applications.
	T.Y.B.Sc.	V	Energy Studies PHY-3510H	<ul style="list-style-type: none"> • Students become capable of conduction energy audits and give consultancy in that field. • Students can design different types of solar heaters for small domestic as well as large scale community level applications. • Students acquire skills to implement solar P-V systems at domestic levels as well as for office premises and educational institutions. Students become able to start their own enterprise in net metering. • Students get ideas and hence become self-employed in the field of design, production, commissioning and implementation of bio-mass energy sources , bio-gas plants, gasifiers, wind mills, hybrid systems etc. • Students can go for research in the fields of super-capacitors, battery technologies, fuel cells and material synthesis for implementation of these technologies. • Students become successful entrepreneurs in the energy field. Students strive to make the regions where they live.
19	T.Y.B.Sc.	V	Physics Work shop Skill PHY-3511K	<ul style="list-style-type: none"> • This course is to get exposure with various aspects of instruments and their usage through hands-on mode. • After completion of this course students will able to handle and test various instruments.
20	T.Y.B.Sc.	V	Physics Lab-3A	<ul style="list-style-type: none"> • Student will get knowledge by

			PHY-357	verifying law's of physics after performing experiment in the laboratory.
21	T.Y.B.Sc.	V	Physics Lab-3B PHY-358	<ul style="list-style-type: none"> • Student will get knowledge by verifying law's of physics after performing experiment in the laboratory.
22	T.Y.B.Sc.	V	Project-I PHY-359	<ul style="list-style-type: none"> • Student will get idea of research work by completing project in the laboratory and can draw the conclusion of the project.
23	T.Y.B.Sc.	VI	Solid State Physics PHY-361	<ul style="list-style-type: none"> • Student will know various types of crystal structures & the properties. • X-ray diffractions techniques for analysis of materials. • Theoretical knowledge about band of metals, insulator & semiconductors. • Student will know different magnetic materials, their characteristics& uses.
24	T.Y.B.Sc.	VI	Quantum Mechanics PHY-362	<ul style="list-style-type: none"> • Student will get basic knowledge of classical & quantum mechanics & comparison of two. • Get idea of wave function & its normalization. • Student can derive Schrodinger's time dependent & time-independent equations & can apply them to solve problems in physics & get appropriate solutions. • Student will get the idea of uncertainty principle & application of it. • Student will know operators in quantum mechanics & their properties to find expectation values. • Student can solve different properties of commutator operators. • Student will get idea of parity of functions. • Student can obtain eigen vale & eigen functions.
25	T.Y.B.Sc.	VI	Thermodynamics & Statistical Physics PHY-363	<ul style="list-style-type: none"> • Student will explain assumptions of Kinetic theory of gases. • Student will explain the physical significance of Maxwell's equations and get idea of statistical concepts for solving physics problems.

				<ul style="list-style-type: none"> • Student can calculate density states, probability using statistical laws. • Student will know different types of ensembles used in statistics. • Student will get idea of classical and quantum statistics. • Student will get knowledge of skill to use statistical physics method • Understand the Boltzmann distribution, Gibb's distribution, Fermi Dirac and Bose Einstein distribution to solve Physics problem.
26	T.Y.B.Sc.	VI	Nuclear Physics PHY-364	<ul style="list-style-type: none"> • Student will get idea of nuclear and their properties. • Student will explain radioactivity & its applications. • Students will know the fundamental properties of nuclear forces, particle accelerators and detectors. • Student will get information about energy generation using nuclear reactions and can calculate the parameters of nuclear reaction such as packing fraction. • Student will able to demonstrate A knowledge and broad understanding of nuclear physics.
27	T.Y.B.Sc.	VI	Electronics-II PHY-365	<ul style="list-style-type: none"> • Student will explain different types of diode and their applications. • Student will classify amplifiers and able to design different types of amplifiers. • Student will know applications of Op-Amp. Such as integrator, differentiator, adder, subtractions. • Student will explain block diagram and applications of timer 555. • Student can explain different types of power supply (723, 78XX, 79XX etc). • Design of low higher voltage power supplies. • Student can explain adder, subtractor, multiplexer, demultiplexer using logic gates,

