THASSIM BEEVI ABDUL KADER COLLEGE FOR WOMEN

A Minority Institution Sponsored by Seethakathi Trust, Chennai.
Recognized by DBT under Star College Scheme, Ministry of Science and Technology, Govt of India.
An Autonomous Institution Affiliated to Alagappa University, Karaikudi.
Accredited by NAAC with "A" Grade [CGPA:3.16] & ISO 9001:2015 Certified Institution.
Recognized by UGC under 2(f) & 12 (B).Kilakarai – 623517, Ramanathapuram District, Tamil Nadu

POs and COs (Academic Year 2022-23)

Programme Educational Objectives (PEO):

PEO 1: To create and strengthen women leaders through disciplinary knowledge, skills and ethical sensitivity

PEO 2: To transform students as successful entrepreneurs to face the modern challenges

PEO 3: To nurture the students to invent, innovate and create solutions for current moral, ecological and economic issues

Programme outcomes (PO):

In completion of all under graduate and post graduate degree programs the students will be in enabling with

PO 1: Disciplinary Knowledge: Acquiring knowledge of different dimensions in the relatedarea of study and identifying the assumptions that frame thinking and actions

PO 2: Effective Communication: Ability to share thoughts, idea and applied skills ofcommunications in its various perspectives through LSRW

PO 3: Research Skill and Critical Thinking: Ability to plan execute and report the results of an experiment and to draw conclusions from evidences and the capability to apply analytical thought by following scientific approach to knowledge development

PO 4: Moral Ethical Awareness /Reasoning: Ability to enhance moral ethical values in connecting one's life about ethical issues from multiple perspectives, and use ethical practices in all works and appreciating environmental and sustainability issues; and adopting unbiased andtruthful actions in all expects of work

PO 5: Information Digital Literacy: Capability to use ICT in case of need and the ability

toaccess, evaluate and use the relevant information

PO 6: Problem Solving: Ability to apply their competence to solve non-familiar everydayproblems in real life situations

PO 7: Self Directed and Lifelong Learning: Acquire the ability to engage independent andlifelong learning through self-paced and self-director learning to meet out the change in life

GENERAL INTEREST COURSES (2022-23)

S.No.	Subject Code	Subject Name	Course Outcome
1.	IBES2	Environmental Studies	**CO1:** Understand the key concepts about the renewable and non-renewable resources of environment **CO2:** Appreciate the concept structure and ecological pyramids of ecosystem **CO3:** Reflect critically about the different Protection act of biodiversity and its conservation **CO4:** Create awareness about the environmental pollutions and its management **CO5:** Understand the natural resource exhaustion, related health issues in human
2.	HBHR3	Human Rights	**CO1:** Help to get basic knowledge relating the meaning and concept of human rights **CO2:** Know that protective laws are made for the betterment of weaker section of society **CO3:** Have knowledge on National and State Human Rights Commission **CO4:** Will know the rights of women children dalits etc
3.	HBLVE4	Values and ethics	**CO1:** Understand the concept of major religions in India **CO2:** The values and ethics to tackle the fundamental question of human life **CO3:** Understand the intention and help one's own self **CO4:** Know what is morally right **CO5:** Right way to treat fellow human

4.	GBWS5	Women studies	**CO1:** Promote and disseminate knowledge about women's role in society and economic trends which affect women's lives and status **CO2:** Assimilate analytical understanding of the significance of gender (relations) and foster study of conduits and configurations of power causes context and consequences of women's subordination **CO3:** Know the rights and laws for protection of women **CO4:** Know women's psychological reactions to puberty, marriage, motherhood, abortion, birth control, menopause etc.
5.	GMESX3	Skills for employability development	**CO1:** Able to understand the way of success through bring some attitude changes Among them **CO2:** Know how to build a positive personality **CO3:** Will to prepare resume and obtain interview and group discussion skills **CO4:** Prepare themselves for quantitative analytical aptitude test.

Department of Tamil
2022-23
Course out comes

S.NO	Subject Code	Subject Title	Course out comes
1	IBLT11	இக்கால இலக்கியமும் சிறுகதையும்	CO1. புத்திலக்கிய மரபுகளைப் புரிந்து கொண்டு வாழ்வியல் நோக்கில் செயல்படும் வழிமுறைகளைத் தெரிந்து கொள்கின்றனர். சிறுசேமிப்பு, தன்னம்பிக்கை, ஆரோக்கியம், உழைப்பு, தன்மானம், உண்மை, அன்பு, பணிவு போன்றவற்றை இதன்வழி கற்றுக் கொள்கின்றனர். CO2. இலக்கிய வரலாற்றின் வழி மொழியின் வளர்ச்சியைக் காலந்தோறும் மாறிவரும் இலக்கியங்களின் பல்வேறு வகையால் அறிந்து கொள்வர். CO3. சமுதாயத்தில் நிகழக்கூடிய பிரச்சனைகளை எதிர்கொள்ளும் திறன் பெறுகின்றனர். CO4. சொல்லழகு பொருளழகு முதலியவற்றை வரையறுத்துக் கூறுவது அணி என உணர்ந்து கொள்கின்றனர். கற்பவர்களுக்கு இன்பம் பயக்கும். சொல்லப் புகுந்த கருத்து தெளிவாகப் புலப்படும். தமிழ் இலக்கியச் செழிப்புக்கு மேலும் வலுவூட்டுவது அணி என்பதையும் பிழையின்றி பேசவும் எழுதவும் கற்றுக் கொள்கின்றனர். CO5. சிறுகதை மற்றும் கவிதைகளைப் படைக்கும் படைப்பாளிகளாகின்றனர். இலக்கியங்களின் வழி கவிதைகள் புனைவதைக் கற்றுக் கொண்டும் தனித்திறனுடனும் தன்னம்பிக்கையோடும் வாழக் கற்றுக் கொள்கின்றனர்.
2	IBLT21	காப்பிய இலக்கியமும் புதினமும்	CO1. தமிழ் இலக்கியங்கள் அன்று முதல் இன்று வரை பெற்று வரும் சிறப்பை உணர்ந்து வாழ்வியல் நெறிமுறைகளைக் கற்றுக் கொள்ளும் திறன் உடையவர்களாகின்றனர். CO2. காப்பியங்களின் வழி நபிகள் நாயகத்தின் போதனைகளை அறிந்து கொள்கின்றனர். மானிடரின் மங்கல நிகழ்வான திருமணத்தை ஆன்மீக நிலையிலும் நிகழ்த்தி மகிழும் வழக்கம் பல்வேறு சமயங்களிலும் உண்டென அறிகின்றனர்.

			4 CO3. மக்களிடையே அருகிவரும் பண்பாட்டு உணர்ச்சியை மீண்டும் தலையெடுத்து வளரச் செய்ய வேண்டும். அவ்வுணர்ச்சியை இளம் உள்ளங்களில் விதைப்பது சாலப் பயன் தரும் என்ற எண்ணத்தை உணர்ந்துகொள்கின்றனர். CO4. தமிழ்மொழிப் பயிற்சி பெறும் விதமாக எழுத்து, சொல், யாப்பு என இலக்கணத்தைக் கற்றுக் கொள்கின்றனர். CO5. காப்பிய இலக்கியக் கல்வியை எளிமையிலிருந்து ஆழமாக்கிக் கற்பிக்கும் முறையைக் கற்றுக் கொள்கின்றனர்.
3	IBLT31	இடைக்கால இலக்கியமும் ஊடகவியலும்	CO1.பக்தி இலக்கியங்கள் வாயிலாக ஆன்மீகச் சிந்தனைகளையும் ஒழுக்கநெறிகளையும் கற்றுக் கொள்கின்றனர். CO2. சமய இலக்கியங்களைக் கற்பதன் மூலம் சமூக ஒற்றுமையையும் மதநல்லிணக்கத்தையும் அறிந்து கொள்கின்றனர். **6** CO3. இதழியல் படிப்பதன் மூலம் மக்கள் தகவல் தொடர்பு பற்றித் தெரிந்து கொள்வதோடு சமூகப் பண்பாடு மற்றும் வரலாற்றுப் பின்னணியையும் தெரிந்து கொள்கின்றனர். CO4. இலக்கணப் படைப்பினை அறிந்து வாசிப்பு நுட்பங்களோடு மொழியைப் பிழையின்றி பேசவும் எழுதவும் கற்றுக் கொள்கின்றனர். CO5. தமிழ் இலக்கிய வரலாற்றினை அறிந்து கொண்டு இலக்கிய வளர்ச்சியில் பரந்துபட்ட நிலையைக் கொண்டு அரசுப் பொதுத்தேர்வு எழுதும் திறனைப் பெறுகின்றனர்.

4	IBLT41	பழந்தமிழ் இலக்கியமும் நாட்டுப்புறவியலும்	CO1.தமிழ் இலக்கியங்களின் வாயிலாக பண்டைக்கால மக்களின் வாழ்வியல் விழுமியங்களைத் தெரிந்து கொள்கின்றனர். CO2.பரந்துபட்ட தமிழ் இலக்கிய வரலாற்றினை உணர்ந்து அறவழியில் வாழும் வாழ்வியல் சிந்தனைகளைக் கற்றுக்கொள்கின்றனர். 8 CO3.நாட்டுப்புற மக்களின் வரலாறு பண்பாடு நாகரிகம் அறிந்து கொள்வதோடு மானுட மதிப்புகளைப் பற்றிக் கற்றுக் கொண்டு சமூகச் சிக்கல்களை எதிர்கொள்ளும் திறன் பெறுகின்றனர்.. CO4.மொழி வளர்ச்சிக்குரிய இலக்கணத்தின் பயன் அறிந்து மொழியினைப் பிழையின்றி பேசவும் எழுதவும் கற்கவும், தமிழ் இலக்கணத்தின் இன்றியமையாமையையும் உணர்ந்து கொள்கின்றனர். CO5.நடைமுறை வாழ்வியலுக்குத் தேவைப்படும் படைப்புத் திறனை மேம்படுத்துவதொடு வாசிப்பு நுட்பங்களையும் அறிந்து ஆங்கிலத்தை தமிழாக்கம் செய்யவும் பயிற்சி பெறுகின்றனர்.
5	HBNM3TA	சிறப்புத் தமிழ்-I	CO1. தமிழின் சிறப்பை உணர்வதோடு தமிழ் மொழியின் வளர்ச்சி நிலைகளைப் பற்றி அறிந்து கொள்கின்றனர். CO2. உலகப்பொதுமறையின் வழி மாணவிகள் சமூகமாந்தரிடம் நடந்து கொள்ளக் கூடிய பொதுப்பண்புகளை வளர்த்துக் கொள்கின்றனர். CO3. புதுக்கவிதைகளை கற்றுகொள்வதன் மூலம் வாழ்வியலின் தத்துவங்களை அறிந்து கொள்வதோடு சமூகச் சூழலில் ஏற்படக்கூடிய சிக்கல்களை எதிர்கொள்ளத் துணிகின்றனர். CO4. தகவல் தொடர்புச் சாதனங்கள் தமிழ் வளர்ச்சிக்குப் பயன்படுவதை அறிந்து கொள்கின்றனர். CO5. மாணவர்கள் மொழித்திறன் பயிற்சியும் படைப்பாற்றல் திறனும் பெறுகின்றனர்

6	HBNM4TA	சிறப்புத் தமிழ்-II	CO1. நடைமுறை வாழ்வியலுக்குத் தேவையான கல்வியின் சிறப்பினை அறிந்து கொள்வதோடு தங்கள் வாழ்க்கைக்குத் தேவையான ஒழுக்க நெறிகளையும் கற்றுக் கொள்கின்றனர். CO2. இலக்கியப் படைப்பாளனாக உருவாகக் கூடிய முயற்சியை மேற்கொள்கின்றனர். CO3. வாழ்வியல் விழுமியங்களை உணர்ந்து சமூகப் பிரச்சனைகளை எதிர்கொள்ளும் திறனை வளர்த்து கொள்கின்றனர். CO4. சமூகத்தில் நிகழக் கூடிய எதிர்வினைகளை நேர்கொள்ளும் திறனைப் பெறுகின்றனர். CO5. இலக்கணங்களைக் கற்றுக் கொள்வதன் மூலம் தமிழ் மொழியை சொற்பிழையின்றி எழுதக் கற்றுக் கொள்கின்றனர். 12
7	HBNM3TE	அடிப்படைத் தமிழ்-I	CO1. தமிழ் எழுத்துகளை உச்சரிக்கும் முறை பற்றிக் கற்றுக் கொள்கின்றனர். CO2. எழுத்துகளைக் கொண்டு சொற்களை உருவாக்கும் திறன் பெறுகின்றனர். CO3. சொற்களை உச்சரிப்பதன் வாயிலாக எழுத்துகளுக்குள்ளான வேறுபாடுகளையும் அவை தருகின்ற பொருளையும் அறிந்து கொள்கின்றனர். CO4. மொழியைக் கொண்டு சொற்கள் அமைக்கும் தனித்திறனை வளர்த்துக் கொள்கின்றனர். CO5. மொழியைப் பிழையின்றி பேசவும் எழுதவும் மொழித்திறனை மேம்படுத்தவும் தெரிந்து கொள்கின்றனர்.

8	HBNM4TE	அடிப்படைத் தமிழ்-II	CO1. தமிழ் மொழி கூறும் வாழ்வியல் நெறிமுறைகளைக் கற்றுக் கொள்வதோடு ஆளுமைத் திறனை வளர்த்துக்கொள்கின்றனர். CO2. மொழியின் தொன்மை, இலக்கியங்கள் வாயிலாக மொழி வளர்ச்சியையும் தனித்திறனையும் கற்றுக் கொள்கின்றனர் CO3. வாசிப்பு நுட்பங்களை அறிந்து கொண்டு படைப்பாளுமைத் திறனைப் பெற்று தமிழ் இலக்கணத்தின் இன்றியமையாமையை உணர்கின்றனர். CO4. தமிழைப் பிழையின்றி பேசவும் எழுதவும் கற்றுக் கொள்கின்றனர். CO5. பிற மொழிச் சொற்களை தமிழ் மொழிக்கு மாற்றி எழுதும் திறன் பெறுகின்றனர்.

Department of Arabic & Islamic Studies

Academic Year 2022-2023

Course Outcome

2.6.1. Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Environment and Sustainability, Human Values into the Curriculum

Professional Ethics:

S.No	*Course Code*	*Course Name*	*Course Outcome*
1	IBARC11	Arabic for Beginners I	CO 1: Identify various types Arabic letters & Arabic vowels CO 2: Classify the vocabularies and pronounce with proper spelling & stress CO 3: Understand the unique patterns of nouns and construct (conjugate) the same CO 4: Elaborate the difference between the phrase constructions of English & Arabic CO 5: Perceive the skills of reading and writing
2	IBARC12	Arabic Prose	CO 1: Recall Arabic vocabularies and list out according to its category CO 2: Sort out the syntax and translate Arabic sentences into English CO 3: Analyze sentences grammatically CO 4: Assess the Arabic sentences CO 5: Compile own lexicon and develop LSRW skills
3	IBARC21	Arabic for Beginners I	CO 1: Memorize and list new vocabularies CO 2: Understand the special syntax features of Modern Standard Arabic CO 3: Translate simple sentences from Arabic to English and vice versa CO 4: Construct simple sentences by applying grammatical rules CO 5: Perceive the skills of reading and writing

4	IBARC22	Arabic Grammar I	CO 1: Tell new vocabularies and explain the grammar of Arabic language CO 2: Apply the grammatical concepts CO 3: Analyze the phrase construction of English and Arabic CO 4: Visualize the translation of simple sentences from Arabic to English and vice versa CO 5: Assess & understand the grammatical concepts through classroom conversation
5	IBARC31	Applied Arabic Grammar I	CO 1: Recall unique patterns of Arabic verbs and conjugation of the same CO 2: Understand the number system of Arabic language CO 3: Translate and construct simple sentences by applying grammatical rules CO 4: Apply and analyze the grammatical concepts CO 5: Perceive the skills of reading and writing
6	IBARC41	Applied Arabic Grammar II	CO 1: Identify and understand the unique patterns of weak and doubled verbs CO 2: Construct (conjugate) the weak and doubled verbs CO 3: Develop communication skill CO 4: Classify the verbs based on the nature of letters CO 5: Perceive the skills of reading and writing
7	HBARC511	Advanced Arabic Grammar	CO 1: Describe parts of speech in Arabic CO 2: Get a wide knowledge on unique types of Arabic nounsCO 3: Develop communication skills through conversation CO 4**:** Differentiate between the phrase constructions of English & Arabic
8	HBARC52	Modern Arabic Prose I	CO 1: Memorize Modern Standard Arabic Vocabularies and group according to its category CO 2: Understand the syntax and translate Arabic sentences into English CO 3: Analyse sentences grammatically CO 4: Compile own lexicon and develop LSRW skills
9	HBARE5C	Classical Arabic Prose III	CO 1: Learn and memorize the classical vocabulary of Quran CO 2: Infer the meaning of chapters of Quran CO 3: Demonstrate the importance of being fair, equitable and just to all people CO 4: Relate the themes of the Quran chapters

			CO 5: Evaluate and reframe their life style with the guidance of Quran CO 6:Develop moral values and noble character
10	HBARE51D	Modern Arabic Poetry	CO 1: Memorize the Poems CO 2: Explain and translate the poems CO 3: Interpret the meaning of poems in their own Language CO 4: Compare the various genres of Arabic Poetry with that of English Poetry CO 5: Criticize the themes of Arabic Poems
11	HBARE54P	Arabic for Interaction III(Practical)	CO 1: Listen and memorize the vocabulary related to survival needs CO 2: Understand style of spoken Arabic CO 3: Practice situational conversations CO 4: Develop communication Skills
12	HBARE65	Translation Skills in Arabic	CO 1: Describe the theories of Translation CO 2: Understand the Techniques and strategies of Translation CO 3: Develop necessary skill to employ different translation methods CO 4: Able to compare between the sentence structures of Source and Target languages
13	HBARE61A	Indo Arab Relation	CO 1: Describes the relationship between Sarandib and Arabian Peninsula CO 2: Review the reign of Arwi CO 3: Sketch out the trade relationships which boosted up the economy of both countries CO 4: Relate the present scenario of Indo- Arab Culture with the Past CO 5: Contrive a research work in the studied Area CO 6: Assess the significance of healthy relationship between countries

1	IBARS141	History of Prophet Ibrahim (AS)-I	CO 1: Translate the Arabic language to enrich the history of early Prophets of Islam CO 2: Identify the faith of Islam through Prophetic history CO 3: Discover the historical and cultural background of Islam

			CO 4: Elaborate the development of Islam during the early life of Prophet CO 5: Evaluate the struggles of Prophet with current scenario
2	IBARA23	Qissathu Ashabil Kahf	CO 1: Summarize the seerah of Surah Kahf CO 2: Teach holistic histories CO 3: Analyze the faith and struggle of companions of cave CO 4: Estimate a connection between belief and behaviour and mannerisms CO 5: Measure the link between the events therein, the current events and reforms in our society
3	IBARS241	History of Prophet Ibrahim (AS)-II	CO 1: Explain the biography of Prophets CO 2: Identify the influence of Prophet's personality for the change in history and culturalbackground of Arabia CO 3: Examine the importance of major events in Prophet's life that led to the rise and spread ofIslam CO 4: Discover the prophet's faith, sacrifices, struggles and beliefs CO 5: Establish the connection between belief, behavior and mannerisms
4	IBARA33	Seerah of Prophet Muhammad (PBUH)	CO 1: Illustrate the biography of Prophet Muhammad PBUH and his guidelines CO 2: Understand the historical and cultural background of Islam CO 3: Plan to learn life skills and develop human identity. CO 4: Criticize the pre Islamic period and evaluate the development of Islam during the earlylife of Prophet Muhammad PBUH CO 5: Develop leadership skills and gain the knowledge of political, economic and socialreforms under the administration of Prophet Muhammad PBUH
5	IBARC42	Uloomul Quran	CO 1: Memorize the names of chapters of Quran and describe the kinds of wahy CO 2: Classify and explain the Makki and Madhani verses CO 3: Apply the method of recitation of Al Quran by Sahabah Al Kiram CO 4: Analyse the type of verses CO 5: Discriminate between the Classical Arabic & Modern Standard Arabic
6	IBARC53	Hadeeth	CO 1: Memorize, recite and quote the hadith for different situations CO 2: Categorize between the forms of nominal sentences through Hadith CO 3: Take part in the social morality with the teachings of Hadith CO 4: Discuss about the morality of Hadith CO 5: Assess the teachings of Hadith

7	IBARE5A	Seerah from Quran	CO 1: Illustrate the biography of Prophet Muhammad PBUH and his guidelines CO 2: Understand the historical and cultural background of Islam CO 3: Plan to learn life skills and develop human identity. CO 4: Criticize the pre Islamic period and evaluate the development of Islam during the earlylife of Prophet Muhammad PBUH CO 5: Develop leadership skills and gain the knowledge of political, economic and social reforms under the administration of Prophet Muhammad PBUH
8	IBARE5C	Tafseerul Quran	CO 1: Understand the style of Classical Arabic i.e, the language of Quran CO 2: Learn vocabularies of Quran CO 3: Recite the Quran with proper pronunciation CO 4: Understand the syntax of Classical Arabic CO 5: Discriminate between the Classical Arabic & Modern Standard Arabic
9	IBARC61	Family Ethics & Management	CO 1: Recognize the purpose of life and family system CO 2: Apply the importance of values, goals and standards in the management of family CO 3:Analyze the management skills to resources especially time, money and energy CO 4: Verify the family issues and develop decision making ability CO 5: Construct a happy and healthy family
10	HBARC53	Hadeeth I	CO 1: Memorize, recite and quote the hadith for different situations CO 2: Differentiate between the forms of Nominal sentences through Hadith CO 3: Practice and Relate the social morality with the teachings of Hadith CO 4**:** Able to persuade with the teachings of Hadith
11	HBARC62	Hadeeth II	CO 1: Recognize the Syntax of Hadeeth CO 2: Understand the grammatical concepts while infer the meaning of Hadeeth CO 3: Illustrate the Hadeeth grammatically and literally CO 4: Develop reflective thinking so that the students can relate the prior knowledge to the new
12	HBARE5A	Seerah from Quran	CO 1: Describe the stories of Quran and quote examples