				<ul style="list-style-type: none"> • Use of Flip-flops, counters and registers.
28	T.Y.B.Sc.	VI	Renewable Energy Sources-II PHY-366	<ul style="list-style-type: none"> • Students become capable of conduction energy audits and give consultancy in that field. • Students can design different types of solar heaters for small domestic as well as large scale community level applications. • Students acquire skills to implement solar P-V systems at domestic levels as well as for office premises and educational institutions. Students become able to start their own enterprise in net metering. • Students get ideas and hence become self-employed in the field of design, production, commissioning and implementation of bio-mass energy sources , bio-gas plants, gasifiers, wind mills, hybrid systems etc. • Students can go for research in the fields of super-capacitors, battery technologies, fuel cells and material synthesis for implementation of these technologies. • Students become successful entrepreneurs in the energy field. • Students strive to make the regions where they live and work self-sufficient in generating and fulfilling their own energy needs using different energy solutions.
29	T.Y.B.Sc.	VI	Solar PV System: Installation, Repairing and Maintenance PHY-3610	<ul style="list-style-type: none"> • In this skill oriented course, student will study basics of solar photovoltaic (PV)cells, modules, and system components. • Design and sizing of off-grid PV system for homes, apartments as well as commercial offices. • Understanding energy conversion

				<p>from sunlight to electricity, and working with solar conversion equipment.</p> <ul style="list-style-type: none"> • This Course will hands on experience needed to become self-employed. • Learn basics of light conversion in electricity. • Analyzed of MSEB electricity bill and design and sizing of off-grid PV system • Participants will learn about solar PV module and batteries used in solar PV plant.
30	T.Y.B.Sc.	VI	Instrumentation for Agriculture PHY-3611	<ul style="list-style-type: none"> • To make students familiar with the constructions and working principle of microprocessor • To make students aware about microprocessor • After successful completion of this course students are supposed to develop their own applications/ mini/ tiny projects using microcontroller.
31	T.Y.B.Sc.	VI	Physics Lab-4A PHY-367	<ul style="list-style-type: none"> • Student will get knowledge by verifying law's of physics after performing experiment in the laboratory. • Understand the thermodynamics & statistical physics experiments with details. • Understand the nuclear physics experiments with details.
32	T.Y.B.Sc.	VI	Physics Lab-4B PHY-368	<ul style="list-style-type: none"> • Student will get knowledge by verifying law's of physics after performing experiment in the laboratory. • Understand the basic and advanced electronics experiments with details. • Understand the acoustics and lasers experiments with details.
33	T.Y.B.Sc.	VI	Project-II PHY-369	<ul style="list-style-type: none"> • Student will get idea of research work by completing project in the laboratory and can draw the conclusion of the project.

DEPARTMENT OF ZOOLOGY

PROGRAM OUTCOME (PO)

PO -01	Acquired the knowledge with facts and figure related to zoology,
PO-02	Understood the basic concept of fundamental principles, and the scientific theory related to various scientific phenomenon and their relevancies in the day today life,
PO-03	Acquired the skill in handling scientific instruments , and planning and performing in laboratory experiment,
PO -04	The skills of observation and drawing logical inference from the scientific experiment,
PO-05	Analyzed the given scientific data critically and systematically and the ability to draw the objective and conclusion.
PO-06	Being able to think creatively (Divergently and convergent) to propose novel ideas in explaining facts a and the figure or providing new solution to the problem,
PO -07	Realized hoe development in any science subject help in the development in the others science subject and vice versa and how interdisciplinary approach help in providing better solution and new ideas for the sustainable development.
PO-08	Developed scientific outlook not only with respect to science subject but also in all aspects related to life
PO-09	Realised that knowledge of subject in other faculty such as humanities, performing arts , social science etc . can have great and effective influence which inspire in evolving in new scientific theory and invention,
PO -10	Embided ethical , moral and social values in personal and social life leading to highly cultured and civilized personality,
PO-11	Developed various communication skill such as reading listening and speaking etc. Which will help in expressing ideas and views clearly and effectively,
PO-11	Realised the pursuit of knowledge is a life long activity and in combination with untiring efforts and positive attitude and other necessary qualities leads towards the successful life,
PO-12	Developed flair by participating in various social and cultural activities voluntarily, in order to spread knowledge, creating awareness about the social evils, blind faith , etc

PROGRAM SPECIFIC OUTCOME (PSO)

PSO -01	Student get the knowledge of animal science from primitive to highly evolved animal group, that is breeding and management of the live stock animal such as cattle, sheep ,fishery ,lac, apiculture, etc.
PSO-02	It prepare the student for the carrier opportunities in the field of animal breeding, food production of animal, animal agriculture business, animal behavior and welfare.
PSO-03	The curriculum highlights the potential of various branches to become an entrepreneur.
PSO -04	With the help of practical the students get equipped with the skills related to the laboratory as well as with the field studies.
PSO-05	With the help of practical the students get equipped with the skills related to the laboratory as well as with the field studies.
PSO-06	Students developed interest and foundation for further studies in zoology.
PSO-07	Students learn about the conversation and sustainable use of biodiversity.
PSO-08	Subject knowledge help the student for taking up the successful carrier in zoology

COURSE OUTCOME (CO)

SN	Class	Sem	Subject With Code	COURSE OUTCOME
1	F.Y. B.Sc.	I	Animal diversity- I (ZO-111)	<ol style="list-style-type: none"> 1. The student will be able to understand classify and identify the diversity of animals. 2. The student understands the importance of classification of animals and classifies them effectively using the six levels of classification. 3. The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.
2			Paper-II ZO-112 Animal Ecology	<ol style="list-style-type: none"> 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. promote betterment of environment. 2.To understand anticipate, analyse and evaluate natural resource issues and act on a lifestyle that conserves nature. 3.The Learner understands and appreciates the

				<p>diversity of ecosystems and applies beyond the syllabi to understand the local lifestyle and problems of the community.</p> <p>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 components.</p> <p>5.The working in nature to save environment will help development of leadership skills to promote betterment of environment.</p>
3			Practical ZO-113	<p>1.student will be able to identify the lower nonchordate animals.</p> <p>2.student will learn how unicellular organism reproduce</p> <p>3.student will learn what are the impurities present in the water and how to estimate them</p>
4	S.Y.B.Sc	I	Animal Systematics and Diversity-III ZO-231	<p>1. The students will be able to understand, classify and identify the diversity of higher vertebrates.</p> <p>2. The students will be able to understand the complexity of higher vertebrates</p> <p>3. The students will be able to understand different life functions of higher vertebrates.</p> <p>4. The students will be able to understand the linkage among different groups of higher vertebrates.</p> <p>5. 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.</p>
5			Applied zoology-I ZO-234	<p>1. The learner understands the basics about beekeeping tools, equipment, and managing beehives.</p> <p>2. The learner understands the basic information about fishery, cultural and harvesting methods of fishes and fish preservation techniques.</p>
6			Practical ZO-233	<p>1.Student will get acquainted with the Animal group such as protochordate ,Pisces,Amphibia,</p> <p>2.Student will come to know the types of fins,Scales and tail in fish.</p> <p>3.Student will learn about rearing of silk worm</p> <p>4.Student will understand the different types of insect that damages the crop and how to control them.</p>
7	F.Y.B.S c.	II	Animal Diversity-II ZO-121	<p>1. The student will be able to understand classify and identify the diversity of animals.</p> <p>2. The student understands the importance of</p>

				<p>classification of animals and classifies them effectively using the six levels of classification.</p> <p>3. The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.</p>
8			Cell Biology ZO-122	<p>1.The learner understands and compares between the prokaryotic and eukaryotic system and extrapolates the life to the aspect of development.</p> <p>2.The dynamism of bio membranes indicates the dynamism of life. Its working mechanism and precision are responsible for our performance in life.</p> <p>3.The cellular mechanisms and its functioning depends on endo-membranes and structures. They are best studied with microscopy.</p>
9			Practical ZO-123	<p>1.student will be able to identify the Higher nonchordate animals.</p> <p>2.student get acquainted with the diversity of mouth parts in insect.</p> <p>3.student will come to know how to rear the lac insect a,earthworm honey bees for the production of lac,vermicompost and honey.</p>
10	S.Y. B.Sc.	II	Animal Systematics And Diversity-IV ZO-241	<p>1.The students will be able to understand the linkage among different groups of higher vertebrates.</p> <p>2. 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.</p>
11			Applied zoology- II ZO-242	<p>1. The learner understands the biology, varieties of silk silkworms and the basic techniques production.</p> <p>2. The learner understands the types of agricultural pests, Major insect pests of agricultural importance and Pest control practices.</p>
12			Practical ZY-243	<p>1. student will learn how to distinguish between poisonous and non-poisonous snake.</p> <p>2.student will learn the diversity of beak and feet in birds</p> <p>3.from the study of morphology and physiology of rat they will understand the human system.</p> <p>4.from the study of morphology and physiology of rat they will understand the human system.</p> <p>4.study of pisciculture help them to start their own business.</p>