			CO 2: Understand the realities behind stories of Quran CO 3: Distinguish the good deeds and bad deeds distinguish the good deeds and bad deeds CO 4: Develop noble character by analysing the stories of Holy Quran and illustrate the same to other
13	HBARE5B	I'jazul Quran	CO 1: Recognize the beauty and distinction of Holy Quran CO 2: Understand the Miraculous nature of Holy Quran CO 3: Examine the factors that causes the protection of Quraan Shareef to date CO 4: Illustrate the miraculous effects of the Quran Shareef on world
14	HBARC61	Family Ethics & management	CO 1: Recognize the purpose of life and family system CO 2: Understand the importance of values, goals and standards in the Management of family O 3: Apply the management skills to resources especially time, money and energy CO 4: Analyse the family issues and develop decision making ability CO 5: Able to construct a happy and healthy family CO 6: Determine work simplification techniques

DEPARMENT OF HINDI

2022-2023

2.6.1 Course Outcomes

S NO	SUBJECT CODE	COURSE	Course Outcomes
1.	IBLH11	General Hindi I	After successful completion of this course, student will be able to **CO1:** Find the Hindi alphabet and outline in Hindi text **CO2:** Practice the grammatical sentence in day today life. **CO3:** Identify the Hindi numerals and other words. **CO4:** Improve the conversation in different situation. **CO5:** Develop comprehension skill through simple passage.
2.	IBLH21	General Hindi II	After successful completion of this course, student will be able to **CO1:** Find the Hindi words to construct grammatically correct sentences. **CO2:** Apply Hindi grammar for better communication **CO3:** Identify the poem in their own style **CO4:** Focus to formal and informal letter **CO5:** Conclude the basic concepts of the translation
3.	IBLH31	General Hindi III	**CO1:** Recall Hindi words and illustrate the lessons **CO2:** Illustrate the various aspects of Hindi prose **CO3:** Make use of hints development **CO4:** Discover the growth of modern poetry to understand the Poem of Medieval Poets Kabir & Tulsi **CO5:** Create the story in their own style
4.	IBLH41	General Hindi IV	**CO1:** Define the basic Hindi grammar and practice to use different types of tenses in Hindi language. **CO2:** Demonstrate Hindi writing skills **CO3:** Focus on conversation skill in Hindi **CO4:** Discuses one act play, characters and writers **CO5:** Develop the knowledge of tourism about certain (famous) places

Department of English
Academic Year: 2022 – 23 (Odd & Even)
Course Outcomes

I BA English –2022 Batch
ODD Semester

S No	Subject Code	Subject Name	Course Outcomes
1.	IBLEI12	Language II – Language through Literature I – Level I	**CO 1:** Read and interpret poetry **CO 2:** Develop speaking skill **CO 3:** Organize thoughts in writing **CO 4:** Improve reading skill **CO 5:** Deduct structure from text
2.	IBLEII12	Language II – Language through Literature I – Level II	**CO 1:** Recognize correct pronunciation **CO 2:** Develop reading skill **CO 3:** Organize the ideas into a coherent paragraph **CO 4:** Construct meaningful sentences **CO 5:** Deduct the grammatical structures from the text
3.	IBEGC11	Core I - British Literature [from 14th century to 18th century]	**CO 1:** Acquire knowledge of the early British writers from 14th to 18th Century **CO 2:** Analyse and interpret the language of the British writers **CO 3:** Interpret the different genres employed during the period and the contribution of the Writers prescribed for the study **CO 4:** Significantly point out the religious and cultural temperament of the period **CO 5:** Develop skills to read, understand and appreciate literary text of the early British Writers
4.	IBEGC12	Core II - Grammar and Writing Skills	**CO 1**: Recognize the grammar skills involved in writing sentences and paragraphs **CO 2**: Analyse and self–correct when using targeted grammatical structures **CO 3**: Compare and contrast targeted grammatical structures meaningfully and appropriately in oral and written production **CO 4**: Identify and understand the meaning of targeted grammatical structures in written and spoken form **CO 5**: Diagnose and demonstrate grammar structures in real life context
5.	IBEGA13	AECC I - Social History of England	**CO 1:** Trace the historical and political background of England until Modern Age

			CO 2: Identify the religious changes prevailed in England **CO 3:** Examine the impact of various revolutions which shaped the literature of England **CO 4:** Elucidate the diversity of human nature in connection with the society, politics and literature **CO 5:** Evolve the knowledge on English society and literature
6.	IBEGS14	SEC I - Presentation Skills / Online Internship[#]	**CO 1:** Understand the concepts of business presentation **CO 2:** Overcome nervousness for presentation **CO 3**: Assess their own speaking and presentation skills **CO 4:** Distinguish presentation weak spots and areas for improvement **CO 5:** Become a Confident and effective speaker /presenter

I BA English - 2022 Batch
EVEN Semester

S No	Subject Code	Subject Name	Course Outcomes
1.	IBLEI12	Language II – Language through Literature II – Level I	**CO 1**: Remember the meaning of words **CO 2**: Demonstrate formal and informal speech **CO 3**: List out ideas in writing **CO 4**: Produce own script and design skit for performance **CO 5**: Determine adverbs and preposition from text
2.	IBLEII12	Language II – Language through Literature II – Level II	**CO 1:** Identify the meaning of words **CO 2:** Apply the reading strategies **CO 3:** Distinguish compound words and clipped words **CO 4:** Develop writing skill **CO 5:** Determine the grammatical structures from the text
3.	IBEGC21	Core III - British Literature [from 19th century to 21st century]	**CO 1:** Explain the knowledge of growth and development of British Literature **CO 2:** Identify the specific features of particular periods **CO 3:** Analyze the themes, structure and style adopted by British writers **CO 4:** Justify the impact of historical events that shaped literature **CO 5:** Develop and compare the works of historical movements in British Literature
4.	IBEGC22	Core IV - Indian Writing in English / NPTEL$^{\odot}$	**CO 1**: Recognize poetry from a variety of cultures, languages and historic periods **CO 2**: Express their ideas clearly and respond appropriately **CO 3**: Critically analyse the Indian literary texts **CO 4**: Understand distinctive features of novels, fiction

			and essays **CO 5**: Develop a holistic idea of Indian Writing in English and their history
5.	IBEGA23	AECC II - History of English Literature	**CO 1**: Interpret literary texts **CO 2**: Gain knowledge in the development of English drama from 16th century to 21st century **CO 3**: Define the development of English fiction from the 17th century to the 21st century **CO 4**: Conceptualize various types of drama **CO 5**: Get a wide exposure of eminent writers
6.	IBEGS24	SEC II - Professional Communication / Online Internship#	**CO 1:** Understand the concepts of professional communication **CO 2:** Improve the academic writing skills **CO 3:** Organise the ideas for professional interactions **CO 4:** Examine the elimination of conflicts and confusions **CO 5:** Contribute to greater productivity and promotes team Building
7.	IBEGX2P/ IBEGX2O	Extra Credit - Video Editing (Practical)/ Online Course*	**CO 1:** Understand the concept of video editing **CO 2:** Apply video editing tools to modify the video **CO 3:** Explore the newness in video editing for professional development **CO 4:** Evaluate digital video projects, identify items for improvement, and implement changes **CO 5:** Create digital video projects

II BA English – 2021 Batch
ODD Semester

S No	Subject Code	Subject Name	Course Outcomes
1.	HBEGC31	Core V - British Literature [1790-1850]	**CO1:** Have familiarity with Romantic Movement and its writers **CO2:** Understand how works differ in theme from the works of the early periods **CO3:** Discuss the tone and theme of Romantic period and its writers **CO4:** Explain life and significance of the poet hat help in analyzing literary works
2.	HBEGC32	Core VI - American Literature	**CO1:** Know about different writers hailing from America **CO2:** Understand and appreciate the works of renowned Writers of America **CO3:** Get the knowledge of the historical, cultural and social issues that influenced American Literature **CO4:** Know the literary sensibility of American writers by learning various genres

3.	HBEGA33	Second Allied I – History of English Literature-I	**CO1:** Know the development of Literature through the ages **CO2:** Comprehend the changing ideas in literature **CO3:** Understand the contributions made by major writers of each age **CO 4:** Understand the rise and fall of literary movements with its socio-political and socio-religious events **CO5:** Know the literary history of texts from the Age of Chaucer to Dryden **CO6:** Understand the social background and appreciate literature
4.	GBNM3EG	NME - Skills for Employment I	**CO1:** Get ready for job market **CO2:** Appear for interviews and make presentations confidently **CO3:** Use English for communication **CO4:** Learn Business English vocabularies
5.	HBEGE34	Skill Based Elective III - Business English-III	**CO1:** Overcome barriers of communication. **CO2:** Use electronic modes to communicate effectively **CO3:** Develop presentation skills **CO4:** Know to discuss and evaluate notes by listening and taking notes
6.	HBHR3	General Interest Course–II - Human Rights	**CO 1:** Help to get basic knowledge relating the meaning and concept of human rights **CO 2:** Know that protective laws are made for the betterment of weaker section of society **CO 3:** Have knowledge on National and State Human Rights Commissions **CO 4:** Will know the rights of women, children, dalits, etc
7.	HBEGX3PW	Extra Credit - Travel Writing [Mini Project]	**CO 1:** Enhance their observation and narrative skills **CO 2:** Understand generic features of travel writing **CO 3:** Improve their writing skills **CO 4:** Write travel stories for magazines and websites

II BA English - 2021 Batch

EVEN Semester

S No	Subject Code	Subject Name	Course Outcomes
1	HBEGC41	Core VII - British Literature [Victorian to Modern Age]	**CO 1:** Analyse critical issues related to Victorian Literature and Society **CO 2:** Examine and identify central literary genres, conventions during Victorian Era and 20thcentury **CO 3:** Understand the difference in themes from the works of the early periods **CO 4:** Describe the features of Modern Literature
2	HBEGC42	Core VIII - New	**CO 1:** Know the writers from Commonwealth Countries **CO 2:** Understand the works of renowned writers of New Literatures

		Literatures in English	**CO 3:** Understand the style and techniques followed in New Literatures **CO 4:** Understand and appreciate the cultural significance of various literatures
3	HBEGC43	Core IX - Poetry and Psychology	**CO 1:** Understand the impact of psychology in literary readings **CO 2:** Manage stress with the help of literary journey through poetry **CO 3:** Incorporate imaginative techniques and develop writing skill **CO 4:** Become creative writers using poetry writing as a tool to escape from melancholy and celebrate happiness
4	HBEGA44	Second Allied II - History of English Literature - II	**CO 1:** Know the development of Literature through the ages **CO 2:** Comprehend the changing ideas in literature **CO 3:** Understand the contributions made by major writers of each age **CO 4:** Familiarize with the age before Jonson to Modern Age **CO 5:** Appreciate different techniques employed by the writers of different ages **CO 6:** Understand the relation between socio-political and socio-religious events
5	GBNM4EG	NME - Skills for Employment II	**CO1:** Organize official meetings **CO2:** Learn the basics of business communication **CO3:** Code and decode the information at the time of information transfer **CO4:** Improve their technical skills
6	HBEGE45	Skill Based Elective IV - Business English–IV	**CO 1:** Overcome the barriers to communication and develop interview skills **CO 2:** Use electronic modes to communicate effectively **CO 3:** Participate in group discussions effectively **CO 4:** Develop the presentation skills
7	HBVE4	General Interest Course–III - Values and Ethics	**CO1:** Understand the concept of the major religions in India **CO2:** The Values and Ethics to tackle the fundamental question of human life **CO3:** Understand the intension and help one's ownself **CO4:** Know what is morally right **CO5:** The right way to treat fellow human
8	HBEGX4P	Extra Credit - Extra Reading Review [Practical]	**CO 1:** Improve their language **CO 2:** Enhance their concentration and develop reviewing skills **CO 3:** Appreciate any kind of discourse or literature **CO 4:** Develop their own interest in extra reading

III BA English – 2020 Batch
ODD Semester

S No	Subject Code	Subject Name	Course Outcomes
1.	GBEGC51	Core X - Phonetics and Transcription	**CO 1:** Comprehend the English speech system **CO 2:** Understand thoroughly the production, transmission and reception of sounds of English Language **CO 3:** Improve their pronunciation **CO 4:** Understand syllables and stress patterns
2.	GBEGC52	Core XI - Shakespeare	**CO 1:** Understand dramatic and theatrical conventions of Shakespeare **CO 2:** Analyse plot, characters, themes and stagecraft of Shakespearean plays **CO 3:** Appreciate and enjoy the plays in relation to modern contexts **CO 4:** Analyse and appreciate the modes of tragedy and comedy
3.	GBEGC53	Core XII - Literary Criticism	**CO 1:** Have clear idea of the basic theoretical concepts **CO 2:** Develop their critical competence and sensibility **CO 3:** Apply theory to the texts and enrich their understanding of literature **CO 4:** Develop the analytical competence to trace the features and their aptness
4.	GBEGE5A	Core Elective I - Prose	**CO 1:** Understand the works of prose writers of different countries across the world **CO 2:** Appreciate prose styles of different ages and different cultures **CO 3:** Analyse the poetic features depicted in prose style in the essays of popular writers of different cultures **CO 4:** Criticize prose writings **CO 5:** Appreciate additional and relevant information other than the elucidation of the central theme **CO 6:** Analyse sentence structures
	GBEGE5B	Core Elective I - Poetry	**CO 1:** Identify poetic devices employed by the poets **CO 2:** Familiarize themselves with the trends and individual traits of poets **CO 3:** Appreciate critically the usages of metaphorical items of the poets **CO 4:** Understand between lines **CO 5:** Analyse the ethics, messages, visions and criticisms of the poets **CO 6:** Learn rhyme scheme

5.	GBEGE5C	Core Elective II - Drama	**CO 1:** Know the distinctive nature of drama as a genre and its variety **CO 2:** Compare their personal experience with drama **CO 3:** Know the methods of characterisation from dialogues **CO 4:** Develop the imaginative skill to watch mind's theatre **CO 5:** Analyse the significance of staging drama **CO 6:** Analyse critically to appreciate the value of the characters
	GBEGE5D	Core Elective I - Fiction	**CO 1:** Inculcate interest in fiction and its types **CO 2:** Appreciate the novels written by writers from different nationality **CO 3:** Understand the descriptive skill of novelists **CO 4:** Recognize the closeness created by the writer with the art **CO 5:** Define climax and anticlimax **CO 6:** Learn narrative techniques employed by the novelists
6.	GBEGE54	Skill Based Elective V - Business English – V	**CO 1:** Understand the technicalities of English language **CO 2:** Write and speak fault-free English **CO 3:** Learn the skills of business communication **CO 4:** Develop the managerial skills and competitive temperament
7.	GBEGX5PW	Extra Credit - Magazine Production [Project]	**CO 1:** Acquire knowledge in print and electronic media **CO 2:** Know the techniques of photography **CO 3:** Explore career opportunities **CO 4:** Know the nuances of photography

III BA English – 2020 Batch
EVEN Semester

S No	Subject Code	Subject Name	Course Outcomes
1.	GBEGC61	Core XIII - Religion and Literature	**CO 1:** Familiarize with various religions **CO 2:** Know the impact of religion in literature **CO 3:** Understand variety of interpretations of religion **CO 4:** Understand various forms and cultures **CO 5:** Analyse the relationship between religion and culture **CO 6:** Imbibe moralistic values through religion and literature
2.	GBEGC62	Core XIV - African American Literature	**CO 1:** Comprehend the emerging trends in African American Literature **CO 2:** Understand the upheaval in material condition of African Americans **CO 3:** Understand the trauma experienced by the African American people **CO 4:** Understand the theoretical concepts of race and racism
3.	GBEGC63	Core XV - Media Writing	**CO 1:** Identify the components of news article **CO 2:** Gain knowledge of writing for media **CO 3:** Understand the techniques of writing

			CO 4: Demonstrate mock interviews
4.	GBEGC64PW	Core XVI - Project	**CO 1:** Know to write project statement **CO 2:** Develop influential reading **CO 3:** Improve presentation skills **CO 4:** Surf for research resources
5.	GBEGE6A	Core Elective III - English for Education and Career Abroad	**CO 1:** Gain introductory knowledge of TOEFL and IELTS **CO 2:** Develop their inferential and concluding skill in reading **CO 3:** Develop their listening skill in natural speech **CO 4:** Enhance their oral fluency **CO 5:** Improve their writing skill with a good flow **CO 6:** Take English proficiency tests as TOEFL and IELTS
	GBEGE6B	Core Elective III - English for Competitive Examinations	**CO 1:** Learn unfamiliar words and determine their meaning using a variety of strategies **CO 2:** Enhance students' fluency and proficiency in Writing **CO 3:** Train students in test taking strategies **CO 4:** Expose to material that facilitates aspects of grammar, writing and vocabulary **CO 5:** Become proficient users of English involving all the four skills **CO 6:** Communicate effectively and appropriately in real life situation
6.	GBEGE65	Skill Based Elective VI - Business English – VI	**CO 1:** Know the meaning of unfamiliar words **CO 2:** Learn new vocabularies, practice and use in speaking and writing **CO 3:** Develop their skills in telephoning and emailing **CO 4:** Develop their key skills that prepare them for interviews, meetings and team project

I MA English – 2022 Batch
ODD Semester

S No	Subject Code	Subject Name	Course Outcomes
1.	HMEGC11	Core I - Modern Literature (From late 19th to 21st century)	**CO 1**: Understand and infer the language of the Modern period **CO 2**: Classify the work of art in accordance with social and political happenings **CO 3**: Analyse the essence of various genres of Modern period **CO 4**: Examine the influence of science in Modern literature **CO 5**: Discuss the different writing styles of authors from

			the late 19th century to 21st century
2.	HMEGC12	Core II - Comparative Literature	**CO 1:** Understand the basic concepts in comparative literature **CO 2:** Identify the theories involved in comparing the genres, works and styles **CO 3**: Apply the theories of comparison to compare any literature across the world **CO 4:** Critically analyze the works of comparative Literature **CO 5:** Develop a comparative study on their own
3.	HMEGC13	Core III - Indian and Diasporic Literature	**CO 1:** Demonstrate the social and political controversies in India **CO 2:** Utilize knowledge about Indian cultural ethos and its uniqueness **CO 3:** Analyze the innovative and artistic use of language employed by the Indian writers **CO 4:** Criticize the cultural changes and alienation in immigrant experience **CO 5:** Develop and perceive the values and human concern inherent in the Indian cultural context
4.	HMEGC14	Core IV - Translation Studies	**CO 1:** Define and explain the meaning of translation and kinds of translation procedures **CO 2:** Identify the problems faced by the translators in the process of translating literary and sacred texts **CO 3:** Examine the importance of Translation Studies in general **CO 4:** Justify critical evaluation and appreciate the translated genres **CO 5:** Establish the act of translating any text by themselves
5.	HMEGE1A/	DSE I - Teaching of English/	**CO 1:** Understand the methods of language learning and teaching **CO 2:** Plan curriculum and design syllabus **CO 3:** Apply different approaches in language teaching **CO 4:** Develop the skills of listening, speaking, reading and writing **CO 5:** Assess language skills
	HMEGE1B	DSE I - Travel Writing / Online Internship#	**CO 1**: Define and understand the qualities of good travel writing **CO 2**: Identify the growth of travel writing from national to global level **CO 3**: Analyze travel writing in relation to gender **CO 4**: Appreciate the role of travel in refining one's own self and society **CO 5**: Create a travelogue on their own

6.	HMEGX1/ HMEGX1O	Extra Credit - Content Writing /Online Course*	**CO 1:** Understand the scope and fundamentals of content writing **CO 2:** Apply the techniques and styles of writing and editing **CO 3:** Discover the creative skills required for E-commerce sites **CO 4:** Determine relevant prospects for content writing **CO 5:** Design a web content

I MA English - 2022 Batch

EVEN Semester

S No	Subject Code	Subject Name	Course Outcomes
1.	HMEGC21	Core V - American Literature	**CO 1:** Understand the concept and themes of American literature **CO 2:** Analyse the thoughts and feelings experienced by the American poets **CO 3:** Explore the norms, values and traits of American culture **CO 4:** Discover the artistic and personal expression of the American writers **CO 5:** Develop creative thoughts sensitive to the whole spectrum of human experience
2.	HMEGC22	Core VI - English Language and Linguistics	**CO 1:** Understand the origin and growth of English language **CO 2:** Identify the changes in English language over the past fifteen hundred years or more **CO 3:** Analyze the significance of English language with various levels and branches of linguistics **CO 4:** Assess how different social and cultural contexts affect the nature of language and meaning **CO 5:** Discuss the theory and aspects of English language and linguistics
3.	HMEGC23	Core VII - Women's Literature & Gender Studies / NPTEL⊙	**CO 1:** Explain the history, developments and context of Women's Literature **CO 2**: Identify the common and particular challenges that women face **CO 3:** Discover the role played by the female writers in achieving fame equally to men **CO 4:** Defend feminist critical approaches and explain their roles in building ideas **CO 5**: Discuss scholarly works from various feminist-oriented context and methodological standpoint
4.	HMEGC24	Core VIII - Postmodern Literature	**CO 1:** Understand the transition from modernism to postmodernism **CO 2:** Categorize the postmodern theories in literature

			CO 3: Discover the trends in postmodern literature **CO 4**: Appraise the themes and features in postmodern literature **CO 5:** Construct the work in connection with the postmodern literature
5.	HMEGE2AP	DSE II - Magazine Production	**CO 1**: Learn the skills of photography and Reporting Skills **CO 2**: Experience writing and presentation of campus and / non campus issues / topics in a Magazine format **CO 3**: Apply the principles of design, format, layout and advertising **CO 4**: Learn the concepts of script writing **CO 5**: Produce an in-house magazine
	HMEGE2BPW	DSE II - Print Media/Internship[#] [Mini Project]	**CO 1:** Understand the concepts of Print Media Internship **CO 2:** Apply various skills and knowledge to become a print media professional **CO 3:** Discover innovative ideas in print media **CO 4:** Establish interpersonal relationship with media persons **CO 5:** Produce concepts and layout based on print media
6.	HMEGX2/ HMEGX2O	Extra Credit - Case Study /Online Course*	**CO 1:** Understand the characteristics of case study in research **CO 2:** Apply the techniques of case study in projects or research **CO 3:** Compare and contrast types of case studies **CO 4:** Criticize their own and peers' research projects **CO 5:** Create a case study design

II MA English – 2021 Batch
ODD Semester

S No	Subject Code	Subject Name	Course Outcomes
1.	GMEGC31	Core IX - British Literature [Modern Age]	**CO1:** Get a wide and clear picture of British Literature of this period **CO2:** Introduction to the major writers of the period **CO3:** Communicate ideas related to the literary works **CO4:** Appreciate the artistry of early British writers **CO5:** Understand the influences of a variety of cultures on the development of British literature **CO6:** Understand the style and trends prevalent in this age
2.	GMEGC32	Core X - English Language and Linguistics	**CO1:** From a narrow view of understanding language to a wider understanding **CO2:** Learn the characteristics of English language through ages and stages **CO3:** Understand and describe the historical development of English language **CO4:** Understand and apply different approaches of language acquisition **CO5:** Apply the patterns of linguistics to analyse sentence structures

			CO6: Use linguistics to comprehend language
3.	GMEGC33	Core XI - Muslim Writing in English	**CO1:** Know the literature of the marginalized **CO2:** Understand new perspective on reading literature with a new culture and tradition **CO3:** Analyze genres and literary terms which will widen the lit,.erary perspective **CO4:** Know major themes used by Muslim writers **CO5:** Develop in-depth the understanding of a fundamental and progressive view of Islam about women **CO6:** Apply theoretical concepts to the subject matter
4.	GMEGC34	Core XII - Literature for Social Transformation	**CO1:** Understand the social problems and transformations through literature **CO2:** Perceive various literatures on social transformation **CO3:** Comprehend how literature has the capacity to change one's thinking as an individual **CO4:** Understand how literature involves and enables social transformation
5.	GMEGE3APW	Core Elective III - Documentary Preparation	**CO1:** Produce a documentary / short film **CO2:** Explore their creative skills **CO3:** Learn the technicalities of cameras and other equipment **CO4:** Develop their editing skills **CO5:** Write scripts for documentary **CO6:** Apply technical skills to carry out basic operation of lighting, sound and post production systems
	GMEGE3BPW	Core Elective III - Electronic Media Internship [Mini Project]	**CO1:** Produce a documentary / short film **CO2:** Explore their creative skills **CO3:** Learn the technicalities of cameras and other equipment **CO4:** Develop their editing skills **CO5:** Write scripts for documentary **CO6:** Apply technical skills to carry out basic operation of lighting, sound and post production systems
6.	GMEGX3P	Extra Credit - Village Placement Programme [Practical]	**CO1:** Develop their teaching skills by teaching for government school students of the village **CO2:** Develop life skills needed for their self-sufficient living **CO3:** Plan and manage the financial requirements **CO4:** Improve their coordinating skills by working with peers

II MA English – 2021 Batch
EVEN Semester

S No	Subject Code	Subject Name	Course Outcomes
1.	GMEGC41	Core XIII - New Literature in English [Colonial and Postcolonial Literature]	**CO1:** Acquire a highly comprehensive knowledge of Commonwealth Literature **CO2:** Learn various literary and cultural traditions which have influenced many creative works in English language **CO3:** Learn literary works from various genres of Commonwealth Literature **CO4:** Understand and appreciate literature as a valuable source of

			intellectual, emotional, spiritual, and aesthetic experience that enriches readers' lives **CO5:** Develop critical thinking towards colonial literature **CO6:** Understanding of the relationship between Great Britain and nations that were once colonised
2.	GMEGC42	Core XIV - Literary Theory	**CO1:** Build in mind the primary concepts of theory **CO2:** Understand modern theories of literature **CO3:** Develop their critical competence and sensibility **CO4:** Differentiate the ways of conceptualizing the work of art **CO5:** Develop the ability to read the works of literary, rhetorical, and cultural criticism **CO6:** Illuminate literary texts and enrich the understanding to enjoy literature
3.	GMEGC43PW	Core XV - Project-Dissertation	**CO1:** Develop a project and cite sources according to conventional documentation style, and maintain academic integrity in their work **CO2:** Integrate material from outside sources logically with their own writing **CO3:** Develop researching skills **CO4:** Understand strategies of textual interpretation appropriate to different literary genres **CO5:** Prepare and organize ideas to give effective presentations **CO6:** Apply the principles of literary criticism to the analysis of Project-Dissertation

DEPARTMENT OF MATHEMATICS

[2022-23]MSc MATHEMATICS

ODD Semester

S. No	Subject Code	Subject Name	Course Outcomes
1	HMMXC11	Core I -Algebra	**CO 1:** Analyze the nature of Sylow's theorem. **CO 2:** Explain the concept of direct product and finite abelian groups. **CO 3:** Infer the concept of Ring Theory. **CO 4:** Justify the theoretical aspects of vector space. **CO 5:** Recapitulate the concepts of roots of polynomials.
2	HMMXC12	Core II - Analysis-I	**CO1:** Classify the basic features of real and complex number system, countable and uncountable sets. **CO2:** Categorize the sets of Basic Topology. **CO3:** Prove the theorem using the concepts of monotonic functions. **CO4:** Examine the different types of derivatives. **CO 5:** Determine the concepts of Reimann-stieltjes integral and properties of the integral.
3	HMMXC13	Core III - Ordinary and Partial Differential Equations	**CO 1:** Find the solutions of differential equations with homogeneous and nonhomogeneous equations. **CO 2:** classify the regular singular point, Euler equation and Bessel equation. **CO 3:** Solve higher order partial differential equations using exact equations successive approximation and Lipschitz condition. **CO 4:**.Solve the first order ordinary and partial differential equation. **CO 5:** Evaluate the solution of first order differential equation using Cauchy's, Charpit's and Jaccobi's methods.
4	Core IV - HMMXC14	Core IV - Measure and Integration	**CO 1:** Determine lebesgue integrable and measurable functions **CO 2:** Compare the lebsgue integral of a bounded function and a nonnegative function **CO 3:** Apply the concept of Measure and integration in theorems **CO 4:** Compute integral of derivative with differentiation of an integral **CO 5:** Analyze the concepts of measure and outer measure in extension theorem

5	HMMXE1A	DSE I - Numerical Methods	**CO 1:** Compute roots of the transcendental and polynomial equations using an appropriate numerical method. **CO 2:** Inspect various method for solving the system of linear equations **CO 3:** Apply the concept of system of linear algebraic equations and Eigen value problems. **CO 4:** Explain the concept of Numerical differentiation and integrations. **CO 5:** Compute the Numerical solutions of ordinary differential equations by opt methods.
6	HMMXE1B	DSE I - Stochastic Process	**CO 1:** Apply the concepts of Laplace transform of a probability distribution. **CO 2:** Find the solution of the problems in Markov Chains using stochastic process. **CO 3:** Discover the most important classification of States and Chains. **CO 4:** Examine the applications of Poisson process and Related Distributions. **CO 5:** Analyze the concept of birth and death process in queuing theory.
7	GMMXX1	Extra credit - Fuzzy Sets and Relations	**CO 1:** Categorize the Crisp sets and fuzzy sets. **CO 2:** Apply the Basic Concepts of fuzzy logic in fuzzy sets. **CO 3:** Analyze the application of fuzzy logic to real time systems. **CO 4:** Make use of operations on fuzzy sets. **CO 5:** Compute fuzzy relations on a single set.
8	GMMXC31	Core IX - Functional Analysis	**CO 1:** Solve the approximation of continuous functionsand linear maps. **CO 2:** Understand the statements and proof of important theorems. **CO 3:** Know the application of Open Mapping and Closed graph theorem. **CO 4:** Understand concept of Dual and Transposes with l^2 and l^p spaces as examples. **CO 5:** Acquired the knowledge of Inner product spacesand Riesz Representation theorems. **CO 6:** Know a basic idea of Functional Analysis underpins Modern Analysis

9	GMMXC32	Core X - Topology-II	**CO 1:** Know the Urysohn lemma is the existence of real valued continuous function on a Normed space. **CO 2:** Understand the Tychonoff theorem is of great usefulness to analysis **CO 3:** Understand the paracompactness & Metrization theorems **CO 4:** Understand the Function spaces and compact convergence **CO 5:** Gain the knowledge of nowhere differentiable function from analysis. **CO 6:** Understand and apply the analysis concept in topology
10	GMMXC33	Core XI - Classical Mechanics	**CO 1:**Enable the students to understand the basic conceptsof Mechanics **CO 2:**Prepare the students to understand basic conceptsof lagrangian and Hamilton's Approaches **CO 3:**Learn about central force problem **CO 4:**Know the basic concepts of Kepler Problem and its applications **CO5:**ProficientinVariationalPrinciple,Hamiltonprinciple and Hamilton's Equations **CO 6:** Familiar with the main mathematical methods used in physics.
11	GMMXC34	Core XII - Probability and Statistics	**CO 1:** Determine probabilities of events in Statistical Method. **CO 2:** Know about various type of Distribution. **CO 3:** Apply sampling theories and concepts as well as change of variable. **CO 4:** Use method of Moment and Moment Generating Function. **CO 5:** Apply the Central Limit Theorem to Problem Involving Sums. **CO 6:** Provide essential tools in Theory of Statistics andits application.
12	GMMXE3B	DSE III - Operations Research	**CO 1:**Understandthe concept of Applications of Branch and Bound Algorithm. **CO 2:** Understand the concepts of Backward and Forward Recursion in Dynamic Problems. **CO 3:** Gain knowledge of Decision Making. **CO 4:** Understand the Elements of Queuing Model and Pure Birth and Death Model**.** **CO 5:** Understand the Concepts of the General Poisson Queuing Model. **CO 6:** Understand the Concepts of the Inventory Modeland Dynamic EOQ Model.

MSc MATHEMATICS

Even Semester

S. No	Subject Code	Subject Name	Course Outcomes
1	HMMXC21	Core V - Linear Algebra	**CO 1:** Analyze the concept of linear transformation. **CO 2:** Compute the solution of the problems in polynomials. **CO 3:** Recapitulate the theoretical concepts of Determinants. **CO 4:** Explore the concept of Elementary Canonical Forms. **CO 5:** Infer on the different forms of Bilinear forms.
2	HMMXC22	Core VI - Analysis-II	**CO 1:** Apply uniform convergence method to proving the sequences of real functions. **CO 2:** Distinguish the exponential and logarithmic functions. **CO 3:** Analyze the concepts of functions of several variables. **CO 4:** Examine the derivatives of several variables. **CO 5:** Probe the ability to reflect on problems that are quite significant in the field of real analysis.
3	HMMXC23	Core VII – Topology - I	**CO 1:** Categorize the different types of topologies with examples. **CO 2:** Analyze the concept of continuity on product topology and metric topology. **CO 3**: Explain the concept of connectedness and components of the real line and able to apply in theorems. **CO 4:** Infer the aspects of compactness and its related theorems. **CO 5:** Examine the concept of Countability and separation axioms with illustrations.
4	HMMXC24	Core VIII- Complex Analysis	**CO 1:** Examine the solution of complex-valued functions, Analytic function and conformal mapping. **CO 2:** Show the Series Expansions, singularities, Cauchy's theorem and its consequences. **CO 3:** Identify the location and nature of a singularity of a function and calculate the order and the residue. **CO 4:** Analyze the results associated to Definite Integrals and Cauchy's Integral formulae. **CO 5:** Evaluate the region of convergence by applying Taylor's Series - Laurent's Series.

5	HMMXE2A	DSE II - Graph Theory	**CO 1:** Construct reliable communication network. **CO 2:** Apply the concept of direction path to Euler tour. **CO 3:** Explicate matching and edge colouring is using in the solutions of their problems. **CO 4:** Prove the theorems in Independent Set. **CO 5:** Use the chromatics numbers in real life situations for diagrammatic representations.
6	GMMXC41	Core XIII-Complex Analysis	**CO 1:** Apply theorems related to the algebra and geometry of the complex plane. **CO 2:** Apply results of the theory of analytic and holomorphic functions of complex variable. **CO3:** Identify the location and nature of a singularity of a function and calculate the order and the residue. **CO 4:** Apply basic results in Cauchy integral theory and its consequences, Residue Calculus. **CO 5:** Write solutions to problems and extendtheoretical proofs to examples. **CO 6**:Apply techniques from Complex Analysis to Deduce results in other areas of Mathematics
7	GMMXC42	Core XIV–Advanced Statistics	**CO 1:** knowledge in testing the hypothesis for large andsmall samples. **CO 2:** Demonstrate understanding of the sufficient statistics. **CO 3:** Explain the comprehensive idea about the Bayesian Estimations. **CO 4:** Know the knowledge about statistical tests and Estimations. **CO 5:** Students shall be able to effectively communicate results of Statistical Analysis. **CO 6:** Identify the features that describe a data distribution.
8	GMMXC43W	Core XV - Project	**CO 1:** Develop a critical awareness of topic of current research. **CO 2:** Acquire a deeper and systematic understanding of selected areas of pure mathematics. **CO 3:** Cultivate a mathematical attitude and nurture theinterests.

BSc MATHEMATICS

ODD Semester

S. No	SubjectCode	Subject Name	Course Outcomes
1	IBMXC11	Core I - Calculus	**CO 1:** Identify the tangent, sub tangent, subnormal, polar sub tangent, polar subnormal of a curve **CO 2:** Evaluate envelope, radius and centre of curvature, evolute of a curve and polar equation **CO 3:** Analyze the concept of Asymptotes and Properties of definite integrals **CO 4:** Examine the techniques of integration **CO 5:** Compute the area and centroid of curvature by using double and triple integrals
2	IBMXC12	Core II - Theory of Equations	**CO 1:** Find the nature of the roots of an equation **CO 2:** Examine the relation between roots and coefficients of the equations **CO 3:** Solve the roots of the given equation by adopting different methods **CO 4:** Determine the solutions of cubic equations by applying the suitable methods **CO 5:** Evaluate the hyperbolic functions and inverse hyperbolic function
3	IBMXA13	AECC I - Mathematical Statistics - I	**CO 1:** Illustrate and differentiate the basic probability concepts CO 2: Analyze the probability density function to solve the problems **CO 3:** Evaluate relationship between joint p.m.f and joint p.d.f **CO 4:** Make use of poison and binomial distribution to solve real life problems **CO 5:** Classify the Random variables and determine solution to the given problems by MGF
4	HBMXE14	SEC I - Theory of Equations with MAT Lab	**CO 1:** Identify the fundamental operations theory of equations **CO 2:** Notice the commands in MATLAB to solve problems in theory of equations **CO 3:** Apply the acquired knowledge on MATLAB to find roots of polynomials

			CO 4: Use MATLAB to solve algebraic equation **CO 5:** Make use of MATLAB for Horner's Method and Newton's Method of evaluating a real root
5	IBCPA13	AECC I - Numerical Methods	**CO 1:** Assess the solution of Algebraic and Transcendental equations **CO 2:** Compute the missing values for unequal intervals using Divided difference and Lagrange's Method **CO 3:** Evaluate the approximate values of the first derivative, maximum and Minimum values of the Function using Newton's formula **CO 4:** Solve the problem and using the methods of Gauss elimination, Gauss- Jordan and iterative methods **CO 5:** Applying the method of numerical solutions of ordinary differential equation to examine the problem
6	IBCYA13	AECC II– Discrete Mathematics	**CO 1:** Verify the basic laws of algebra and compute the principle of duality **CO 2:** Evaluate the mathematical induction and invertible function **CO 3:** Build the skill of matrix algebra and its applications in systems **CO 4:** Analyze the recurrence relation and generating functions **CO 5:** Apply the concept of graph theory in the study of shortest path algorithms
7	HBCHA13	AECC I - Mathematics-I	**CO 1:** Establish the applications of Binomial theorem in terms of series **CO 2:** Classify exponential series and logarithmic series **CO 3:** Solve the roots of the given equation by adopting different methods **CO 4:** Use algebraic operations to find the rank of the matrices **CO 5:** Examine the concept of trigonometric function and hyperbolic functions

8	HBMXC31	Core V- Differential Equations	**CO 1:** Distinguish between linear, homogeneous, non-homogeneous differential equations. **CO 2:** Recognize and solve complementary function and Particular integral. **CO 3:** Recognize and solve the linear equations of the second order. **CO 4:** Gain the knowledge to solve partial differential equations.
9	HBMXC32	Core VI - GraphTheory – II	**CO 1:** Know the Algorithms for finding a maximum matching and a maximum weight matching in a Bipartite graph. **CO 2 :** Know how to use Euler's Formula to check if a graph is planar. **CO 3:** Know about many different coloring problems for graphs. Able to formulate applied problems as coloring problems. **CO 4:** Able to tell what is a directed graph – Know how to represent a graph using matrix and list.
10	HBMXE34	Skill based elective III- Applied Statistics	**CO 1:** Analyse the least square method. **CO 2:** Understand the Interpolation concept. **CO 3:** Know the Fundamentals of Index number. **CO 4:** Demonstrate the ability to Analysis of Series.
11	HBITC31	Core V- Mathematics for Computer Science-I	**CO 1:** Understand the concept of basic measure of central tendencies and dispersion **CO 2:** Develop skills in basic statistical concepts **CO 3:** Understand the use of language of probability **CO 4:** Use mathematical knowledge to analyse and solve problems.
12	HBCSA33	Second Allied I - Mathematical Foundation for Computer Science	**CO 1:** Understand the ideas of statements andnotations in logic **CO 2:** Understand how to apply statements tonormal forms **CO 3:** Understand the basic proofs involving setsand functions **CO 4:** Understand the concept of Boolean algebraand Boolean function **CO 5:** Understand the use of graphs **CO 6:** Communicate clearly and effectively usingthe technical language of the field.
13	HBCYA23	Second Allied II – Basic Statistics	**CO 1:** Develop skills in basic statistical concepts**CO 2:** Apply the various measures of statistical parameters to real life **CO 3:** Know about correlation and regression **CO 4:** Analyse the least square method. **CO 5:** Understand the Interpolation concept. **CO 6:** Know the Fundamentals of Index number.

14	HBSYA33	Allied III - Psychological Statistics	**CO 1:**Identifythe Primaryobjectives of Psychologyin Statistical Method. **CO 2:**Capable ofPreparingFrequencytableusingRaw data. **CO 3:**Capable ofdrawingPie diagram, Histogram, FrequencyPolygonand Ogives. **CO4:**AcquaintedwiththeKnowledge ofvariousMeasuresofCentralTendencyandtheirCharesteristics. **CO 5:**CalculateandInterpretCorrelationand Co-efficient ofcorrelation. **CO 6:**Learnhow to useaChi Squaretest to evaluatethefit of Hypothesized Distribution.
15	HBNM3MX	Non-Major Elective I - Quantitative Aptitude for Competitive Examinations-I	**CO 1:** Understand the concepts of Time and Work **CO 2**: Developing the Problem Solving Skill basedon Profit and Loss **CO 3:** Developing the Problem Solving Skill basedon Simple Interest **CO 4:** Developing the Problem Solving Skill based on Compound Interest
16	HBMXX3	Extra Credit - Logical Reasoning	**CO 1:** Demonstrate the ability to perform Logical Venn Diagrams and to solve different puzzles. **CO 2:** Use analysis of variance techniques to Alphabet test. **CO 3:** Understand the Alpha Numeric Sequence Puzzle. **CO 4:** Formulate the problem quantitatively anduse appropriate inserting the missing character.
17	GBMXC51	Core X- Abstract Algebra – II	**CO 1:** Understand the basic concepts of Vector spaces **CO 2:** Use the definition and properties of linear transformations and matrices of LT and change ofbasis **CO 3:** Compute inner products and determine orthogonality on vector spaces **CO 4:** Compute with the characteristic polynomial, eigenvectors, eigenvalues and apply the basic results
18	GBMXC52	Core XI- Dynamics	**CO 1:** Understand the concept of Laws. **CO 2:** Understand the Mathematical Ideas. **CO 3:** Gain the knowledge of the Behavior ofObject in Motion. **CO 4:** Develop a working knowledge to handle Practical Problems.