DEPARTMENT OF MATHEMATICS

PROGRAM OUTCOME (PO)

PO-01	Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study
PO-02	Understand the basic concepts, fundamental principles and scientific theories related to various scientific phenomena and their relevance in the day-to-day life
PO-03	Ability to analyze a problem, identify and define the computing requirements, which may be appropriate to its solution
PO-04	Enhancing students' overall development and to equip them with mathematical modeling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment
PO-05	Understand applications of mathematics in different fields
PO-06	Ability to pursue advanced studies and research in pure and applied mathematical science. Be prepared for life-long learning

PROGRAM SPECIFIC OUTCOME (PSO)

PSO-01	Think in a critical manner
PSO-02	Be familiar with different areas of Mathematics
PSO-03	Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand
PSO-04	Formulate and develop mathematical arguments in a logical manner
PSO-05	Acquire good knowledge and understanding in advanced areas of mathematics and software like maxima, chosen by the student from the given courses
PSO-06	Be prepared to use Mathematics, not only in the discipline of Mathematics, but also in other disciplines and in their future endeavours
PSO-07	Identify suitable existing methods of analysis, if any, and assess his/her strengths and weaknesses in the context of the problem being considered

COURSE OUTCOME (CO)

Sr. No.	Class	Sem	Subject With Code	CO
1	F.Y.B.Sc.	I	Algebra (MT-111)	<p>After completion of this course, the student will be able to:</p> <ul style="list-style-type: none">➤ Define Basic concepts of Set, Relations and functions.➤ Use the division algorithm, Euclidian algorithm, in computations and proofs about the integers➤ Learn about some important results in the theory of numbers including the prime number theorem, describe the properties of prime numbers,➤ Show that every positive integer can be expressed as product of prime power in unique way➤ Write a formula for the number of positive integers less than n that are relatively prime to n➤ Define congruence and describe the properties of congruence➤ State Chinese Remainder Theorem, Fermat's and Wilson's theorem➤ Compute sums, products, quotients, conjugate, modulus, and argument of complex numbers ·➤ Apply De-Moivre's theorem to find the n^{th} roots of unity.

2	F.Y.B.Sc.	I	Calculus – I (MT-112)	<p>After completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> ➤ Describe the Algebraic and Order Properties of \mathbb{R} ➤ Understand absolute value function and its properties, triangle inequality and its consequences, neighborhood of a point on real line. ➤ Define of Upper bound, Lower bound, supremum, infimum of subsets of \mathbb{R}, completeness property of \mathbb{R}. ➤ Know Archimedean property and its consequences, the density theorem ➤ Learn to define sequence in terms of functions from \mathbb{R} to a subset of \mathbb{R}. ➤ Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence. ➤ Learn to check function is continuous understand the consequences of the intermediate value theorem for continuous functions.
3	F.Y.B.Sc.	I	MathematicsPractical (MT-113)	<p>This course will enable the students to:</p> <ul style="list-style-type: none"> ➤ Learn Maxima software. ➤ Learn to find graphs, roots and primes integer using maxima software ➤ Problem solve on algebra and calculus by using maxima software. ➤ Knowledge of application of mathematics
4	S.Y.B.Sc	III	MT-231- Calculus of Several Variables(23111)	<p>After completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> ➤ Learn conceptual variations while advancing from one variable to several variables in calculus. ➤ Understand Functions of two variables, Domain and Range, ➤ Graphs, Level Curves, Functions of Three or More Variables, Limits and Continuity. ➤ Applications of multivariable calculus tools in physics, economics, optimization, and understanding the architecture of curves and surfaces in plane and