19	GBMXC53	Core XII-Astronomy	**CO 1 :** Gain Knowledge about Spherical Conceptsin Space and Plane Trigonometrical Formula. **CO 2 :** Know about Celestial Phenomenon. **CO 3 :** Discuss how light is used by Astronomersto learn about Universe. **CO 4 :** Acquained Knowledge about Lunar Librations in Moon.
20	GBMXE5A	Core Elective I - Fourier and Laplace Transforms	**CO 1:** Familiarize the students with the concept of Fourier transform. **CO 2:** Understand the Finite Fourier Transforms.**CO 3:** Gain knowledge of solving linearity properties of Laplace and inverse Laplace Transforms. **CO 4:** Understand differential and integral problems. **CO 5:** Know the initial and final value theorems of Laplace transform. **CO 6:** Know the relation between Fourier Transform and Laplace transform .
21	GBMXE5B	Core Elective I - Combinatorics	**CO 1:** This course will give students the combinatorial tools to model and analyze practical problems in various areas. **CO 2:** Students will be able to identify, formulate, and solve problems in Mathematics, including proof writing. **CO 3:** They will put to practice problem solving techniques that they know, and learn new ones **CO 4:** Students will be able to present technical information clearly in both oral and written formats. **CO 5:** Understand a part of Discrete Mathematics that deals with enumeration and existence problems. **CO6:** Familiar with fundamental appear in various other fields of Mathematics and Computer Science

22	GBMXE5C	Core Elective II - Fluid Dynamics	**CO 1:** Able to find the gradient, divergence and curl of vector expressed in terms of orthogonal curvilinear coordinates. **CO 2:** Identity the fundamental kinematics of fluid elements. **CO3:** Explain how Bernoulli equation is related to conservation of energy. **CO 4:** Develop the knowledge of axi-symmertric flows. **CO 5:** Describe its applicability, potential and limitation. **CO 6:** Familiar with two dimensional flow
23	GBMXE5D	Core Elective II - Operations Research	**CO 1:** To familiarize the concepts of Linear Programming Problem **CO 2:** Mathematical tools that are needed to solvethe Optimization Problem **CO 3:** Gain knowledge of solving the Transportation and Assignment Problem **CO 4:** Understand the Optimization Technique in Games and Strategies Problem **CO 5:** Gain knowledge of Network Construction **CO 6:** Students can solve the Real life problem through OR techniques
24	GBMXE54	Skill Based Elective V- Non-Verbal Reasoning	**CO 1:**Understand the basic concepts of logical reasoning skills **CO 2:**Understand the basic concepts of quantitative ability **CO3:**Testacandidate‟s overall Knowledge Power of Reasoning **CO 4:**To compete in various competitive exams like CAT, GATE, UPSC, GPSC etc.
25	GBMXX5	Extra Credit – Quantitative Techniques	**CO 1:** Understand the concept of optimal sequence model and Processing through the job and machines. **CO 2:** Know the concept of application of dynamic programming model in industries. **CO 3:** Calculate the probabilities, and derive the marginal and conditional distributions of bivariate random variables. **CO 4:** Understand of the values and use of quantitative methods in administrative and optimal problem solving and decision making.

BSc MATHEMATICS

Even Semester

S. NO	Subject Code	Subject Name	Course Outcomes
1	IBMXC21	Core III - Analytical Geometry - 3D&VectorCalculus	**CO1:** Describe the concepts of planes and solve the related problems **CO2:** Explain geometrical shapes and coplanar lines **CO3:** Explicate the knowledge on the concepts of sphere **CO4:** Make use of different operators, explain the different concepts of vector differentiations **CO5:** Compute vector integration by using Green's theorem and its extension
2	IBMXC22	Core IV - Differential Equations	**CO 1:** Select the suitable method and find particular integral **CO 2:** Determine the solutions of differential equations by various methods **CO 3:** Analyze the concepts of simultaneous differential equations and solve the Problems **CO 4:** Compute the solution to the problem of linear equations of second order **CO 5:** Use Lagrange's and Charpit's methods to solve the partial differential equations
3	IBMXA23	AECC II - Mathematical Statistics II	**CO 1:** Analyze the concept of correlation and regression **CO 2:** Estimate and apply all aspects of theory of attributes **CO 3:** Classify the concepts of sampling, testing of hypothesis and critical region **CO 4:** Analyze the M.G.F of chi-square distribution **CO 5:** Justify the concept of Student's t-distribution and F-distribution
4	IBMXS24P	SEC II - Analytical Geometry with Geogebra	**CO 1:** Demonstrate and use Geogebra to find the Equations of a plane and angle between two planes **CO 2:** Utilize the Geogebra to solve the Equations of a line **CO 3:** Compare Angle between a line and a plane **CO 4:** Compute the solution of two lines that are coplanar **CO 5:** Verify the results of Equation of a circle and Intersection of two spheres
5	IBMX X2	Extra Credit - Arithmetic for Competitive Examinations	**CO1:** Solve the problems using fundamental rules **CO2**: Solve and simplify the problems **CO3:** Compute the average of numbers **CO4:** Apply the chain rule for solving the problems **CO5:** Make use of Allegation or Mixture in problems

6	IBCHA23	AECC II - Mathematics-II	**CO 1:** Examine the solutions of problem using forward difference formula and backward difference formula **CO 2:** Find the derivatives for higher order equations **CO 3:** Simplify different forms of integral concepts **CO 4:** Apply the construction of Fourier Series in different environment **CO 5:** Describe the different concept of Laplace transformations
7	HBMXC41	Core VII - Abstract Algebra – I	**CO 1 :** Assess properties implied by the definitions of groups and rings, **CO 2 :** Analyze and demonstrate examples of normal subgroups, quotient groups **CO 3 :** Use the concepts of isomorphism and homomorphism for groups and rings. **CO 4 :** Produce rigorous proofs of preposition arising in the context of abstract algebra.
8	HBMXC42	Core VIII - Real Analysis – I	**CO 1 :** Lay a good foundation for Classical Analysis. **CO 2 :** Compare the Behaviour of Sequence and Series. **CO 3 :** Understand the techniques to test the Convergent and Divergent. **CO 4 :** Understand the terms Absolute and Conditional Convergence.
9	HBMXC43	Core IX – Statics	**CO 1**: The students to realize the nature of the forces when more than one force acting on a particle. **CO 2:** Develop the ability to describe parallel forces and moments. **CO 3:** The student should realize the concept about Friction and Center of the gravity. Also the student can differentiable to static and dynamic forces. **CO 4:** Develop a working knowledge to handle practical problems.
10	HBMXE45	Skill Based Elective IV - Verbal Reasoning	**CO 1**: Understand the concepts of Blood Relations and Directions Sense. **CO 2:** Gain Knowledge of Arithmetical and logical Reasoning. **CO 3:** Explain the Concepts of Data Sufficiency. **CO 4:** Appear all Competitive Examinations.
11	HBMXX4	Extra Credit – Applications of GroupTheory	**CO 1**: Understand thegroup theoryin matrices. **CO 2:**Gain the knowledgeof rectangular, inverse, rankand nullitymatrices. **CO 3**: Know the group theoryin informationtheory. **CO 4**: Know the algebraic operations ongroup codesand application ofgroup theory.

12	HBNM4MX	Non-Major Elective II - Quantitative Aptitude for Competitive Examinations-II	**CO 1:** Gain knowledge of Indices and Logarithms. **CO 2:** Understand the concepts of the Permutation and Circular Permutation. **CO 3:** Understand the basic concepts of Arithmetic Progression and Geometric Progression. **CO 4:** Gain the knowledge based on Sets and Operations on Sets.
13	HBITC41	Core VIII - Mathematics for Computer Science-II	**CO 1:** Learn the concepts of matrices and set theory **CO 2:** Understand the basic principles of relations and its types **CO 3:** Have an understanding in the concepts of logic **CO 4:** Gain knowledge about graphs and trees.
14	HBCSA44	Second Allied II – Operations Research	**CO 1:** Understand the various techniques of Operations Research. **CO 2:** Convert real life problems into mathematical models. **CO 3:** Design new simplex model using simplex andBig M **CO 4:** Understand to build and solve assignments models and transportation models. **CO 5:** Understand optimization techniques Business problems. **CO 6:** Gain knowledge to solve real life problems using concept of operations research.
15	HBNM4MX	Quantitative Aptitudefor Competitive Examinations-II	**CO 1:** Gain knowledge of Indices and Logarithms.**CO 2:** Understand the concepts of the Permutation and Circular Permutation. **CO 3:** Understand the basic concepts of Arithmetic Progression and Geometric Progression. **CO 4:** Gain the knowledge based on Sets and Operations on Sets.
16	GBMXC61	Core XIII- Real Analysis – II	**CO 1 :** Understand the Countable Set, Metric space, Closed and Open set. **CO 2 :** Analyze the Limit Point. **CO 3 :** Understand the concept of Continuity. **CO 4 :** Demonstrate the Connectedness and Compactness.
17	GBMXC62	Core XIV- Number theory	**CO 1:** Apply Divisibility properties and the Fundamental theorem of Arithmetic. **CO 2:** Solve system of linear congruence and applythe Chinese Remainder theorem. **CO3:** Understand Fermat's little theorem to prove relations involving prime numbers. **CO4:**Understand the concept of Euler's phi theorem and Phi Functions

18	GBMXC63	Core XV-Numerical Analysis	**CO 1:**Be familiar with calculation and interpretation of errors in numerical computations **CO 2:**Be familiar with numerical interpolation and approximation of functions **CO 3:**Be familiar with numerical differentiation and integration **CO 4:** Be familiar with numerical solution of differential equations.
19	GBMXC64	Core XVI- Complex Analysis	**CO1:** Understand the significance of differentiability for complex functions and be familiar with the Cauchy Riemann equations**.** **CO2:** Understand the Concept of Bilinear transformations. **CO3:**Gain knowledge of integrals along a path in the complex plane and understand the Statement of Cauchy's theorem**.** **CO4:**Know the Taylor and Laurent expansions of simple functions, determining the Singularities and calculating residues**.** **CO5:** Gain knowledge of Cauchy Residue theorem**.** **CO6:** Apply in almost every branch of Mathematics and is one of the Powerful tools for the Mathematicians.
20	HBMXE6A	Core Elective III – Discrete Mathematics	**CO 1:** Gain knowledge in recurrence relations and generating functions **CO 2:** Understand the concept of logic operators. **CO 3:** Understand the techniques for replacement process **CO 4:** Recognize basic properties of lattices. **CO 5:** Have a good foundation in the concept of Boolean Algebra. **CO 6:** Apply knowledge about discrete Mathematicsin problem solving.
21	HBMXE6B	Core Elective III – Mathematical Modeling	**CO 1:** Learn techniques of mathematical modeling **CO 2:** Construct appropriate Ordinary differential equations with relevant parameters and conditions. **CO 3:** Ability to determine the basic theory of linear difference equations **CO 4:** Understand the concept of graphs and directed graph. **CO 5:** Gain knowledge about calculus of variations. **CO 6:** Formulate and specify a real life problems
22	HBM XE65	Skill Based Elective VI- Quantitative Aptitude	**CO 1:** After through learning of aptitude will be able to critically evaluate various real life situations by restoring to analysis of key issues and factors. **CO 2:** Able to read between the lines and understand various language structures. **CO 3:** Able to demonstrate various principles involvedin solving mathematical problems and thereby reducing the time taken for performing jobfunctions.

			CO 4: Solve the sums by applying shortcut methodswith the time management.

BSc Data Science

ODD Semester

S. No	Subject Code	Subject Name	Course Outcomes
1	IBDSA13	AECC I – Mathematical Statistics – I	**CO 1**: Illustrate and differentiate the basic probability conc **CO 2:** Analyze the Probability density function to solve the problems **CO 3:** Evaluate relationship between joint p.m.f and joint p **CO 4:** Make use of poison and binomial distribution to solv real life problems **CO 5:** Classify the random variables and determine solution the given problems by MGF

BSc Data Science

Even Semester

S. No	Subject Code	Subject Name	Course Outcomes
1	IBDSC21	Core III- Discrete Mathematics	**CO 1:** Construct truth tables and to prove the results **CO 2:** Apply the concept of generating functions to solve the relations **CO 3:** Use the concepts of induction and recursion to solve problems **CO 4:** Analyze counting concepts and apply to solve problems **CO 5:** Analyze the concepts of algebraic structure and codes in polynomial rings

2	IBDSA23	AECC II – Mathematical Statistics – II	**CO 1:** Analyze the concept of correlation and regression **CO 2:** Estimate and apply all aspects of theory of attributes **CO 3:** Classify the concepts of sampling, testing of hypothe and critical region **CO 4:** Analyze the M.G.F of chi-square distribution **CO 5:** Justify the concept of Student's t-distribution and F-distribution
3	IBDSX2	Extra Credit-Arithmetic for Competitive Examinations	**CO1:** Compute the average of numbers **CO2:** Make use of Allegation or Mixture in problems **CO3:** Solve and simplify the real life problems **CO4:** Apply the chain rule for solving the problems **CO5:** Build the analytical and logical skills

DEPARTMENT OF HOME SCIENCE AND RESEARCH CENTRE		
COURSE CODE	**COURSE TITLE**	**OUTCOME(S)**
M Sc HOME SCIENCE - NUTRITION AND DIETETICS		
IMNDC11	Advanced Food Chemistry	CO 1: Recall knowledge base of core food chemistry with an emphasis on chemical changes during processing and storage and explain the chemistry, structure, and properties of various food constituents CO 2: Identify the nature of food components and their qualities in order to evaluate the changes in final products CO 3: Distinguish the functions of various food-processing components. CO 4: Discuss the effect of processing on the physiochemical and functional qualities of various food ingredients CO 5: Prioritize the roles of several constituents in food storage and shelf-life extension
IMNDC12	Advanced Human Nutrition	CO1: Relate human nutrition to the maintenance of health and the prevention of disease and understand the metabolic role of nutrients and their complex interrelationships CO2: Identify the relationship between physiological structure, biochemical status and nutrient availability CO3: Analyze the Bioavailability, excess and deficiency condition of all nutrients CO4: Utilize current scientific literature to investigate nutrition and the valid use of supplements CO5: Critically evaluate and derive requirements for specific nutrients and familiarize with the recent advances in human nutrition

IMNDC13	· Integrated Course-Advanced Food Microbiology	CO1: Recall the types of microorganisms in food processing and compare their characteristics and behaviour and understand the knowledge of sample preparation in microbiological analysis CO2: Identify microorganisms in food fermentation product and describe their roles CO3: Differentiate the roles of bacteria, mycotoxin, viruses and parasites to food borne diseases and compare pathogens that cause infection and intoxication CO4: Explain the principles of food microbiology to evaluate food related cases in daily Application CO5: Familiarize the concept of HACCP in Food Industry
IMNDC14	Research Methodology and Statistics	CO1: Define and identify the knowledge of the scientific method, purpose and approaches to research CO2: Illustrate the statistical techniques to research data for analyzing and interpreting data CO3: Explain the types of research, with research process and research designs CO4: Assess the appropriate sampling techniques for research work CO5: Summarize the sampling process for data collection
IMNDE1A/	a.Public Health Nutrition	CO1: Define the concept of public health nutrition and discuss the challenges and scope of public health nutrition in India CO2: Select and use appropriate modes of communication to obtain and share evidence based public health nutrition knowledge CO3: Assess the nutritional status by using direct or indirect methods CO4: Summarize the global, national, regional and state level prevalence of protein energy malnutrition CO5: Formulate various teaching aids for extension education and educate the people and family regarding nutritional care

IMNDE1B	b.Sensory Evaluation	CO1: Define sensory evaluation and understanding of sensory evaluation and consumer testing methods and of their underlying principles CO2: Apply sensory evaluation techniques in sensory assessment situations CO3: Analyze the standard methods of sensory evaluation using essential techniques CO4: Explain the human sensory perceptions, particularly the chemical and trigeminal senses and their relevance to the evaluation of food and beverage sensory properties CO5: Capacity to formulate foods that meet specified sensory requirements and which are intended to contribute to reduce community health concerns
IMNDX1/ IMNDX1O	Institutional Food Service Management / *Online Course (Food Nutrition for Healthy Living-Swayam)	CO1: Recall the various types of food services and gain the knowledge about the Institutional food service management CO2: Identify a variety of managerial, production, and service positions that are typical of the food service industry CO3: Analyze the steps involved in menu planning and menu designing CO4: Distinguish between commercial and institutional food service facilities CO5: Develop general knowledge on the origin and development of food service in hotels, restaurants and institutions
IMNDC21	Medical Nutrition Therapy I	CO1: Define medical nutrition therapy and recall the etiology, physiologic and metabolic anomalies of acute and chronic diseases CO2: Explain the therapeutic role of diet and nutritional care concerning weight management, fevers & infections and diseases of the gastrointestinal tract and hepatobiliary system CO3: Assess the nutritional status of critically illness patients CO4: Evaluate the nutritional care based on pathophysiology, prevention/ and treatment of the various diet-related disorders/ diseases CO5: Develop practical skills for modify the diet as per the disease condition

IMNDC22P	Medical Nutrition Therapy I Practicals	CO1: Understand the importance of diet in health and disease conditions and explain the process of objective setting in the delivery of a nutritional care plan for a client CO2: Emphasis skill development in planning therapeutic diets using food exchange lists CO3: Explain the dietary essentials for recovery and maintenance of various systems CO4: Compare and contrast derivated nutritive value with RDA using software CO5: Develop practical skills for modify the diet as per the disease condition
IMNDC23	Advanced Nutritional Biochemistry	CO 1: Understand and augment the biochemistry knowledge at the postgraduate level CO 2: Apply the knowledge to Insight the interrelationships between various metabolic pathways CO 3: Inspect and understand the basics of genetic material and their metabolism CO 4: Assess an elaborate knowledge on Acid-Base regulation CO5: Integrate their ideas on the application of enzymes in various fields
IMNDC24	Nutrition Through Life Cycle	CO1: Gain knowledge about food pyramid, vegetarian diet, menu planning and nutritional needs during infancy to adolescents and explain the nutrition education for specific lifecycle stages CO2: Identify and describe potential diseases and disorders, and their risk factors affecting nutrient needs at each state of the life cycle CO3: Assess nutrition issues/ conditions, and recommend nutrition intervention/ support CO4: Evaluate and plan strategies and diets for improving nutritional status of individuals at each stage of the life cycle CO5: Design food plans to meet the needs of humans at various life cycle stages
IMNDE2A/	a.Guidance and Counselling in Nutrition Education /	CO1: Define and outlining the concept of nutritional assessment and counselling using case studies CO2: Examine the characteristics of counselors and counselling process CO3: Analyze the counselling approaches and techniques CO4: Assess the knowledge on various areas of counselling CO5: Build a self-improving programmes for social and personal problems

IMNDE2B	b.Food Packaging Technology	CO1: Define food packaging and discuss the importance and functions of food packaging CO2: Apply the principles of innovative packaging technologies for use with food products CO3: Analyze the Chemical and physical properties of packaging materials CO4: Evaluate different packaging materials based on various types of analysis in the laboratory CO5: Create awareness on current issues related to quality and safety aspects of food packaging
IMNDX2PW/ IMNDX2O	Scientific Writing for Project / *Online Course (Maternal Infant Young Child Nutrition- Swayam)	CO1: Recall the strategies and reasons for publishing research and discuss the different types of scientific writing CO2: Apply the knowledge on implementing outlines as a guide to plan the manuscript CO3: Analyze and reflect on your thinking processes and growth to identify strategies for improving academic writing and language skills CO4: Evaluate the drafting process based on the script outline and re-reading the content to precise the writing for project CO5: Write a series of analytical, creative, and coherent writing projects, including original research with primary and secondary sources
IMNDC31	Medical Nutrition Therapy II	CO1: Recall the etiology, symptoms and dietary management of degenerative disease and Integrate knowledge of research principles and methods associated with nutrition and dietetics practice CO2: Apply the knowledge of medical terminology and medical abbreviations associated with nutrition related diseases and conditions CO3: Assess the nutritional status of critically ill patients and formulate different therapeutic diets for various disease conditions CO4: Demonstrate initiative and judgment using a professional, ethical and entrepreneurial approach advocating for excellence in nutrition and dietetics CO5: Independently plan and execute a research project regarding nutrition and dietetics practice

IMNDC32P	Medical Nutrition Therapy II Practicals	CO1: Relate the causes, symptoms and onset of various types of degenerative diseases and describe the acquired skill development in planning therapeutic diets using food exchange list CO2: Apply the skills for preparing appropriate therapeutic diets CO3: Analyze the nutrient content of therapeutic diet CO4: Assess the nutritional status using various nutritional assessment tools CO5: Plan menu for the given disease condition and compare and contrast with R.D.A using software
IMNDC33	· Integrated Course- Nutraceuticals and Functional Foods	CO1: Retrieve the historical perspective of nutraceuticals and physiology of human nutrition and explain the importance of nutraceuticals in the context of the human well-being CO2: Illustrate the occurrence, chemical nature and medicinal benefits of natural nutraceuticals belong to different phytochemical categories CO3: Explain the functional components from Plant, Animal and microbial Sources. CO4: Evaluate the standards of evidence required for efficacy and safety assessment of nutraceutical and functional foods CO5: Summarize the application of Food biotechnology for improving the formulation of potential functional ingredients / foods will be mastered
IMNDC34P	Food Analysis Practicals	CO 1: Understand the technical terminology and scientific units related to food analysis CO 2: Implement the principles behind analytical techniques associated with food and the importance of accuracy and reproducibility in analysis CO 3: Analyze and compare various parameters such as pH, moisture, ash, nitrogen, protein, lipid, carbohydrate, etc. in food samples CO 4: Evaluate the appropriate analytical technique when presented with a practical problem CO 5: Design an appropriate analytical approach to solve a practical problem

IMNDE3A/	a. Food Safety and Quality Control	CO1: Learn standards related to food safety and quality and understand the knowledge about International food safety legislation CO2: Apply the knowledge on the requirements for compliance with national and International food standards CO3: Demonstrate knowledge of quality management systems, their implementation and the practical steps needed for implementation CO4: Conduct risk assessments of food safety problems including genetic modification CO5: Critically evaluate the recent developments in the control of food safety
IMNDE3B	b.Sports Nutrition	CO1: Outline evidence based nutritional strategies to enhance recovery and understand the knowledge of physiological response to exercise affects nutritional requirements CO2: Explain the relationship between exercise, nutrition and energy balance for the control of body composition and chronic disease risk factors CO3: Interpret data to assess body composition changes in elite athletes and demonstrate an ability to use these guidelines to provide general nutrition advice for achieving or maintaining a healthy bodyweight CO4: Evaluate dietary strategies to influence the health and performance of elite and recreational athletes CO5: Communicate sports nutrition advice accurately and effectively to non-specialist audiences
IMNDC41	Geriatric Nutrition	CO1: Gain Knowledge of Nutrition, Health and Gerontology and understand the process of physical and social changes taking place during the elderly people life CO2: Identify the nutritional implications of these changes in terms of nutrient and dietary requirements CO3: Determine different techniques of nutritional assessment of the elderly CO4: Examine the sensory problems and chronic degenerative disease during ageing CO5: Develop the knowledge about geriatric guidance and counseling and write the role of Government and NGOs in economic status of geriatrics

IMNDC42P	# Dietetic Internship in Hospital	CO1: Identify nutrition-related problems and determine nutrition interventions and describe the work of inter professional teams and the roles of others with whom the registered dietician nutritionist collaborates in the delivery of food and nutrition services CO2: Interpret the relevance of food and nutrition for the disease CO3: Analyze the food habits and brief about the dietary modification CO4: Discuss the impact of health care policy and different health care delivery systems on food and nutrition services to the consultant and Graduates will be prepared to pass the national level Registered level dietician examination CO5: Persuade the patients with appropriate online diet counselling techniques
IMNDC43PW	Dissertation	CO1: State a nutritional problem prevalent in local community settings and draft a research design for solving CO2: Apply the appropriate nutritional concepts to research techniques. CO3: Analyze the research problems in the field of nutrition and dietetics CO4: Examine the statistical tools for data collection and interpret results CO5: Create innovative solutions to existing nutrition problems in community
IMNDX4/ IMNDX4O	Diabetic Care and Education / *Online Course (Food science and Processing- Swayam)	CO1: Recite and relating the knowledge of diabetes pathologies CO2: Examine the modifications in nutrients and dietary requirements for therapeutic condition CO3: Categorize the recent concepts in the dietary management of diabetes CO4: Reflecting the skills in planning and preparation of therapeutic diets for diabetes CO5: Solve the complications by diabetic care and education

B Sc HOME SCIENCE- NUTRITION AND DIETETICS		
Course Code	**Course Title**	**Course Outcome**
IBNDC11	Food Science	CO1: Recall the different types of food groups and discuss the cooking methods adopting best practices CO2: Determine the composition and nutritive value of different food groups and role of cookery CO3: Analyze the physical and chemical changes occurring in different foodstuffs during various cooking process CO4: Assess the principles in cooking and its effect on sensory attributes and nutrients CO5: Summarize the effect of processing and storage on nutritional composition of foods
IBNDC12P	Food Science Practicals	CO1: Know the concept of cooking techniques and describe use of equipment for food preparation CO2: Identify the different food groups and physical and chemical changes during cooking process CO3: Link the acquired skills in food handling techniques CO4: Evaluate the sensory analysis of recipes CO5: Prepare different recipes using basic food groups
IBNDS14P	Yoga for Holistic health Practicals	CO 1: Understand the physical body and health concepts CO2: Apply and practice physical and mental stability in daily life CO3: Outline self-discipline and self-control in modern culture CO4: Integrate moral values CO5: Attain a higher level of consciousness
IBNDC21	Human Nutrition	CO1: Find the basic nutrients for human wellbeing and summarizing the types and role of micro and macro-nutrients CO2: Illustrate the metabolic role of nutrients and their complex interrelationships CO3: Inspect the functions, sources and requirements of Basic Nutrients for human beings CO4: Conclude the importance of Macronutrients and Micronutrients CO5: Discuss the various methods of energy determination

IBNDC22P	Human Physiology Practicals	CO 1: Understand the human physiological aspect of organs and distinguish the components of blood and urine CO 2: Apply knowledge to practice to handle tools related to blood analysis CO 3: Analyze the biochemical values on blood and urine by different experiments CO 4: Compare the normal and abnormal biochemical values on blood and urine CO 5: Create an awareness on First aid practice
IBNDA23	Human Physiology	CO 1: Recall the anatomy of various organs in the human system and explain their role in the maintenance of healthy individuals CO 2: Apply the knowledge to understand the functions of various organs in the human system CO 3: Analyze the Physiological changes at different stages of life CO 4: Compare how the functions of organs are integrated to maximum efficiency CO 5: Summarize the importance of hormones in various organs of the human system
IBNDS24P	Surface Embellishments Practicals	CO1: Outline the basic embroidery stitches CO2: Analyze the different methods of surface ornamentation techniques CO3: Identify and represent traditional embroideries of India using basic stitches CO4: Recommend the appropriate surface embellishment techniques to enhance the value of home furnishing and apparel fabrics CO5: Design and develop appropriate designs for embroidery in textile products
IBNDX2/ IBNDX2O	Food Hygiene and Sanitation /*Online Course(Maternal Infant Young Child Nutrition-Swayam)	CO1: Recall the importance of hygiene and sanitation in food industry and understand the knowledge relating to the significance of pest control CO2: Identify measures/procedures that will reduce or eliminate accidents in food preparation and service areas CO3: Analyze the pre-requisite procedures in food industry CO4: Evaluate the standards and procedures for keeping the facilities and equipment sanitary CO5: Provide the special Training of supervisory personnel in sanitation procedures

IBNDC31	Nutritional Biochemistry	CO 1: Recall the biochemical mechanisms of nutrition and metabolism and understand the knowledge of the principles of Biochemistry CO 2: Apply the knowledge to recognize the classification, structure and functions of macromolecules CO 3: Integrate the anabolic and catabolic pathways of all metabolic cycles CO 4: Assess the chemistry of micronutrients and their biochemical role CO 5: Summarize the activity of enzymes and co-enzymes in all metabolic pathways
IBNDC32P	Nutritional Biochemistry Practicals	CO 1: Understand and recognize the rule and regulations in the biochemistry lab to practice and perform the experiments in the safest way CO 2: Apply the knowledge to execute the qualitative determination of macromolecules. CO 3: Experiment with the parameters such as pH, Moisture, Ash, etc. in various food samples CO 4: Measure the quantity of nutrients in the various food samples CO 5: Create insight on advanced analytical instrument
IBNDA33	· Integrated Course -Food Microbiology	CO1: Understand the different microorganisms that can cause spoilage of foods and be able to detect them and explain the occurrence and interactions of microorganisms with food CO2: Illustrate the role of microorganisms in food safety CO3: Experiment the techniques in control of food spoilage CO4: Evaluate the methods of quality and microbiological control of foods CO5: Develop skills useful to detect the microorganisms in food
IBNDS34P	Nutrition Garden Practicals	CO1: Understand the importance of cultivation and discuss the various types layout. CO2: Illustrate the various types of soil and fertilizers. CO3: Explain the different beds for cultivation. CO4: Experiment the different methods of cultivation of plants CO5: Develop the practical skills on preparing their own nutria-garden

IBNDX3/ IBNDX3O	Marine Food Processing /*Online Course (Nutrition, Therapeutic and Health-NPTEL)	CO 1: Recall the factors that influence the quality and shelf-life of seafood and explaining the marine ecosystem CO2: Identify losses due to post-harvest, processing, and storage CO3: Analyze the nutritional advantages of marine products CO4: Solve spoilage problem by using various preservation and packaging techniques CO5: Evaluate the shelf life by experimenting with different processing and packaging methods
IBNDC41	Nutrition for Life Span	CO1: Identify the nutrient requirements during each stage of lifecycle CO2: Execute the diet plan for normal and special children CO3: Explain the importance of nutrition during physiological stages CO4: Evaluate the dietary pattern of adolescents, adult and old age CO5: Summarize the physiological, biological and psychological changes throughout life cycle
IBNDC42P	Nutrition for Life Span Practicals	CO1: Define the terminologies of human life span and explain nutritional requirements at different stages of the lifespan CO2: Prepare a menu planning for different age group CO3: Calculate the nutrients in the planned diet chart CO4: Validate the calculated nutrients to RDA CO5: Construct the food guidelines for different age group
IBNDA43	Human Development and Family Relationships	CO1: List out the stages of human development and demonstrate an understanding of the biological, psychological, social and cultural influences of lifespan human development CO2: Examine the development aspects (both normal and exceptional) from conception to old age CO3: Analyze the behaviour development of children CO4: Conclude the knowledge on the importance of children with special needs CO5: Compile complete knowledge about the family relations and sex education

IBNDS44P	Food Product Development Practicals	CO1: Define and interpreting the significance of dietary changes in the development of new products CO2: Identify a product's quality and sensory characteristics; CO3: Examine the food packaging in foods CO4: Construct the food product based on your knowledge of food ingredients and functional foods CO5: Assess the theoretical and practical knowledge in order to reproduce existing food products
IBNDX4/ IBNDX4O	Information, Education and Communication Material in Education. /*Online Course(Food and Nutrition for Healthy Living–Swayam)	CO1: Recall the process of preparing appropriate IEC materials and understanding the knowledge of communication CO2: Illustrate the various types of IEC materials CO3: Categorizing the emerging trends in educational technology CO4: Examining the communication technology in teaching CO5: Preparing the pedagogical tool for education
IBNDC51	Diet Therapy I	CO1: Recollect the principles of planning diet and discuss the role of dietician and basic concept of diet therapy CO2: Determine the routine hospital diets, special feeding techniques CO3: Point out the etiology, symptoms and complications for any life style disease CO4: Assess the nutritional requirement for acute and chronic illness CO5: Plana whole day menu for the acute and chronic illness
IBNDC52P	Diet Therapy I Practicals	CO1: Describe the importance of menu for different illness and explain the need of menu modification CO2: Apply the therapeutic diets using food exchange lists. CO3: Structure the dietetic practices followed in Indian hospital CO4: Detect the nutritive value of Indian foods CO5: Calculate a whole day menu for acute and chronic illness
IBNDC53	Community Nutrition	CO1: Identify the nutritional problems in India and gain knowledge on measures to overcome malnutrition CO2: Articulate the greater exposure to assessment of nutritional status CO3: Analyze knowledge about assessment of nutrition education CO4: Assess the concepts of health and epidemiology of communicable diseases CO5: Create awareness on nutritional programmes in national and international organizations

IBNDE5A/	a.Family Resource Management /	CO1: Define the principles and elements involved in management CO2: Apply the concepts of management process in family CO3: Distinguish the different aspects of human and non-human resources CO4: Assess knowledge about the standard of living and decision making process CO5: Manage the different forms of resources
IBNDE5B	b.Basics of Textile and Apparel	CO1: Recall the basic concept of textile and apparel and understanding the knowledge of textile material CO2: Identifying the methods of fabric formation and processing CO3: Analyzing the concept of apparel design elements and fashion cycle CO4: Assessing the design development and apparel production CO5: Develop knowledge about Indian traditional textiles and embroidery
IBNDE5C/	a. Food Service Management/	CO1: Explain the interdependent components of the international hospitality and tourism industry and understand the roles of national and state visitors' authorities, marketing and sales CO2: Apply management skills needed in a food service production CO3: Emphasize problem solving tools with in food service careers CO4: Evaluate the professional lodging specific technical skills, supervisory techniques and management skills in food service management CO5: Monitor the quality control in food product and service
IBNDE5D	b. Post-harvest Technology	CO1: Recall the principle underlying Post-Harvest Technology and understand the knowledge of post-harvest management of foods CO2: Classify the importance and methods of post-harvest conservation of foods CO3: Outline the post-harvest processing in Major crops CO4: Estimate the shelf stability of product in storage and post-harvest processing of temperate crops CO5: Determine the quality parameters of plantation crops during Post-harvest operations

IBNDS54P	Food Preservation Practicals	CO1: Define food preservation and indicate the different types natural and chemicalpreservatives used for food preservation CO2: Apply the methods of preserving foods by adding salt (Vathal Vadakkam) CO3: Demonstrate on different methods of food preservation techniques CO4: Evaluate the different preparation methods of spice products CO5. Formulate the different preparation methods of fermented
IBWE5	Women Entrepreneurship	CO 1: Understand the role of women entrepreneurship in different facets ofsociety CO 2: Knowthe various livelihood supports for women Employment opportunities CO 3: Elucidate the role of various developmentalschemes supporting women entrepreneurship CO 4: Examine the various governmental and non-governmental support offered to the entrepreneurs CO 5: Criticallyanalyze various entrepreneurship schemes in India
IBNDC61	Diet therapy II	CO1: Recall the clinical condition of therapeutic condition and describe the modifications in nutrients and dietary requirements for therapeutic condition CO2: Implement the foods to specific disease pathologies that require diet modification in order to restore homeostasis in patients CO3: Analyze the nutritional and food requirements for different therapeutic conditions CO4: Assess the knowledge on etiology, clinical manifestation, metabolic aberrations and complications linked with adverse food reactions CO5: Build recent concepts in dietary management of different diseases and preparation of therapeutic diets for various disease

IBNDC62P	Diet therapy II Practicals	CO1: Identify the discovered diets during the different therapeutic conditions and interpret normal health to therapeutic conditions CO2: Inspect skill development in planning therapeutic diets using food exchange lists CO3:Choose an accurate dietary assessment, calculate the nutritional requirements, plan appropriate nutritional care, and explain the process of objective setting in the delivery of a nutritional care plan for a client CO4: Compare the calculated nutrients with RDA CO5: Generate the plan menu for low immunity people
IBNDC63	· Integrated Course Food Safety and Quality Control	CO1: Recall the application of food quality and food safety system and explain the international systems of standards CO2: Illustrate the importance of food quality standards CO3: Examine the chemical and microbiological quality of food samples CO4: Evaluate the adulteration in food samples CO5: Review of legislative approaches for the management of food safety
IBNDC64P	#Dietetic Internship	CO1: Identify nutrition-related problems and determine and evaluate nutrition interventions CO2: Explain the work of inter professional teams and the roles of others with whom the registered dietitian nutritionist collaborates in the delivery of food and nutrition services. CO3: Interpret and apply nutrition concepts to evaluate and improve the nutritional health of individuals with medical conditions CO4: Apply the knowledge for diet counseling and competent to manage catering outlet CO5: Determine and translate nutrient needs into menus for individuals and groups across the lifespan, in diverse cultures and religions
IBNDE6A/	a. Food Adulteration	CO1: Know the standards for quality assessment and food safety against adulteration for various foods and understand the adulteration of common foods and their adverse impact on health CO2: Relate the concept of adulteration in food products. CO3: Detect the adulteration in food samples CO4: Comprehend certain skills of detecting adulteration of common foods CO5: Familiarize with critical assessment and control points for quality assurance.

IBNDE6B	b. Nutrition for Sports and Physical Fitness	CO1: Recall the concept of nutrition on sports and fitness and understanding ofthe relationship between nutrition and exercise performance CO2: Apply the concept of fluid balance in sportsperson CO3: Analyze the weight management in fitness and sports people CO4: Assess on different types of micronutrients need for their fitness CO5:Role-playon Antioxidant in sports and Fitness
IBNDS65P	Food Adulteration Practicals	CO1: Highlight the common food adulterants and discuss the advantage and disadvantages of food adulterants CO2: Summarize the knowledge in the aspects of adulteration CO3: Explain the various adulterants used in food samples by testing the samples CO4: Investigate the food adulteration by its qualitative analysis CO5: Create awareness about adulteration by finding the chemical materials present in food substances
IBNDX6/ IBNDX6O	Waste Management in food industries /*Online Course.(Food Science and Processing -Swayam)	CO1: Define and summarizing the agricultural waste and by products that are beneficial CO2: Categorize a variety of waste-treatment equipment CO3: Establish various wastewater treatment and disposal technologies CO4: Choose from a number of waste water treatment options, all of which are available from a various sources CO5: Evaluate how byproducts and waste materials are utilized
IBOE3HS	Food Preservation Techniques	CO1: Recognize the principles of food preservation and explain the different types of preservationtechniques CO2: Practice the skills in methods of food preservation CO3: Prioritize the perishable and non-perishable foods from microbial contamination andmicrobial spoilage CO4: Critique the doses of preservatives and irradiation rays in foods to control the food spoilage CO5: Formulate thepreservationof foods using salt, sugar, and chemicals

B Sc Fashion Designing		
Course Code	**Course Title**	**Course Outcomes**
IBOE4HSP	Basic and Advanced Hand Embroidery Practicals	CO1: Outline the basic embroidery stitches CO2: Analyze the different methods of surface ornamentationtechniques CO3: Identify the advance embroidery works CO4: Recommend the appropriate surface embellishment techniques to enhance the value of home furnishing and apparel fabrics CO5: Design and develop appropriate designs for embroidery in textile products
IBCHA14/ IBMBA13	AECC-I Biochemistry I	CO 1: Relate the physical and chemical properties of various biomolecules andunderstand the knowledge of the principles of Biochemistry CO 2: Apply the knowledge to recognize the classification, structure and functions of Macromolecules CO 3: Integrate the properties of all Macromolecules. CO 4: Inspect and understand the basics of genetic material CO 5: Summarize the chemistry of micronutrients and their biochemical role
IBCHA24/ IBMBA23	AECC-II Biochemistry II	CO 1: Recall the metabolic pathways of various biomolecules and understand the activity ofenzymes and co-enzymes in all metabolic pathways CO 2: Apply the knowledge to recognize the anabolic and catabolic pathways of all metabolic cycles CO 3: Calculate and understand the energyproduction in everymetabolic pathway. CO 4: Inspect and understand the dogma of life. CO 5: Summarize the Energycalculation for all metabolic pathways
IBFDC11	Fundamentals of Apparel Designing [Theory cum Practicals]	CO 1: State the functions of sewing machines and identify the parts CO 2: Applythe finishing method to the fabric CO 3: Analyze the basic types of sleeves, collar and pockets. CO 4: Experiment the components of apparel designing CO 5: Createdifferent finishes and its applications

IBFDC12	Principles of Pattern Making	CO 1: Understand the basics of pattern making and list out the types of pattern CO 2: Illustrate the designs and selectionof pattern making principles CO 3: Assessthe basic pattern setsusing pattern making techniques CO 4: Examine thegarment fitting, alteration methodologies and assembling techniques CO 5: Develop creative designs through draping, drafting, flat pattern method
IBFDA13P	Fashion Illustration I Practicals	CO 1: Understand the basic fashion sketching and classifythe various head theories CO 2: Illustrate the different texture and designs CO 3: Draw the different styles of garment designing CO 4: Experiment the coloring techniques- pencil drawing, posters, water colors CO 5: Develop theown individualstyles
IBFDS14	Fibre to Yarn	CO 1: Understand the natural and man-made fibers, identifying their uses CO 2: Determine the properties and manufacturing process of textile fibers CO 3: Analyze the yarn development process CO 4: Compare the Sewing thread with textile yarn CO 5: Summarize the classification and quality of fiber and yarn
IBFDC21P	Fashion Illustration II Practicals	CO 1: Recall the different styles of illustrationtheclassifying with accessories CO 2: Sketch the movement of fashion figures CO 3: Analyze the various proportions CO 4: Develop skills in the field of drawing CO 5: Create the trendy fashion figures
IBFDC22	Historic Costumes &Traditional Design	CO 1: Understanding the origin of costumes and classifying is history CO 2: Determine theregionalvariationof costume and designs, motifs in different states CO 3: Awareness about the historic and traditional costumes in various occasions CO 4: Apprise the various traditional methods used for decorative designing CO 5: Develop variousdyeing and printing and their terminologies

IBFDA23P	Construction for Children's Apparel Practicals	CO1: Understand the kid's costume and classified suitable wear for different age groups CO2: Apply the pattern making techniques for constructing garment CO3: Estimate the layout and cost of the garment CO4: Evaluate measurements required and materials suitable CO5: Create different kids wear garments
IBFDS24P	Surface Embellishments Practicals	CO1: Understand the basic embroiderystitches and classifying the variations CO2: Analyze the different methods ofsurface ornamentation techniques CO3: Analyze the traditionalembroideries of India CO4: Recommend the appropriate surface embellishment techniques to enhance the value of home furnishing and apparel fabrics CO5: Design and develop appropriate designs for embroidery in textile products
IBFDX2P	Fashion Accessory Designing Practicals	CO1: Understand the fashion accessories; identify the recent trends and product development CO2: Experiment motif based on different hand knitting methods CO3: Prepare the accessories by refashioning fabrics CO4: Develop the various styles of fashion accessories CO5: Create innovative accessorydesigns
IBFDC31	FashionStudies	CO1:Identify the meaning of fashion, understanding the fashion studies CO2: Discover the current trends in fashion CO3: Apply the fashion elements and design principles CO4: Investigate fashion psychology and evaluation CO5: Create a new design implementation of fashion
IBFDC32	Wet Processing – Dyeing [Theory Cum Practicals]	CO1: Statethe dyeing and printing process, understand sequence of processing CO2: Demonstrate the dyes and printing equipment and machineries CO3: Estimate dyes for types of fabrics CO4: Experiment thedyeing and printing methods CO5: Create the fabric samples using dyeing, printing methods

IBFDA33P	Construction for Women’s Apparel Practicals	CO1: Understand the body structure and identify the suitable fabric for women's wear CO2: Interpret methods of drafting for different types of garments CO3: Experiment the list out the measurements required and materials suitable CO4: Estimate the cost of the garment CO5: Create the various designs in women's wear
IBFDS34P	Draping Techniques Practicals	CO1: Acquire the skills of draping on dress form by an introduction to terminology, understanding fundamentals and advanced techniques of draping CO2: Identifyabout customfitted, basic pattern to prepare manydifferent styles CO3: Analyze the various parts ofthe garments CO4: Manipulate the basic draping into designer costumes drape CO5: Developthe structure of a garment design using draping techniques
IBFDX3P/ IBFDX3O	"""Boutique Internship /*Online Course"" (Advanced TextilePrinting Technology-NPTEL)	CO1: Understand the structure and, identifythe process ofthe boutique CO2: Analyze the functions of various sections in the organization CO3: Predict the short term and long terms targets of an organization CO4: Justifythe impact oforganization for the Society CO5: Create client data as per recruitments withplanning and execution
IBFDC41P	Construction for Men’s Apparel Practicals	CO1: Understand the men’s apparel, identifying the suitable fabric CO2: Interpret methods of drafting for different types of garments CO3: Experiment the list out the measurementsrequired and materials suitable CO4: Estimatethe cost of the garment CO5: Create avarious design in men’s wear
IBFDC42	· Integrated Course - Technical Textiles	CO1: Understand the technical textile, identify the applications CO2: Implement the chemicalcomposition of fibers CO3: Differentiate various finishes intechnical textiles CO4: Examine the fabrics suitable for protective and survival textiles CO5: Develop the knowledge of smart and intelligent textiles