				<p>space etc</p> <ul style="list-style-type: none"> ➤ Understand Partial Derivatives ➤ Learn Higher Derivatives, Clairaut's Theorem, Partial Differential Equations, Wave equation, Chain Rule, Homogeneous Functions, Euler's theorem. ➤ Recognize the major classification of PDEs and the qualitative differences between the classes of equations. ➤ Be competent in solving linear PDEs using classical solution methods ➤ Understand Extreme values of functions of two variables. ➤ Learn Necessary conditions for extreme values, Second Derivative Test, Lagrange Multipliers ➤ Inter-relationship amongst the line integral, double and triple integral formulations. ➤ Sketch curves in Cartesian and polar coordinate systems.
5	S.Y.B.Sc	III	MT-232(A):Numerical Methods & it's applications(23112A)	<p>After completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> ➤ Obtain numerical solutions of algebraic and transcendental equations. ➤ Learn about various interpolating and extrapolating methods. ➤ Define Basic concepts of operators Δ, E, ∇ ➤ Find the difference of polynomial ➤ Solve problems using Newton forward formula and Newton backward formula. ➤ Derive Newton forward formula and Newton backward interpolation formula. ➤ Apply Lagrange's Interpolation formula when difference interval are unequal ➤ Understood the concept of Numerical Differentiation (Derivatives using Newton's forward difference formula) ➤ Apply various numerical methods in real life problems ➤ Derive general quadrature formula

				<ul style="list-style-type: none"> ➤ Derive Trapezoidal rule, Simpson's 1/3 and 3/8 rules -using general quadrature formula ➤ Solve initial and boundary value problems in differential equations using numerical methods. ➤ Find the solution of ordinary differential equation of first by Taylor's Series method, Picard's method of successive ➤ approximations, Euler method, Modified Euler's methods and Runge-Kutta methods
6	S.Y.B.Sc	III	MT-233:Mathematics Practical(23113)	<p>This course will enable the students to:</p> <ul style="list-style-type: none"> ➤ Learn Maxima software. ➤ Problem solve on analytic geometry and calculus by using maxima software. ➤ Problem solving on geometry and calculus. ➤ Give the knowledge of geometry using maxima software.
7	F.Y.B.Sc	II	Analytical Geometry (MT-121)	<p>After completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> ➤ Describe the various forms of equation of a plane, straight line, Sphere, Cone and Cylinder. ➤ Find the angle between planes, Bisector planes, Perpendicular distance from a point to a plane, Image of a line on a plane, Intersection of two lines ➤ Define coplanar lines and illustrate ➤ Compute the angle between a line and a plane, length of perpendicular from a point to a line ➤ Define skew lines ➤ Calculate the Shortest distance between two skew line
8	F.Y.B.Sc	II	MT-122 (Calculus II)	<p>After completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> ➤ Assimilate the notions derivative of a function at a point ➤ Calculate the limit and examine the continuity of a function at a point. ➤ Apply derivative tests in optimization problems appearing in social sciences, physical sciences, life sciences and a host of other disciplines.

				<ul style="list-style-type: none"> ➤ Understand L' Hospital Rule and Successive Differentiation ➤ Understand the genesis of ordinary differential equations. ➤ Solve first order differential equations utilizing the standard techniques to Learn various techniques of getting exact solutions of solvable first order differential equations and linear differential equations. ➤ Grasp the concept of a general solution of a linear differential equation of an arbitrary order and also learn a few methods to obtain the general solution of such equations.
9	F.Y.B.Sc	II	Mathematics Practical (MT-123)	<p>This course will enable the students to:</p> <ul style="list-style-type: none"> ➤ Solves Problem on Calculus and analytical geometry ➤ Introduction to application of mathematics in real life. ➤ Learn to build logical concept.
10	S.Y.B.Sc.	IV	MT-241:Linear Algebra (24111)	<p>After completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> ➤ Solve linear systems (using matrices)by Gauss elimination and Gauss-Jordan elimination method ➤ Understand the concepts of vector spaces, subspaces, bases, dimension and their properties. ➤ Recognize the concepts of the term linear independence, linear dependence, basis, and dimension, and apply these concepts to various vector spaces and subspaces ➤ Understand about Row, Column and Null Space of a matrix, and Rank and nullity ➤ Discuss the linear transformations, properties and equality ➤ Understand the concepts of Kernel and range ➤ State Rank-Nullity theorem ➤ Use matrix algebra and the related matrices to linear transformations ➤ Relate matrices and linear transformations, compute eigen values and eigen vectors of linear transformations.