IBFDA43	Fabric Structure & Design [TheoryCum Practicals]	CO1: Understand the fabric structureand classifying the weaving, knitting processes CO2: Illustrate the design, draft, pegplan of weaves and knit Structure CO3: Apply the methods of compound fabric CO4: Compare the different types of woven and knit structure CO5: Create and develop textiles designs
IBFDS44	Clothing Care and Maintenance	CO 1: Understand the care and maintenance of fabrics, classifying the process. CO 2: Determine the suitable methods of washing, drying, ironing and storing of the fabric CO 3: Appraise the types of equipment used in the cleaning fabrics CO 4: Evaluate the methods of caring to be used for a better life of clothes CO 5: Develop the care and maintenance of fabric packaging and finishing
IBFDX4P/ IBFDX4O	Internship in Textile Processing-Manufacturing Unit/*Online Course(Basic of Pattern Making and Sewing - Swayam) Total	CO1: Understand the structure oftextile industry, identifythe process unit CO2: Analyze the methods adopted inthe training place CO3: Predict the short term and long terms targets of an organization CO4: Analyze the textile processing procedure CO5: Create the report for end ofthetextile processing internship
IBFDC51P	Computer Aided Design (CAD) Practicals-I	CO1: Understand thedesigning software, identifying the menus and tools CO2: Develop elements and principles of design using software CO3: Create motif design for embroidery CO4: Illustratea garment designing children, women’s and men’s garment CO5: Createdigital logo, label for branded garments
IBFDC52	# Internship- Fashion Merchandising and Marketing	CO1: Understand the purpose of merchandising, identifying marketing strategies in the industries CO2: Interpret merchandising plan and sales forecasting CO3: Organize creative design process of merchandising CO4: Analyze the elementsof costing, sourcing and pricing CO5: Develop the production systems and implement quality control

IBFDC53	Boutique Management	CO1: Understand the structure of boutique, identifying the management processes CO2: Interpret a boutique infrastructure requirements and visual merchandising techniques CO3: Organize and manage the human resources CO4: Analyze boutique marketing tools and material sourcing CO5: Prepare the financial resources for a boutique
IBFDC54P	Home Furnishing Practicals	CO1: Understand the home furnishing, classifying materials and process. CO2: Implement skills in creating their own home furnishing items CO3: Experiment wall and floor covering materials CO4: Chooseagood fabrics for home furnishing CO5: Manageaneffective home furnishing freelance designer
IBFDE5A/	a. Apparel Quality Control/	CO1: Understand the importance of quality control, identifying the apparelquality control process CO2: Integrate consumer, aesthetic and quantitative trend information into the product development process CO3: Estimate the new value into an existing product or line while holding costs CO4: Evaluate the fabric and sewing defects CO5: Manage the fabric qualityand standards
IBFDE5B	b. Apparel Production Management	CO1: Understand the production structure, identifying production management of the global textile/apparel industries CO2: Demonstrate effective leadership, teamwork, and communication skills CO3: Explain the plant locationand balance the garment industry CO4: Evaluate the work measurement of apparel production management CO5: Develop the present merchandise lines for identified market segments

IBFDE5C/	a.Home Furnishing	CO1: Understand the home furnishing, identifying suitable materials and products CO2: Apply care and maintenance of home furnishing products CO3: Analyze the types of floor coverings and its maintenance CO4: Evaluate the recent trends in home furnishing CO5: Prepare the doors and windows coverings
IBFDE5D	b.Apparel Business Accounting and Entrepreneurship	CO1: Identify the business accounting, understanding entrepreneurship skills among the students in the textile/apparel field CO2: Explaining the accounting procedure and process of setting up new enterprises to the students CO3: Analyze the managing role of the entrepreneur CO4: Developing awareness in the rules and policies of the enterprises CO5: Organizing production process and business support to entrepreneur
IBFDS55P	Textile Printing Practicals	CO1: Identify the wet processing, understanding the various textile printing and dyeing processes CO2: Prepare preliminary process of printing and dyeing methods CO3: Experiment the printing and dyeing methods used in a variety of fabrics CO4: Apply the printing and dyeing to the fabric CO5: Create Printing and dyeing structures on fabric
IBFDC61	· Integrated Course – Fashion Photography and Modeling [Theory Cum Practicals]	CO1: Understand the basics of photography, identifying elements and principles CO2: Demonstrate the part of camera parts and types ofDSLR camera CO3: Compare natural and artificial lights in camera CO4: Develop knowledge in modeling walk, photogenic skills CO5: Prepare fashion photographs in various angles and types of photography
IBFDC62	Fashion Retailing & Research	CO1: Identify fashion product retailing; understand a theoretical and technological knowledge of current business CO2: Determine the retail business and retail stores, professionalpractices leading to marketing and merchandising fashion products both locallyand globally CO3: Analyze the retail merchandising private brand labels and trade shows CO4: Evaluate the measures of productivity, merchandising and pricing CO5: Arranged retail store layout and visual merchandising for presentation

IBFDC63P	Fashion Portfolio Presentation Practicals	CO1: Understand the development of portfolio presentation techniques, identifying researchand forecasting of recent themes CO2: Apply the inspiration to thetheme portfolio CO3: Create portfolio board according to an individual theme CO4: Researchand relate fashion design to a broader socio economic, historical, and environmental context CO5: Create a collection of portfolio garments in various season
IBFDC64	Event design and Management	CO1: Understand theprinciples of event management, identifying the theme base event CO2: Construct a suitable background effect using different fabrics CO3: Compose and plan for various events CO4: Illustratedifferent styles and layout for furnitureand flower arrangement CO5: Organizethe event skillfully
IBFDC65P	# Internship- Computer Aided Design (CAD) Practicals-II	CO1: Identifythe variety ofdigital image making techniques, understanding the technical illustration, pattern manipulation and design layout CO2: Applythe pattern, grading and design development to the fashion industry CO3: Analyze the pattern grading for children, women and men CO4: Design digital textile weave structure and jacquard design CO5: Prepare digital business card and customer profile
IBFDE6A/	a. Fashion Communication	CO1: Identify the clothing and fashion classify the fashion communication CO2: Applythe fashion design workofothers and providing constructive criticism forongoing work CO3: Justifying ideas suitable for photography and fashionpublication CO4: Compose fashionarticles and future for digital media CO5: Create knowledge of fashion magazines and brochures for advertisement

IBFDE6B	b. Textile Testing	CO1: Understand the testing terminologyand identifying the statisticaltools in textile testing CO2: Apply the varies testing for fiber to fabric CO3: Analyze the garment testing method CO4: Evaluate the fiber and yarn properties CO5: Develop the Knowledge oftextile testing methods
IBFDS66P	Fashion Styling Practicals	CO1: Understand the skills to develop design capability in lifestyle, classifying the products and styles CO2: Acquire the beauty products and identify recent trends CO3: Cultivate aesthetic sensibilities and build on craftsmanship skills CO4: Analyze the various events and situation handling CO5: Develop personal grooming and makeup skills
IBFDX6PW / IBFDX6O	Mini Project / *Online Course (Textile & Quality Analysis-Swayam)	CO1: Understand the working structure of company identifying the design development department CO2: Analyze the methods of design development CO3: Assess the process through work experience within the company CO4: Develop the portfolio boards regarding project theme CO5: Create the report for complete project
CERTIFICATE PROGRAMME IN APPAREL DESIGNING & CONSTRUCTION		
FCAD1P	Apparel Designing& Construction Practicals	CO1: State the functions of sewing machines and identify the parts CO2: Interpret methods of drafting for different types of garments CO3: Experiment the components of apparel designing. CO4: Estimate the cost of the garment. CO5: Create a various design in women's wear
CERTIFICATE PROGRAMME IN FOOD PROCESSING AND PRESERVATION		
HCFP1	Food Processing and Preservation	CO1: Define food preservation and understand the basic knowledge of microbial application infood preservation CO2: Apply the knowledge in preserving foods by laboratory and household measures CO3: Demonstrate on different methods of food preservation techniques CO4: Evaluate the microbial qualityof foods CO5: To make the students understand the basic principles underlying food Preservation

HCFP2P	Food Processing and PreservationPracticals	CO1: Define food preservation and understand the basic knowledge of microbial application infood preservation CO2: Apply the knowledge in preserving foods by laboratory and household measures CO3: Analyze the practical knowledge on principles and methods of preservation CO4: Enable students to do recipes based on preservation methods CO5: Make the students understand the basic principles underlying food preservation
CERTIFICATE PROGRAMME IN CLINICAL DIETETICS		
HCCD1	Clinical Dietetics	CO1: Recollect the principles of planning diet and discuss the role of dietician and basicconcept ofdiet therapy CO2: Determine the routine hospital diets, special feeding techniques CO3: Point out the etiology, symptoms and complications for any life style disease CO4: Assess the nutritionalrequirement for acute and chronic illness CO5: Plan a whole day menu for the acute and chronic illness
HCCD2P	Clinical Dietetics Practicals	CO1: Describe the importance of menu for different illness and explain the need of menu modification CO2: Apply the therapeutic diets using food exchange lists. CO3: Structure the dietetic practices followed in Indian hospital CO4: Detect the nutritive value of Indian foods CO5: Calculate a whole day menu for acute and chronic illness
CERTIFICATE PROGRAMME IN YOGA FOR HOLISTIC HEALTH		
HCYH1	Introduction to yoga	CO1: Understand the physical body and health concepts CO2: Possess the basic Knowledge on Loosening Exercises and Asana and Pranayama CO3: Impart the Knowledge on Kriyas and Meditation. CO4: Introspect to improve the behavioural changes CO5: Develop the mentalprosperityof human

HCYH2P	Yoga Practical	CO1: Promote Positive Health in the Student through Yoga CO2: Impart skills in them to practice yoga CO3: Regulate the inter-personal, behavioural concepts of human life overcome various physical and mental stress of life activities CO4: Impart skills in them to introduce Yoga for health to general public and Yoga fortotal personality development of students CO5:Promote positivehealth,prevention of stress relatedhealth problems and rehabilitation through Yoga
DIPLOMA IN BAKERY AND CONFECTIONERY		
IDBC11	BakeryTheory I	CO1: Outline the various properties of raw materials in bakeryand confectionery industries CO2: Discuss methods involved in manufacture of bakery products CO3: Compile technical knowledge in bakery CO4: Explain the physical factors ofdough CO5: Knowthe importance ofproper food plant design and safety
IDBC12	Confectionery Theory I	CO1: Explain the different ingredients used in confectionery CO2: Demonstrate working knowledge of Chocolate and Sugar confectionery CO3: Understand Food Microbiology, Food Contamination and Spoilage CO4: List down the steps in preparing Icings and frozen dessert CO5: Elaborate the role offood additives in bakeryand confectionery
IDBC13P	BakeryPracticals I	CO1: Identify anddifferentiate the small and large equipment in bakery CO2: Identifyand check for quality of different types ofingredients used in bakery CO3: Prepare and Present yeast fermented products CO4: Prepare and Present flavored breads CO5: Prepare and Present Breakfast bread
IDBC14P	Confectionery Practicals I	CO1: Defineand explain different pastries andderivatives CO2: Make plan & identify the different ingredients to preparedifferent icing CO3: Prepare and Present international cakesand puddings CO4: Prepare and Store Ice Creams, Toffees and Indian Sweets CO5: Abilityto work with chocolate and sugar to create design, plates and show pieces

IDBC15	Entrepreneurial Skills and Productivity	CO1: Acquire the knowledge to create a new business plans CO2: Understand the functions ofentrepreneur CO3: Improve theentrepreneurship skills CO4: Risk assessment of entrepreneur CO5: Explore the financial management in an enterprise
IDBC21	BakeryTheory II	CO1: Highlight the processing methods used in baking and confectionery industries CO2: Know about the various types of food products made using baking technology CO3: Have a basic idea about baking and confectionery manufacture and qualitycontrol CO4: Know about the importance of each ingredient in the bakery and how it affects the overallproduct and its sensory and quality parameters. CO5: Able to start a small scale bakery and confectionery unit.
IDBC22	ConfectioneryTheory II	CO1: Understand the importance and role ofvarious ingredients used in bakery and confectionary CO2:Explain the importance offood costing and costing techniques. CO3: Understand the different types ofbiscuits, cookies and their methods ofmanufacturing CO4: Develop standard recipes and adjust the quantities using adjustment factor CO5: Understand the different typesofsugar confectionaryproducts and their process products.
IDBC23P	BakeryPracticals II	CO1: Explore the concepts and processes required to produce a selection of specialty breads to include yeast/gluten breads and enriched dough CO2: Demonstrate the ingredients of different 3 cakes and baking procedure CO3: Design preparation methods to finishing techniques CO4: Acquire skills in the preparation of food CO5: Demonstrate mastery of all basic baking formulas necessary to manage a pastry operation or department.

IDBC24P	ConfectioneryPracticals II	CO1: Explore with innovation the concepts of composition, taste, design, texture and current trends for pastry through practical skills and related theory. CO2: Develop techniques to adapt classical dishes and confectionery products to a contemporary style. CO3: Evaluate and apply the techniques necessary to create a comprehensive range of chocolate work. CO4: Creative modern plated desserts, and individual pastry products. CO5: Abilityto work with chocolate and sugar to create design, plates and showpieces
Certificate course in Food Preservation Technology		
GCFP1	Food Preservation Technology	CO1.After successful completion of this course, student will be able to: CO2.Define food preservation and understand the basic knowledge of microbial application in food preservation CO3.Apply the knowledge in preserving foods by laboratory and house hold measures CO4.Demonstrate on different methods of food preservation techniques CO5.Evaluate the microbial quality of foods

THASSIM BEEVI ABDUL KADER COLLEGE FOR WOMEN

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DEPARTMENT OF COMPUTER SCIENCE & RESEARCH CENTRE

Academic Year: 2022-2023

Course Outcomes

Class: I MCA (Odd Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	IMCAC11	Core I - Java Programming	**CO1:** Explain the concepts of Java Basics, Control Structures, Loops, Functions, Arrays, Classes, Inheritance, Thread, Applet, Swing, Servlet and JSP **CO2:** Utilize the techniques of AWT and Swing to create various fields **CO3:** Examine an implementation of Applet with Java for setting up fonts and its style **CO4:** Evaluate different types of JDBC drivers, connectivity and exceptions **CO5:** Design the web application using swing, servlet, JSP and JDBC
2.	IMCAC12	Core II - Data Structures and Algorithms using Python	**CO1:** Explain the concepts of linear and Non-linear data structures **CO2:** Apply linear and non-linear data structures and its algorithms in real time applications **CO3:** Analyze the efficiency of algorithms with Python **CO4:** Compare different sorting algorithms **CO5:** Develop different algorithm design techniques
3.	IMCAC13	Core III - RDBMS	**CO1**:Explore about DBMS architecture, database designs, database modeling **CO2**:Extend about ER-Diagram and UML, Relational Algebra and Relational Calculus **CO3**:Distinguish the normalization theory **CO4**:Apply Structured query language (SQL) and Constraints **CO5**:Evaluate various transaction processing, concurrency control mechanisms and database protection mechanisms
4.	IMCAC14	Core IV - Optimization Techniques	**CO1:**Explain characteristics of Operational Research, Computational Efficiency of the Simplex Technique, Transportation Problems, Assignment problem and Duality **CO2:**Apply Graphical, Simplex methods, Assignment Problem, Transportation Problem and Dual Simplex Method methods to get optimal solution for Linear Programming

			CO3: Analyse the optimal solutions of different Linear Programming methods such as Graphical, Simplex method, Assignment Problem and Transportation Problem and Dual Simplex methods for making effective business decisions **CO4:**Compare Solutions of as Graphical, Simplex and Dual Simplex method **CO5:**Generate dual of LPP and dual of Transportation Problem
5.	IMCAC15P	Core V - Java Programming Lab	**CO1:** Demonstrate the concepts such as OOPs, Array to implement Java code **CO2:** Apply an event handling using swing and AWT components **CO3:** Illustrate the concept of Applets in Java program **CO4:** Discover the database access through Java code using JDBC connectivity **CO5:** Create dynamic web pages using Servlet and JSP
6.	IMCAC16P	Core VI - Data Structures and Algorithms with Python Lab	**CO1:** Describe the Python language syntax including control statements, loops and functions to write programs for a wide variety problem in mathematics. **CO2:** Examine the core data structures in python to store, process and sort the data. **CO3:** Basic knowledge of condition checking **CO4:** Implement the structure of algorithm **CO5:** Examine the file and array concept
7.	IMCAX1P/ IMCAX1O	Extra Credit I - RDBMS Lab / *Online Course	**CO1:**Demonstrate DDL, DML and TCL Commands **CO2:**Apply the basic concepts of Database Systems and Applications **CO3:**Illustrate the use of implementing constraints in tables **CO4:**Implement normalization queries using SQL in database creation and interaction **CO5:**Design ER-models to represent simple database application scenarios

Class: I MCA (Even Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	IMCAC21	Core VII - Web Technology	**CO1:** Explain the fundamentals of web development technologies **CO2:** Apply the different tags to develop a dynamic webpage using JavaScript, JSP and ASP **CO3:** Able to write a well formed /valid XML document **CO4:** Justify best technologies for solving web client/server problems **CO5:** Build web pages using various web design languages
2.	IMCAC22	Core VIII - Computer Organization	**CO 1**: Define the fundamental organization of a computer system **CO 2**: Explain the concept of sequencing,

			designing, pipeline and vector processing methods **CO 3**: Examine the function of input-output organization **CO 4**: Compare various pipeline concepts **CO 5**: Distinguish the organization of various parts of a system memory hierarchy
3.	IMCAC23P	Core IX - Web Designing Lab	**CO1:** Explain the basics of all HTML tags to create the static web page **CO2:** Apply the concepts of table and list in HTML **CO3:** Examine the use of style sheets, frames and hyperlinks **CO4:** Evaluate the concept of validation using JavaScript **CO5:** Create a dynamic website
4.	IMCAC24P	Core X - Data Analytics Lab	**CO1:**Outline Excel functions to solve mathematical, text, date and time operations, R functions for numerical operations and Scilab functions for matrix operations **CO2:**Demonstrate the concepts of sorting, filtering using Excel **CO3:**Illustrate statistical operations using R **CO4** Evaluate the Regression and Clustering **CO5:**Develop programs to solve equations by Gauss elimination, Gauss Jordan Method and Gauss Seidel
5.	IMCAE2A	DSE I - a. Cloud and Distributed Computing	**CO1:**Identify the features of Cloud Computing and Virtualization **CO2** Demonstrate the leader election and cloud native computing **CO3:**Classify types of cloud assets, Software-Defined Networking and Network Function Virtualization **CO4:**Justify cloud storage, Identity and Access Management **CO5:**Generate the Classical Distributed Algorithms, the Industry Systems and Cloud applications
6.	IMCAE2C	DSE I - c. Data Analytics	**CO1:**Describe Data sources, generations, data formats, Data Evolution, Data from various domains **CO2:**Determine Big Data Characteristics, Frameworks, components and Limitation of traditional approaches and map Big Vs to Data Domains **CO3:**Analyse various domains of Data Characteristics, Platform, Programming Model and Design Data Analytic ecosystem, and data processing framework **CO4:**Evaluate the Concepts of Data Analytics Phases and Techniques **CO5:**Formulate Data Analytics Techniques practically using R environment
7.	IMCAE2D	a. DSE II – a. Compiler	**CO1:**Define common forms of parsers

		Design	**CO2:**Illustrate compiler construction tools and describes the Functionality of each stage of compilation process **CO3:**Construct Grammars for Natural Languages and find the Syntactical errors/Semantic errors during the compilations using parsing techniques **CO4:**Analyze different representations of intermediate code **CO5:**Design to construct new compiler for new languages
8.	IMCAE2E	DSE II – b. Cryptography and Network Security	**CO1:** Define various Cryptographic Techniques **CO2:** Demonstrate various data encryption techniques **CO3:** Explain the encryption standard and asymmetric ciphers **CO4:** Analyze Hashing and Digital Signature techniques **CO5:** Discuss various Security Applications
9.	IMCAE2F	DSE II – c. BlockChain Technologies	**CO1:** Illustrate the Fundamental Concepts of Block chain and uses of Bitcoin **CO2:** Apply Cryptography Algorithms in block chain **CO3:** Classify a transactions in Bitcoin **CO4:** Explain the concept Decentralization, BitCoin, Ethereum in Block chain **CO5:** Develop Private block chain environment and smart contracts in recent trends by using Ethereum
10.	IMCAX2P/ IMCAX2O	Extra Credit II - #Internship / *Online Course	**CO1:**Understand self-understanding, self-confidence, and interpersonal skills **CO2:**Assess Strengths, Weaknesses, Opportunities and Threats (SWOT) and explore career options and gain general work experience **CO3:**Examine any specific learning outcomes identified in supplemental documentation provided as part of the internship application process **CO4:**Apply various soft skills such as time management, positive attitude and communication skills during performance of the tasks assigned in internship organization **CO5:**Create the document which contains company profile by compiling the brief history, management structure, products / services offered, key achievements and market performance for organization of internship

Class: I BSc Information Technology (Odd Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	IBITC11	Core I - Principles of Information Technology	**CO1:**Summarize the concept of computer system, architecture, network, memory **CO2:**Explain how computers are networked and how an operating system interacts with hardware **CO3:**Illustrate the working of voice and data communication systems and networks