				<ul style="list-style-type: none"> ➤ Find the characteristic equation, eigen values and eigen vectors of a matrix. ➤ State Cayley- Hamilton theorem ➤ Learn basic Matrix Transformations in R^2 and R^3
11	S.Y.B.Sc.	IV	MT-242(B): Dynamical Systems(24112B)	<p>After completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> ➤ Students understand the concept of Diagonalisation(matrices with real and distinct eigen values) ➤ Students understand the concept of Logistic Population Model ➤ Students understand the concept First-Order Equations and Planar Linear Systems ➤ Able to find eigenvectors when eigen values are complex ➤ Able to find Exponential of a matrix ➤ Students improve problem solving skills. ➤ Students will cooperate when appropriate to help each other understand the concepts of dynamical systems and to learn how to function in a work.
12	S.Y.B.Sc.	IV	MT-243: Mathematics Practical(24113)	<p>This course will enable the students to:</p> <ul style="list-style-type: none"> ➤ To demonstrate used of interpolation method in numerical analysis. ➤ Use computational techniques and algebraic skills essential for the study of systems of Linear equations, matrix algebra, vector spaces, eigen values and eigenvectors, Orthogonality and Diagonalization

DEPARTMENT OF COMPUTER SCIENCE

PROGRAM OUTCOME (PO)

PO-01	Scientific knowledge: Apply the knowledge of mathematics, science, and computing to the solution of complex scientific problems.
PO-02	Problem analysis: Identify, formulate and analyze complex scientific problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and applied sciences
PO-03	Design/development of solutions: Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO-04	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO-05	Modern tools usage: Create, select, and apply appropriate techniques, resources, and modern computing and IT tools including prediction and modeling to complex scientific activities with an understanding of the limitations
PO-06	The software engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.
PO-07	Environment and sustainability: Understand the impact of the professional software engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO-08	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the scientific practice.
PO-09	Individual and team work: Function effectively as an individual and as a member or leader in diverse teams, and in multidisciplinary settings.
PO-10	Project management: Demonstrate knowledge understanding of the scientific and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PROGRAM SPECIFIC OUTCOME (PSO)

Programme Specific Outcomes (PSO)	
PSO-01	Demonstrate mastery of Computer Science in the following core knowledge areas <ul style="list-style-type: none"> o Data Structures and Programming Languages o Databases, Software Engineering and Development o Operating System Concepts and Architecture
PSO-02	Apply problem-solving skills and the knowledge of computer science to solve real world problems
PSO-03	Develop technical project reports and present them orally among the users.

COURSE OUTCOME (CO)

SN	Class	Sem	Subject With Code	COURSE OUTCOME
1	F.Y. B.Sc. (CS)	First	CS-111 Problem Solving using Computer and 'C' Programming	<ul style="list-style-type: none"> • To understand the concept of Problem solving • To understand steps involved in algorithm & program development • To understand the concept of Algorithm • Develop Algorithm for simple problem • Ability to implement algorithms in the 'C' language. • Develop modular programs using control structures and arrays in 'C'.
2	F.Y. B.Sc. (CS)	First	CS-112 Database Management Systems	<ul style="list-style-type: none"> • Describe the fundamental elements of relational database management systems • Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL. • Design ER-models to represent simple database application scenarios • Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data. • Improve the data base design by normalization.
3	F.Y. B.Sc. (CS)	First	CS-113 Practical course based on CS101 and CS102	<ul style="list-style-type: none"> • Able to devise pseudo code and flowchart for computational problems. • Understand how to write, debug and execute simple programs in C. • Create database tables in Postgres SQL. • Write and execute simple and nested queries.
4	F.Y. B.Sc. (CS)	Second	CS-121 Advanced 'C' Programming	<ul style="list-style-type: none"> • Develop advanced concepts of programming using C. • Develop modular programs using control structures, pointers, arrays, strings and structures. • Design and develop solutions to real world problems using C. • To develop structured programming approach.
5	F.Y. B.Sc. (CS)	Second	CS-122 Relational Database Management Systems	<ul style="list-style-type: none"> • Able to acquire knowledge of data security and its importance. • Design E-R Model for given requirements and convert the same into database tables. • Able to use database techniques such as SQL & PL/SQL. • Understand and able to implement concept of transactions. • Use advanced database Programming concepts.
6	F.Y. B.Sc. (CS)	Second	CS-123 Practical course based on CS201 and CS202	<ul style="list-style-type: none"> • Write debug and execute programs using advanced features in C. • To perform advanced database operations.