			CO4: Evaluate and measure the performance of computer security and virus **CO5:**Develop the applications in multimedia and cloud computing
2.	IBITC12	Core II - Digital Electronics	**CO1:** Remember the basic structure of number system methods like binary, octal and hexadecimal **CO2:** Apply the functions to simplify the logical expressions **CO3:** Analyze the operations of various logical circuits **CO4:** Evaluate the functions of the memory organization **CO5:** Create the sequential and combinational logic circuits
3.	IBITS14P	SEC I - Office Automation Lab	**CO1**: Illustrate various options of office application **CO2**: Demonstrate different types of formats, formulas and transition in office application **CO3**: Develop reports to solve the problems of manual report handling **CO4**: Compare the options of different Microsoft office applications to use appropriately **CO5**: Build a presentation, advertisement, reports etc for enterprises

Class: I BSc Information Technology (Even Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	IBITC21	Core III - Programming in C	**CO1:** Describe the basic programming knowledge of C, operators and expressions **CO2:** Demonstrate data input and output, control statements & functions **CO3:** Analyse program structure and arrays **CO4:** Evaluate strings and pointers **CO5:** Formulate structures, unions and file handling
2.	IBITC22P	Core IV - Programming in C Lab	**CO1:** Remember the control structures and loops **CO2:** Apply the concepts of functions and pointers **CO3:** Analyze the concepts of structures and arrays **CO4:** Evaluate string handling functions **CO5:** Create programs with pointers, arrays and structures
3.	IBITS24P	SEC II - Designing Lab	**CO1:** Recognize the uses of various tools and effects in GIMP **CO2:** Identify the steps to start designing with images **CO3:** Simplify the process of designing, editing, masking etc. to solve the difficulties of designers **CO4:** Support studios to create passport size photo **CO5:** Design visiting card, ID card, birthday card, logo etc.
4.	IBITX2P/ IBITX2O	Extra Credit I - Corel Draw Lab/ * Online Course	**CO1:** Describe the concepts of tools and techniques in CorelDraw **CO2:** Apply the concept of Creation and modification of objects for graphic design purposes **CO3:** Analyze various tools to design Flyers

			CO4: Develop any kind of LOGO using techniques in CorelDraw **CO5:** Build design magazine and presentations

Class: I BSc Computer Science (Odd Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	IBCSC11	Core I - Fundamentals of Computers	**CO1:** Summarize the basics of computers and its generations **CO2:** Illustrate number systems and its conversions **CO3:** Analyze the uses of internal and external components of computers **CO4:** Select appropriate input and output devices for digital literacy according to its intended use **CO5:** Formulate the methods to handle Multimedia Applications
2.	IBCSC12	Core II - Computer Organization	**CO1**: Define the fundamental organization of a computer system **CO2**: Explain the concept of sequencing, designing, pipeline and vector processing methods **CO3**:Examine the function of input-output organization **CO4**: Compare various pipeline concepts **CO5**: Distinguish the organization of various parts of a system memory hierarchy
3.	IBCSC13P	Core III - Office Automation Lab	**CO1:** Illustrate various options of Office Application **CO2:** Demonstrate different types of formats, formulas and transition in office application **CO3:** Develop reports to solve the problems of manual report handling **CO4:** Compare the options of different Microsoft Office Applications to use appropriately **CO5:** Build a presentation, Advertisement, Reports etc. for enterprise
4.	IBCSA14	AECC I - Digital Electronics	**Theory:** **CO 1:** Remember the basic structure of number system methods like binary, octal and hexadecimal **CO 2:** Apply the functions to simplify the logical expressions **CO 3:** Analyze the operations of various logical circuits **CO 4:** Evaluate the functions of the memory organization **CO 5:** Create the sequential and combinational logic circuits **Practical:** **CO 1:** Recognize logic functions **CO 2:** Identify the steps for truth tables, and Boolean algebra expressions **CO 3:** Simplify the process of the laws of Boolean algebra to simplify circuits and Boolean algebra expressions **CO 4:** Support combinational logic circuits

			CO 5: Build the Diodes Characteristics
5.	IBCSS15P	SEC I - Multimedia Lab - I	**CO 1:** Recognize the uses of various tools and effects in GIMP **CO 2:** Identify the steps to start designing with images **CO 3:** Simplify the process of designing, editing and masking to solve the difficulties of designers **CO 4:** Support studios to create passport size photo **CO 5:** Design Visiting card, ID card, Birthday card, logo etc.

Class: I BSc Computer Science (Even Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	IBCSC21	Core IV - Programming in C	**CO 1:** Describe the basic programming knowledge of C, operators and expressions **CO 2:** Demonstrate data input and output, control statements & functions **CO 3:** Analyse program structure and arrays **CO 4:** Evaluate strings and pointers **CO 5:** Formulate structures, unions and file handling
2.	IBCSC22P	Core V - Programming in C Lab	**CO 1:** Remember the control structures and loops **CO 2:** Apply the concepts of functions and pointers **CO 3:** Analyze the concepts of Structures and arrays **CO 4:** Evaluate string handling functions **CO 5:** Create programs with pointers, arrays, structures
3.	IBCSA23	AECC II - Microprocessor	**Theory:** **CO1:**Discussion on 8086 microprocessor, Peripheral devices and 80186, 80286 Microprocessors **CO2:**Use the concepts of I/O Interfacing and Peripheral Devices in real world electrical Problems **CO3:**Classify the instruction sets and programming structure in 8086 **CO4:**Evaluate assembly language program that will provide ADC, DAC Interface **CO5:**Design different interfacing applications using microcontrollers and peripherals **Practical:** **CO 1:** Understand to solve basic binary operations using assembly languages **CO2:** Demonstrate programming proficiency using the various addressing modes and data transfer instructions **CO 3:** Apply knowledge using internal registers **CO 4:** Evaluate Interface Programs in 8086 **CO 5:** Design and Implement interface programs
4.	IBCSS24P	SEC II - Multimedia Lab - II	**CO 1:** Recognize the uses of various tools in Blender **CO 2:** Predict the steps that are needed to create animation **CO 3:** Critically analyze the required options to

			create animation with respect to its nature **CO 4:** Evaluate the use of 'Motion tween' in the given concept **CO 5:** Create animated scenes, animated logos, animated cartoon characters etc
5.	IBCSX2P/ IBCSX2O	Extra Credit I - Coral Draw Lab/ *Online Course	**CO 1:** Describe the concepts of tools and techniques in CorelDraw **CO 2:** Apply the concept of Creation and modification of objects for graphic design purposes. **CO 3:** Analyze various tools to design Flyers. **CO 4:** Develop any kind of LOGO using techniques in CorelDraw **CO 5:** Build design magazine and presentations

Class: I BSc Cyber Security (Odd Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	IBCYC11	Core I - Fundamentals of Computers	**CO1:** Summarize the basics of computers and its generations **CO2:** Illustrate number systems and its conversions **CO3:** Analyze the uses of internal and external components of computers **CO4:** Select appropriate input and output devices for digital literacy according to its intended use **CO5:** Formulate the methods to handle multimedia applications
2.	IBCYC12P	Core II - Office Automation Lab	**CO1:** Illustrate various options of Office Application **CO2:** Demonstrate different types of formats, formulas and transition in office application **CO3:** Develop reports to solve the problems of manual report handling **CO4:** Compare the options of different Microsoft Office Applications to use appropriately **CO5:** Build a presentation, Advertisement, Reports etc for enterprise
3.	IBCYS14P	SEC I - Python Lab	**CO1:** Recall the basics of displaying numbers and string **CO2:** Apply the concepts of control structures and function (Predefined and user defined) **CO3:** Analyzing the concept of array and file **CO4:** Explain operator overloading **CO5:** Create GUI programming and website

Class: I BSc Cyber Security (Even Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	IBCYC21	Core III - Data Structures using C Language	**CO 1:** Remember the basic concepts of C Language, structure and algorithm **CO 2:** Make use of operator, structure, union and pointers **CO 3:** Compare Stack, Queue, Tree, Graph, linked list and its operations **CO 4:** Explain control statements, types of data structure, data structure operations, types of linked list, stack, queue, tree and graph

			CO 5: Elaborate tree traversal, searching and sorting techniques
2.	IBCYC22P	Core IV - Data Structures using CLab	**CO1:** Recall linear and non-linear data structures **CO2:** Illustrate non-linear data structures **CO3:** Perform the different operations of search trees **CO4:** Relate graph traversal algorithms **CO5:** Create sorting and searching algorithms
3.	IBCYA23	AECC II - Digital Electronics	**CO1:** Remember the basic structure of number system methods like binary, octal and hexadecimal **CO2:** Apply the functions to simplify the logical expressions **CO3:** Analyze the operations of various logical circuits **CO4:** Evaluate the functions of the memory organization **CO5:** Create the sequential and combinational logic circuits
4.	IBCYS24P	SEC II - Linux and Shell Programming Lab	**CO1:** Summarize shell commands, scripts, managing files, pipes and redirections **CO2:** Apply appropriate Linux commands to make effective use of the environment to solve problems **CO3:** Illustrate shell scripts to perform repetitive tasks using while and for loops **CO4:** Evaluate shell functions **CO5:** Derive command-line arguments
5.	IBCYX2P / IBCYX2O	Extra Credit I - Corel Draw Lab / *Online Course	**CO1:** Describe the concepts of tools and techniques in CorelDraw **CO2:** Apply the concept of Creation and modification of objects for graphic design purposes **CO3:** Analyze various tools to design Flyers **CO4:** Develop any kind of LOGO using techniques in CorelDraw **CO5:** Build design magazine and presentations

Class: I BCA (Odd Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	IBCPC11	Core I - Programming in C	**CO1:** Describe the basic programming knowledge of C, operators and expressions **CO2:** Demonstrate data input and output, control statements & functions **CO3:** Analyse program structure and arrays **CO4:** Evaluate strings and pointers **CO5:** Formulate structures, unions and file handling
2.	IBCPC12P	Core II - Programming in C Lab	**CO1:** Remember the control structures and loops **CO2:** Apply the concepts of functions and pointers **CO3:** Analyze the concepts of Structures and arrays **CO4:** Evaluate string handling functions **CO5:** Create programs with pointers, arrays, structures
3.	IBCPC13P	Core III - Office	**CO1**: Illustrate various options of Office

		Automation Lab	Application **CO2**: Demonstrate different types of formats, formulas and transition in office application **CO3**: Develop reports to solve the problems of manual report handling **CO4**: Compare the options of different Microsoft Office Applications to use appropriately **CO5**: Build a Presentation, Advertisement, Reports etc for enterprises
4.	IBCPS14P	SEC I - Python Lab	**CO 1**: Acquiring the basic knowledge of functions **CO 2**: Examine test and debug simple Python programs **CO 3**: Implement Python programs with conditionals and loops **CO 4**: Develop Python programs step-wise by defining functions **CO5**: Develop the webpage

Class: I BCA (Even Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	IBCPC21	Core IV - Object oriented Programming in C++	**CO1:** Outline principles of object oriented programming paradigm, tokens, expressions and control structure **CO2:** Illustrate functions in C++, the concept of classes and objects **CO3:** Analyse operator overloading, type conversions and inheritance extending classes **CO4:** Relate pointers, virtual functions, polymorphism and managing console I/O Operations **CO5:** Formulate working with files, templates and exception handling
2.	IBCPC22P	Core V - Object Oriented Programming in C++ Lab	**CO1:** Remember the different programming paradigm such as procedure oriented and object oriented programming methodology and conceptualize elements of OO methodology **CO2:** Apply the concepts of object oriented programming **CO3:** Analyze the usage of pointers and exception handling **CO4:** Evaluate the concepts of inheritance and overloading features. **CO5:** Create programs with the usage of Files, templates and exception Handling
3.	IBCPA23	AECC II - Digital Electronics	**CO1:** Remember the basic structure of number system methods like binary, octal and hexadecimal **CO2:** Apply the functions to simplify the logical expressions **CO3:** Analyze the operations of various logical circuits **CO4:** Evaluate the functions of the memory organization **CO5:** Create the sequential and combinational logic circuits

4.	IBCPA24P	AECC III - Digital Electronics Lab	**CO1**: Recognize logic functions **CO2**: Identify the steps for truth tables, and Boolean algebra expressions **CO3**: Simplify the process of the laws of Boolean algebra to simplify circuits and Boolean algebra expressions **CO4**: Support combinational logic circuits **CO5**: Build the Diodes Characteristics
5.	IBCPS25P	SEC II - Multimedia Lab I (Photoshop)	**CO1:** Recognize the uses of various tools and effects in GIMP **CO2:** Identify the steps to start designing with images **CO3:** Simplify the process of designing, editing and masking to solve thedifficulties of designers **CO4:** Support studios to create passport size photo **CO5:** Design Visiting card, ID card, Birthday card and logo
6.	IBCPX2P/ IBCPX2O	Extra Credit I - Coral Draw Lab/ * Online Course	**CO1:** Describe the concepts of tools and techniques in CorelDraw **CO2:** Apply the concept of Creation and modification of objects for graphic design purposes **CO3:** Analyze various tools to design Flyers **CO4:** Develop any kind of LOGO using techniques in CorelDraw **CO5:** Build design magazine and presentations

Class: II MCA (Odd Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	HMCAC31	Core XI - Open Source Technologies	**CO 1:** Understand the difference between open source software and commercial software **CO 2:** Identify, install and run Linux operating system **CO 3:** Install and manage applications **CO 4:** Identify, install open source web technologies Apache, MySQL and PHP **CO 5:** Develop web applications using LAMP **CO 6:** Write session control PHP code for a website
2.	HMCAC32	Core XII - Software Project Management	**CO 1:** Understand the process of Software Engineering **CO 2:** Conceptualize the Software Development Life Cycle (SDLC) models **CO 3:** Classify the varieties of software and models for software development **CO 4:** Know how to gather requirements and design a software **CO 5:** Familiarize Project Management framework and Tools **CO 6:** Understand case study SPM in CMM Level 5 organizations
3.	HMCAC33P	Core XIII - Software Testing and Quality Assurance Lab	**CO 1:** Test the software by applying various testing techniques **CO 2:** Debug the project and to test the entire computer based systems at all levels

			CO 3: Test the applications in the specialized environment using various automation tools **CO 4:** Evaluate the web applications using bug tracking tools **CO 5:** Apply the quality and reliability metrics to ensure the performance of the software
4.	HMCAC34P	Core XIV - Open Source Technologies Lab	**CO 1:** Implement regular expressions in PHP programming including modifiers, operators, and Meta characters **CO 2:** Create PHP programs that use various PHP library functions, and that manipulate files and directories **CO 3:** Analyze and solve various database tasks using the PHP language **CO 4:** Create server side web applications using PHP and MySQL **CO 5:** Able to understand the basis of Linux shell scripting **CO 6:** Gain knowledge about own shell scripts writing
5.	HMCAE3A	Elective III – a. Network Architecture and Management	**CO 1:** Solve the problems in computer network system management **CO 2:** Analyze the challenges in the implementation of ATM networks **CO 3:** Implement SNMP Model in the management of computer networks **CO 4:** Configure routers using computer network software tools **CO 5:** Implement service level agreement in Computer Network management systems
6.	HMCAE3B	Elective III – b. Big Data Analytics	**CO 1:** Analyze the big data analytic techniques for useful business applications **CO 2:** Implement the concept of virtualization and abstraction in analyzing big data **CO 3:** Analyze the HADOOP and Map Reduce technologies associated with big data analytics **CO 4:** Understand the fundamentals of various big data analysis techniques **CO 5:** Implement the integration of data sources in operationalizing Big Data
7.	HMCAE3D	Elective III – d. Linux Administration and Network Programming	**CO 1:** Provide a background on the UNIX system call interface **CO 2:** Learn Advanced Programming concepts in UNIX Environment **CO 3:** Introduce network programming under UNIX **CO 4:** Enable the learner to become Unix System Analyst / Unix Administrator in the IT Industries
8.	HMCAE3E	Elective IV - a. Enterprise Resource Planning	**CO 1:** Describe the operational aspects of ERP system and its related technologies **CO 2:** Demonstrate the steps required for ERP Project management and implementation process by choosing the right vendors/ consultant, employee training and monitoring

			CO 3: Categorize the business modules of an ERP package in order to define the functionality of various departments in a company **CO 4:** Analyze the ERP marketplace and its vendors, assess how Enterprise Application Integration (EAI), e-business help the company use ERP to its utmost benefit
9.	HMCAE3F	Elective IV – b. Data Science	**CO 1:** Convert real world problems to hypothesis and perform statistical testing **CO 2:** Perform data analysis using R **CO 3:** Work with big data platform and its analysis techniques **CO 4:** Identify and design efficient modeling of very large data. **CO 5:** Implement suitable data analysis for stream data. **CO 6:** Write efficient MapReduce programs for small problem solving methods
10.	HMCAE3G	Elective IV – c. Operating Systems	**CO 1:** Understand an idea about process synchronization **CO 2:** Understand inter-process communication **CO 3:** Know about scheduling and deadlock handling **CO 4:** Clearly understand memory management techniques.
11.	HMCAE3H	Elective IV – d. Cyber Security	**CO 1:** Identify the difference between threat, risk, attack and vulnerability **CO 2:** Materialize threats into attacks **CO 3:** Find information about threats, vulnerabilities and attacks **CO 4:** Exploit typical threats, attacks and the motivations behind them

Class: II MCA (Even Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	HMCAC41	Core XV - Optimization Techniques	**CO1:** Understand the need of using operations research- a quantitative approach for effective decision making **CO2:** Interpret the solution of an LP model **CO3:** Convert an LP problem into its standard form by adding slack, surplus and/or artificial variables **CO4:** Apply the Hungarian method to solve an assignment problem **CO5:** Handle the problem of degenerate and unbalanced transportation problem **CO6:** Differentiate PERT and CPM
2.	HMCAC42	Core XVI - Machine Learning and Applications	**CO 1:** Introduce students to the basic concepts and techniques of Machine Learning **CO 2:** Have a thorough understanding of the Supervised and Unsupervised learning techniques **CO 3:** Study the various probability based learning techniques

			CO 4: Understand graphical models of machine learning algorithms **CO 5:** Understand decision tree learning **CO 6:** Understand artificial neural network
3.	HMCAC43PW	Core XVII - Project	**CO 1:** Identify goals, constraints, deliverables, performance criteria and resource requirements in consultation with stakeholders **CO 2:** Systematically collect requirements, and prepare plans **CO 3:** Do Design and construct the software **CO 4**: Do testing to uncover errors **CO 5:** Ensure the quality of software developed using various measures **CO 6:** Document the various aspects of software development

Class: II BSc Information Technology (Odd Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	HBITC32	Core VI - Object Oriented Programming in C+	**CO 1:** Understand the OOPs concepts and the usage of control structures **CO 2:** Usage of Class, object and functions **CO 3:** Understand C++ features such as Constructors, Destructors, Operator overloading, Inheritance, Pointers and Polymorphism **CO 4:** Work with files, templates and to handle exception.
2.	HBITC33P	Core VII - Programming in C++ Lab	**CO 1:** Apply C++ features to program design and implementation **CO 2:** Able to reuse the class using Inheritance **CO 3:** Able to create file **CO 4:** Know to handle exception
3.	HBITA34	Second Allied I - Digital Electronics	**CO 1:** Understand the number system and codes **CO 2:** Understand simplification of Boolean, logic gates and circuits **CO 3:** Obtain knowledge on registers **CO 4:** Differentiate between ROM and RAM
4.	HBITA35P	Second Allied II - Digital Electronics Lab	**CO 1:** Implement logic functions **CO 2:** Able to build circuits, truth tables, and Boolean algebra expressions **CO 3:** Apply the laws of Boolean algebra to simplify circuits and Boolean algebra expressions **CO 4:** Implement combinational logic circuits
5.	HBITE36P	Skill Based Elective - PHP Lab	**CO 1:** Familiarity in designing webpage using HTML tags **CO 2:** Able to include Audio and Video **CO 3:** Ability to work in IDE Environment **CO 4:** Performing the Mathematical Calculations
6.	HBITX3P / HBITX3O	Extra Credit Design and Drafting Lab(AutoCAD Lab) / *Online Certification	**CO 1:** Able to apply CAD in real time applications **CO 2:** .Ability to design the elevation in 2D **CO 3:** Learn to plan with appropriate dimensions **CO 4:** Know to design the garments

Class: II BSc Information Technology (Even Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	HBITC42P	Core IX - RDBMS Lab	**CO 1:** Create and manipulate data using DDL, DML and TCL queries **CO 2:** Enhance skills in implementing constraints in tables **CO 3:** Know to create block structure programming language **CO 4:** Implement procedures, exceptions, triggers in PL/SQL block
2.	HBITC43	Core X - RDBMS	**CO 1:** Basic concepts of DBMS and RDBMS **CO 2:** Know about database design and transaction processing management **CO 3:** Acquire knowledge about security in database **CO 4:** Comparing Indexing and Hashing **CO 5:** Understand the concept of Object Technologies **CO 6:** Future scope of DBMS
3.	HBITA44	Second Allied III - Microprocessor	**CO 1:** Understand the basic concepts of 8088/8086 microprocessor, registers and addressing mode **CO 2:** Acquire knowledge of instruction sets and programming structure **CO 3:** Know the min & max mode interface signals, bus cycle and system clock **CO 4:** Ability to explore architecture of 80386, 80486 Microprocessor and Pentium Microprocessor family
4.	HBITA45P	Second Allied IV - Microprocessor Lab	**CO 1:** Able to solve basic binary operations **CO 2:** Demonstrate programming proficiency using the various addressing modes and data transfer instructions **CO 3:** Apply knowledge using internal registers **CO 4:** Implement interface programs
5.	HBITE46P	Skill Based Elective - Software Development Framework Lab (ASP.NET)	**CO 1:** Able to write console applications **CO 2:** Develop Windows and web Applications **CO 3:** Demonstrate validation controls in web form **CO 4:** Connect Data Grid control to database in Web application
6.	HBITX4 / HBITX4O	Extra Credit - Multimedia / *Online Certification	**CO 1:** Grasping basic concepts of multimedia **CO 2:** Learn to use text, graphics, digital audio and video **CO 3:** Ability to design product **CO 4:** Describing the usage of multimedia and internet