7	S.Y. B.Sc. (CS)	Third	CS 231 Data Structures and Algorithms – I	<ul style="list-style-type: none"> • Understand different methods of organizing large amount of data using data structure. • Able to choose appropriate data structure as applied to specified problem definition. • Understand various techniques for representation of the data in the real world
8	S.Y. B.Sc. (CS)	Third	CS 232 Software Engineering	<ul style="list-style-type: none"> • To design and conduct experiments, as well as to analyze and interpret data. • To identify, formulate, and solve engineering problems. • To analyze, design, verify, validate, implement, apply, and maintain software systems. • Able to understand different phases of SDLC.
9	S.Y. B.Sc. (CS)	Third	CS 233 Practical course on CS 231 and CS 232	<ul style="list-style-type: none"> • Students will be able to use linear and non-linear data structures like stacks, queues , linked list etc. • Student will be able to handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures.
10	S.Y. B.Sc. (CS)	Fourth	CS 241 Data Structures and Algorithms – II	<ul style="list-style-type: none"> • To compute the complexity of various algorithms. • To understand structure of trees, graphs, etc. • To develop efficient search techniques.
11	S.Y. B.Sc. (CS)	Fourth	CS 242 Computer Networks - I	<ul style="list-style-type: none"> • Understand basic computer network technology. • Understand and explain Data Communications System and its components. • Able to identify the different types of network topologies and protocols. • Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer.
12	S.Y. B.Sc. (CS)	Fourth	CS 243 Practical course on CS 241 and CS 242	<ul style="list-style-type: none"> • Students will be able to use linear and non-linear data structures like stacks, queues , linked list etc. • Student will be able to handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures.
13	T.Y. B.Sc. (CS)	Fifth	CS-351 Operating Systems	<ul style="list-style-type: none"> • To Study Processes and Thread Scheduling by operating system • Synchronization in process and threads by operating system • Memory management by operating system using with the help of various schemes
14	T.Y. B.Sc. (CS)	Fifth	CS-352 Computer Networks - II	<ul style="list-style-type: none"> • To understand the different protocols of Application layer. • Develop understanding of technical aspect of Multimedia Systems • Develop various Multimedia Systems applicable in real time. • Identify information security goals. • Understand, compare and apply cryptographic techniques for

				data security.
15	T.Y. B.Sc. (CS)	Fifth	CS-353 Web Technologies - I	<ul style="list-style-type: none"> To study basics of PHP To design logical code with std, PHP functions To understand how to develop dynamic and interactive Web Page
16	T.Y. B.Sc. (CS)	Fifth	CS-354 Foundations of Data Science	<ul style="list-style-type: none"> Perform Exploratory Data Analysis Obtain, clean/process, and transform data. Detect and diagnose common data issues, such as missing values, special values, outliers, inconsistencies, and localization. Demonstrate proficiency with statistical analysis of data. Present results using data visualization techniques. Prepare data for use with a variety of statistical methods and models and recognize how the quality of the data and the means of data collection may affect conclusions
17	T.Y. B.Sc. (CS)	Fifth	CS-355 Object Oriented Programmin g using Java - I	<ul style="list-style-type: none"> To understand the concept of classes, object, packages and Collections. To develop GUI based application
18	T.Y. B.Sc. (CS)	Fifth	CS-356 Theoretical Computer Science	<p>On completion of the course, student will be able to–</p> <ul style="list-style-type: none"> To understand the use of automata during language design. Relate various automata and Languages.
19	T.Y. B.Sc. (CS)	Fifth	CS-357 Practical Course based on CS - 351	<ul style="list-style-type: none"> To study Process synchronization Processes and Thread Scheduling by operating system Memory management by operating system using with the help of various schemes
20	T.Y. B.Sc. (CS)	Fifth	CS-358 Practical Course based on CS - 353 and CS - 354	<ul style="list-style-type: none"> To study how to develop dynamic and interactive Web Page To prepare data for use with a variety of statistical methods and recognize how the quality of the data may affect conclusions. To perform exploratory data analysis
21	T.Y. B.Sc. (CS)	Fifth	CS - 359 Practical Course based on CS - 355	<ul style="list-style-type: none"> Use an integrated development environment to write, compile, run, and test simple To develop object-oriented Java programs. Read and make elementary modifications to Java programs that solve real-worldproblems. Validate input in a Java program.

22	T.Y. B.Sc. (CS)	Fifth	CS-3510 Python Programmin g	<ul style="list-style-type: none"> • To develop logic for problem solving using python. • To determine the methods to create and develop Python programs by utilizing the data Structures like lists, dictionaries, tuples and sets. • To be familiar about the basic constructs of programming such as data, operations, conditions, loops, functions etc. • To write python programs and develop a small application project
23	T.Y. B.Sc. (CS)	Fifth	CS-3511 Blockchain Technology	<p>On completion of the course, student will be able to–</p> <ul style="list-style-type: none"> • Learn the fundamentals of Blockchain Technology. • Learn Blockchain programming • Basic knowledge of Smart Contracts and how they function.
24	T.Y. B.Sc. (CS)	Sixth	CS - 361 Operating Systems-II	<ul style="list-style-type: none"> • To study management of deadlocks and File System by operating system • Scheduling storage or disk for processes • Distributed Operating System and its architecture and the extended features in mobile OS.
25	T.Y. B.Sc. (CS)	Sixth	CS-362 Software Testing	<ul style="list-style-type: none"> • Understand various software testing methods and strategies. • Understand a variety of software metrics, and identify defects and managing those defects for improvement in quality for given software. • Understand design test cases and test plans, review reports of testing for qualitative software. • Understand latest testing methods used in the software industries.
26	T.Y. B.Sc. (CS)	Sixth	CS - 363 Web Technologies - II	<p>On completion of the course, student will be able to–</p> <ul style="list-style-type: none"> • Build dynamic website. • Using MVC based framework easy to design and handling the errors in dynamic website.
27	T.Y. B.Sc. (CS)	Sixth	CS - 364 Data Analytics	<ul style="list-style-type: none"> • Use appropriate models of analysis, assess the quality of input, and derive insight from results. • Analyze data, choose relevant models and algorithms for respective applications • Understand different data mining techniques like classification, prediction, clustering and association rule mining • Apply modeling and data analysis techniques to the solution of real world business problem
28	T.Y. B.Sc. (CS)	Sixth	CS- 365 Object Oriented Programmin	<ul style="list-style-type: none"> • To access open database through Java programs using Java Data Base Connectivity (JDBC) and develop the application. • Understand and create dynamic web pages, using Servlets

			g using Java – II	<ul style="list-style-type: none"> and JSP. Work with basics of framework to develop secure web applications.
29	T.Y. B.Sc. (CS)	Sixth	CS-366 Compiler Construction	<ul style="list-style-type: none"> To understand the process of scanning and parsing of source code. Learn the conversion code written in source language to machine language. To study tools like LEX and YACC.
30	T.Y. B.Sc. (CS)	Sixth	CS-367 Practical Course based on CS - 361	<ul style="list-style-type: none"> Management of deadlocks by operating system File System management Disk space management and scheduling for processes
31	T.Y. B.Sc. (CS)	Sixth	CS - 368 Practical Course based on CS - 363 and CS - 364	<ul style="list-style-type: none"> Build dynamic website. Using MVC based framework easy to design and handling the errors in dynamic website
32	T.Y. B.Sc. (CS)	Sixth	CS - 369 Practical Course based on CS - 365	<ul style="list-style-type: none"> To Learn database Programming using Java Understand and create dynamic web pages using Servlets and JSP. Work with basics of framework to develop secure web applications
33	T.Y. B.Sc. (CS)	Sixth	CS - 3610 Software Testing Tools	<ul style="list-style-type: none"> To understand various software testing methods and strategies. To understand a variety of software metrics and identify defects and managing those defects for improvement in quality for given software. To design test cases and test plans, review reports of testing for qualitative software. To understand latest testing tools used in the software industries.
34	T.Y. B.Sc. (CS)	Sixth	CS - 3611 Project	<ul style="list-style-type: none"> Project Planning, design, coding Test Plan, Black Box Testing or Data Validation Test Cases. White Box Testing or Functional Validation Test cases and results

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