Class: II BSc Computer Science (Odd Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	HBCSC31	Core V - Programming in C++	**CO 1:** Understand the basic concept of C++, tokens, expression and control structures **CO 2:** Knowledge about object oriented concept **CO 3:** Implement constructors, destructors, type conversion and inheritance concepts **CO 4:** Understand the memory access and

			manipulation using pointers, working with files and exceptions
2.	HBCSC32P	Core VI - Programming in C++ Lab	**CO 1:** Able to create basic checking program **CO 2:** Demonstrate the OOPs related program **CO 3**: Implement file program **CO 4:** Know to handle exception
3.	HBCSE34P	Skill Based Elective - Web Designing Lab – I (HTML)	**CO 1:** Know the basic HTMS tags **CO 2:** Create own personal web pages **CO 3:** Create web pages for own company and institution **CO 4:** Demonstrate online dictionary
4.	HBCSX3P HBCSX3O	Extra Credit - Linux and Shell Programming Lab / *Online Certification	**CO 1:** Understand the basis of shell scripting **CO 2:** Ability to solve problem **CO 3:** Gain knowledge of display username and password **CO 4:** Learn about usage of various commands

Class: II BSc Computer Science (Even Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	HBCSC41	Core VII - Operating System	**CO 1:** Understand the services provided and design of an OS and able to use system calls **CO 2:** Know about process and how process are synchronized and scheduled **CO 3:** Differentiate memory management **CO 4:** Gain knowledge of dead lock handling algorithm **CO 5:** Acquire knowledge of structure of distributed system **CO 6:** Gain skill for protection and security problems in operating system
2.	HBCSC42	Core VIII - Data Structures And Algorithms	**CO 1:** Understand basics of algorithms and data structures **CO 2**: Know the basic concept and types of linked list and trees **CO 3**: Acquire skill about graphs **CO 4:** Gain knowledge about sorting and searching techniques
3.	HBCSC43P	Core IX - Visual Programming Lab	**CO1:** Acquire the skills for developing event-driven applications **CO2:** Implement GUI program using various control in toolbox **CO3:** Implement to use databases **CO4:** Get knowledge to animate pictures
4.	HBCSE45P	Skill Based Elective - Web Designing Lab – II (Scripting Language)	**CO1:** Create interactive web page using various tags **CO2:** Develop web games **CO3:** Create web page to demonstrate buttons **CO4:** Design photo gallery web page
5.	HBCSX4P / HBCSX4O	Extra Credit - Data Structures Lab / *Online Certification	**CO 1:** Implement stack and queue data structure **CO 2:** Implement to conversion of infix to postfix expression **CO 3:** Implement linked list **CO 4:** Develop program to sorting numbers and searching a number

Class: II BSc Cyber Security (Odd Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	HBCYC31	Core V - Database Security	**CO 1:**To demonstrate understanding of current database technology and typical database products. **CO 2:**To demonstrate understanding of security architecture in modern computer systems in a typical enterprise. **CO 3**: To formulate a working definition of database security and administration & Identify contemporary practices of operating system security. **CO 4:** To demonstrate the knowledge and skills for administration of user, profiles, password policies, privileges and roles and implement typical security projects on enterprise systems. **CO 5:** To manage database security on application level and conduct database auditing for security and reliability.
2.	HBCYC32P	Core VI - RDBMS Lab	**CO 1:** To create and manipulate data using DDL, DML and TCL queries **CO 2:** To enhance skills in implementing constraints in tables **CO 3:** To know to create block structure programming language **CO 4:** To implement procedures, exceptions, triggers in PL/SQL block
3.	HBCYA33	Second Allied I - Digital Electronics	**CO 1:** To understand basic knowledge about number systems and codes **CO 2:** To know the basic Boolean operations **CO 3:** To know the concepts of combinational logic and sequential circuits **CO 4:** To understand memory concepts
4.	HBCYA34P	Second Allied II - Digital Electronics Lab	**CO 1:** To implement logic functions **CO 2:** To get the ability to build circuits, truth tables, and Boolean algebra expressions **CO 3:** To apply the laws of Boolean algebra to simplify circuits and Boolean algebra expressions **CO 4:** To implement combinational logic circuits
5.	HBCYE35P	Skill Based Elective - Web Designing Lab (HTML& Scripting Language)	**CO 1:**To know the basic HTML tags **CO 2:** To create own personal web pages **CO 3:** To create web pages for own company and institution **CO 4:** To demonstrate online dictionary **CO 5:** To develop web games, Design photo gallery web page **CO 6:** To create web page to demonstrate buttons

Class: II BSc Cyber Security (Even Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	HBCYC41	Core VII - Cryptography & Network Security	**CO 1 :** To understand basics of Cryptography and Network Security and Encryption Techniques. **CO 2 :** To get knowledge about intrusion detection, password management, malicious software and

			firewalls. **CO 3 :** To learn about how to maintain the Confidentiality, Integrity, Authentication and Availability of a data. **CO 4 :**. To understand various protocols for network security to protect against threats in networks. **CO 5:** To learn about Public key cryptography and RSA and Hash Algorithm.
2.	HBCYC42	Core VIII - Principles of Cyber Security	**CO 1:** To understand the broad set of technical, social & political aspects of Computer Security **CO 2:** To describe the operational and organizational security Aspects **CO 3:** To have understood the fundamentals of cryptography **CO 4 :**To know the concepts of Authentication Methods **CO 5 :**To understand the purpose of Intrusion detection system
3.	HBCYC43P	Core IX - Cryptography & Network Security Lab	**CO 1:**To develop and implement encryption and decryption algorithms i.e., AES, MD5 and RSA algorithms **CO 2:**To identify basic security attacks and services **CO 3:**To use symmetric and asymmetric key algorithms for cryptography **CO 4:**To make use of Authentication functions
4.	HBCYA44	Second Allied III - Microprocessor	**CO 1:** To understand the basic concept of 8088/8086 microprocessor, registers and addressing mode **CO 2:** To acquire knowledge instruction sets and programming structure **CO 3:** To know the min & max mode interface signals, bus cycle and system clock **CO 4:** To get familiarity of architecture and Pentium microprocessor family
5.	HBCYA45P	Second Allied IV - Microprocessor Lab	**CO 1:** To solve the basic binary operations **CO 2:** To demonstrate programming using the various addressing modes & data transfer instructions **CO 3:** To implement number checking and string manipulations **CO 4:** To implement interfacing programs
6.	HBCYE46P	Skill Based Elective - Visual Programming Lab	**CO1:** To acquire the skills for developing event-driven applications **CO2:** To implement GUI program using various control in toolbox **CO3:** To implement to use databases **CO4:** To get knowledge to animate pictures

Class: II BCA (Odd Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	HBCPC31	Core V - Computer Organization	**CO1**:To understand the codes ,register and **CO2**: To understand the address sequencing and

			control unit **CO3**: To understand the addressing modes **CO4**: To understand the Peripheral Devices **CO5**: To gain the knowledge of Auxiliary memory
2.	HBCPC32	Core VI - RDBMS	**CO1** : To gain the basic knowledge about the RDBMS and its characteristics, Algebra, Calculus **CO2**: To understand the Normalization, Transaction and Recovery **CO3**: To understand the knowledge about the Database security **CO4**: Acquire the knowledge of indexing and hashing **CO5**: To understand the advance topics in DBMS
3.	HBCPC33P	Core VII - RDBMS Lab	**CO 1:** Gain hands on experience with MySQL queries **CO 2:** Create queries to use DDL, DML and TCL queries **CO3:** Implement built-in functions **CO4:** Implement constrains
4.	HBCPE36P	Skill Based Elective - Web Designing Lab(HTML VBScript & JavaScript)	**CO1:** Implement the Web Page **CO2:** Implement own personal web pages **CO3:** To gain the basic knowledge of Java Script **CO4:** TO gain the knowledge of VB Script
5.	HBCPX3P/ HBCPX3O	Extra Credit - Design and Drafting Lab (AutoCAD Lab) / Online Certification (SWAYAM,NPTEL, Spoken Tutorial)	**CO 1:** Able to apply CAD in real time applications **CO 2:** .Ability to design the elevation in 2D **CO 3:** Learn to plan with appropriate dimensions **CO 4:** Know to design the garments

Class: II BCA (Even Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	HBCPC41	Core VIII - Data Structures and Algorithm	**CO 1:** Understand basics of algorithms and data structures **CO 2**: Know the basic concept and types of linked list and trees **CO 3**: Acquire skill about graphs **CO 4:** Gain knowledge about sorting and searching techniques
2.	HBCPC42	Core IX - Operating System	**CO 1:** Understand the services provided and design of an OS and able to use system calls **CO 2:** Know about process and how process are synchronized and scheduled **CO 3:** Differentiate memory management **CO 4:** Gain knowledge of dead lock handling algorithm **CO 5:** Acquire knowledge of structure of distributed system
3.	HBCPC43P	Core X - Visual Programming Lab	**CO1:** Acquire the skills for developing event-driven applications **CO2:** Implement GUI program using

			various control in toolbox **CO3:** Implement to use databases **CO4:** Get knowledge to animate pictures
4.	HBCPA44	Second Allied III - Microprocessor	**CO 1:** To understand the basic concept of 8088/8086 microprocessor, registers and addressing mode **CO 2:** Acquire knowledge instruction sets and programming structure **CO 3:** To Know the min & max mode interface signals, bus cycle and system clock **CO 4:** Familiarity of architecture and Pentium microprocessor family
5.	HBCPA45P	Second Allied IV - Microprocessor Lab	**CO 1:** Solve the basic binary operations **CO 2:** Demonstrate programming using the various addressing modes & data transfer instructions **CO 3:** Implement number checking and string manipulations **CO 4:** Implement interfacing programs
6.	HBCPE46P	Skill Based Elective – Linux and Shell Programming Lab	**CO 1:** Understand the basis of Linux shell scripting **CO 2:** Ability to solve problem **CO 3:** Gain knowledge of creating username and password **CO 4:** Learn about usage of various commands
7.	HBCPX4/ HBCPX4O	Extra Credit - Multimedia /Online Certification(SWAYAM,NPTEL, Spoken Tutorial)	**CO 1:** Grasping basic concepts of multimedia **CO 2:** Learn to use text, graphics, digital audio and video **CO 3:** Ability to design product **CO 4:** Describing the usage of multimedia and internet

Class: III BSc Information Technology (Odd Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	GBITC51P	Core XI - Programming in Java Lab	**CO 1:** Hands on experience with the basics of java program **CO 2:** Improve skills to develop multi-threaded programs **CO 3:** Demonstrate Exception handling program **CO 4:** Acquire skills to implement GUI components (Console and GUI based) and event-driven programming
2.	GBITC52	Core XII - Programming in Java	**CO 1:** Gain knowledge about basic Java language syntax and semantics to write Java programs **CO 2:** Understand the fundamentals of OOPs **CO 3:** Know principles of inheritance, packages and interfaces **CO 4:** Acquire the knowledge of exception handling and applet programming
3.	GBITC53	Core XIII - Operating System	**CO 1:** Understand the concepts of Operating system and able to use system calls

			CO 2: Know what a process is and how process are synchronized and scheduled **CO 3:** Understand different approaches of memory management and dead lock handling **CO 4:** Provide knowledge of file management, storage, distributed system and Security
4.	GBITE5A	Elective I - a) Enterprise Resource Planning	**CO 1:** Know the Overview of ERP **CO 2:** Analyse the methodology for implementing ERP **CO 3:** Familiarity with Human Resource and ERP Package **CO 4:** Know the roles of different companies involved in ERP Market **CO 5:** Learn different applications and resources of ERP **CO 6:** Reshaping towards Future direction=
5.	GBITE5B	Elective I - b) Complier Design	**CO 1:** Know about compiler and translators **CO 2:** Understand the Lexical Analysis and basic parsing techniques **CO 3:** Knowledge on automatic construction of efficient parsers **CO 4:** Learn syntax directed translation and symbol tables **CO 5:** Familiarity with error detection and recovery **CO 6:** Acquire code optimization and generation technique
6.	GBITE5C	Elective II - a) Web Services	**CO 1:** Understand web services benefits &drawbacks **CO 2:** Obtain knowledge about XML and WSDL **CO 3:** Expertise to exchange messages with SOAP **CO 4:** Know how to build web services with different Tool kits **CO 5:** Understand how to create web services with java and .NET **CO 6:** Know the implementation of web services in the real world
7.	GBITE5D	Elective II - b) E-Commerce	**CO 1:** Understand the concepts of E-commerce **CO 2:** Overview of internet and WWW **CO 3:** Acquire the knowledge of Consumer & Business Oriented Commerce **CO 4:** Categories E-Services, web advertising and Publishing
8.	GBITE54P	Skill Based Elective - Visual Programming Lab	**CO 1:** Acquire the skills for developing applications **CO 2:** Implement GUI program using carious control in tool box **CO 3:** Implement to use databases **CO 4:** Get knowledge to animate pictures
9.	GBITX5 / GBITX5O	Extra Credit - Visual Programming / *Online Certification	**CO 1:** Understand concepts of variables, data types and arrays **CO 2:** Learn to use buttons, menus, dialog boxes and grid control **CO 3:** Learn to access data objects and connectivity to ODBC

			CO 4: Know to generate data reports and usage of ActiveX controls

Class: III BSc Information Technology (Even Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	GBITC61	Core XIV - Software Engineering	**CO 1:** Plan a software project **CO 2:** Identify the requirement and analyse the cost **CO 3:** Familiarity to implement code **CO 4:** Ability to perform test, maintenance and to assure the quality of software
2.	GBITC62	Core XV - Computer Networks	**CO 1:** Define and distinguish different network models **CO 2:** Gain knowledge about Transmission media **CO 3:** Understand how error detection and correction is performed **CO 4:** Identify Address mapping and multicasting and perform congestion control and remote login
3.	GBITC63	Core XVI - Computer Graphics	**CO 1:** Know the concepts of computer graphics **CO 2:** Ability to understand output primitives and transformation **CO 3:** Familiarity to windowing and clipping **CO 4:** Know 3D concept, color and illumination
4.	GBITC64PW	Core XVII - Project	**CO 1:** Enhance team building skills **CO 2:** Perspective towards formulate strategies **CO 3:** Make decisions effective and efficient
5.	GBITE6B	Elective III - b) Ethical Hacking	**CO 1:** Learning the importance of information security and understanding Hacktivism **CO 2:** Analyse different scanning and enumeration methodologies and tools **CO 3:** Understand various hacking techniques and attacks **CO 4:** Know different types of keyloggers **CO 5:** Exposing programming languages for security professionals
6.	GBITE65P	Skill Based Elective - Open Technology Lab (Python)	**CO 1:** Acquire the skills for developing python script **CO 2:** Knowledge to create simple application window **CO 3:** Ability to create web site **CO 4:** Know to create simple blogs.

Class: III BSc Computer Science (Odd Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	GBCSC51	Core X - Programming in Java	**CO 1:** Gain knowledge about basic Java language syntax and semantics to write Java programs **CO 2:** Understand the fundamentals of OOPs **CO 3:** Know the principles of inheritance, packages and interfaces **CO 4:** Acquire the knowledge about exception handling and applet programming
2.	GBCSC52P	Core XI - Programming in Java Lab	**CO 1:** Gain hands on experience with the basics of Java program **CO 2:** Implement multi-threaded programs **CO 3:** Handling Exception

			CO 4: Acquire skills to implement GUI components (Console and GUI based) and event-driven programming
3.	GBCSC53	Core XII - RDBMS	**CO 1:** Able to know the basic concepts of DBMS and RDBMS **CO 3:** Understand the concept of distributed and object oriented databases **CO 2:** Know about database design and transaction processing management **CO 4:** Acquire the knowledge about security in database
4.	GBCSE5A	Elective I - a. Web Technology	**CO 1:** Enhance the students to understand Internet protocols, Web clients and Web servers **CO 2:** Know the use of XHTML and HTML elements in building a website **CO 3:** Understand how to include CSS while creating a website **CO 4:** Gain knowledge to include java script to enhance website development **CO 5:** Understand the concepts of servlets **CO 6:** Obtain knowledge about the role of cookies in website maintenance
5.	GBCSE5B	Elective I - b. Cloud Computing	**CO 1:** Know basic of cloud computing **CO 2:** Understand the concepts of virtualization **CO 3:** Know different types of clouds and its uses in different types of environments **CO 4:** Understand basics cloud services **CO 5:** Understand Aneka and its implementation to act as a cloud application platform **CO 6:** Gain experience to work for cloud services
6.	GBCSE5C /	Elective II - a. Software Development Framework	**CO 1:** Understand the basic concepts of .net and different languages **CO 2:** Differentiate the value and reference type **CO 3:** Acquire the knowledge of class and web controls **CO 4:** Know the data base concept with .Net **CO 5:** Learn about ADO.NET and its data access **CO 6:** Implement console and web application program
7.	GBCSE5D	Elective II - b. PHP	**CO 1:** Understand basics of PHP **CO 2:** Knowledge about variables and data types **CO 3:** Learnt about control structures **CO 4:** Acquire knowledge about Arrays and user defined functions **CO 5:** Understand files and databases **CO 6:** Implement interactive web pages
8.	GBCSE54P	Skill Based Elective - RDBMS Lab	**CO 1:** Gain hands on experience with MySQL queries **CO 2:** Create queries to use DDL, DML and TCL queries **CO3:** Implement built-in functions **CO4:** Implement constrains

Class: III BSc Computer Science (Even Semester)

S. No.	Course Code	Course Name	Course Outcomes
1.	GBCSC61	Core XIII - Software Engineering	**CO1:** Plan a software project **CO2:** Identify the requirement and analyse the cost **CO3:** Familiarity to implement code **CO4:** Ability to perform test, maintenance and to assure the quality of software
2.	GBCSC62	Core XIV - Computer Networks	**CO1:** Define and distinguish different network models **CO2:** Gain knowledge about Transmission media **CO3:** Understand how error detection and correction is performed **CO4:** Identify Address mapping and multicasting and perform congestion control and remote login
3.	GBCSC63	Core XV - Open Technology	**CO1:** Acquire the skills for fundamentals, types and variable **CO2:** Knowledge to use control structures **CO3:** Learnt about lists, dictionary, function, files and exceptions **CO4:** Get knowledge about GUI and graphics
4.	GBCSC64PW	Core XVI - Project	**CO 1:** Analytically collect requirements, plan, analyze, design, construct and test the code **CO 2:** Solve real time problems **CO 3:** Make decisions effective and efficient and document the various aspects of software development **CO 4:** Enhance team building skills
5.	GBCSE6A	Elective III - a. Mobile Application Development	**CO 1:** Know the history of mobile and its ecosystem **CO 2:** Understand designing context, mobile strategy and types of mobile application **CO 3:** Gain knowledge about mobile information architecture and its design **CO 4:** Know about mobile 2.0, mobile web development and iphone web apps **CO 5:** Understand adapting device strategies and supporting devices **CO 6:** Create mobile application simulations
6.	GBCSE6B	Elective III - b. Compiler Design	**CO 1:** Know about compiler and translators **CO 2:** Understand the Lexical Analysis and basic parsing techniques **CO 3:** Knowledge on automatic construction of efficient parsers **CO 4:** Learn syntax directed translation and symbol tables **CO 5:** Familiarity with error detection, recovery, code optimization and generation technique **CO 6:** Implement compiler phases programs
7.	GBCSE65P	Skill Based Elective - Open Technology Lab	**CO 1:** Acquire the skills for developing python script **CO 2:** Knowledge to create simple application window **CO 3:** Ability to create web site **CO 4:** Know to create simple blogs

PG&RESEARCH DEPARTMENT OF COMMERCE
ACADEMIC YEAR 2022-2023

COURSE OUTCOME

B.COM Programme Code: UCO
(Three Year Regular Programme)
(For Students Admitted from 2022-2023)

Class: I B.COM (Odd Semester)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1.	IBCOC1	Core I– Financial Accounting-I	CO1: Acquire knowledge in accounting principles and concepts CO2: Understand single entry system and convert it into double entry system CO3: Analyze, measure and modify rectification of errors CO4: Illustrate depreciation accounting with its factors, provision and methods CO5: Prepare final accounts
2.	IBCOS14P	SEC – P C Package Lab	CO1: Acquire practical knowledge in word processor CO2: Demonstrate the concepts of electronic spreadsheet management for business CO3: Use professional presentation for business purpose CO4: Explain database management tool CO5: Develop personal information management system
Class: I B.COM (Even Semester)			
1.	IBCOC21	Core III – Financial Accountin g-II	CO1: Acquire knowledge in consignment accounts and its key concepts CO2: Explain joint venture accounts with its methods CO3: Construct accounts of non-trading concerns CO4: Deal with the hire purchase and installment accounts CO5: Prepare royalty accounts
2.	IBCOC22	Core IV – Marketing	CO1: Discuss the basic concepts of Marketing CO2: Explain the new product planning & development CO3: Indicate the objectives, factors and kinds of Pricing CO4: Create marketing promotion through advertisement in order to promote sales CO5: Choose the correct distribution channel for marketing a product

3.	IBCOA23	AECC II – Business Statistics	CO1: Gain Knowledge in statistical tools with its concepts CO2: Explain the central tendency CO3: Apply the measures of dispersion and variability CO4: Make Use of the techniques of investigating the relationship between two quantitative variables CO5: Work and Interpret on analysis of time series
4.	IBCOS24	SEC - Logical Reasoning	CO1: Explain critical thinking in academic and non-academic pursuits CO2: Discriminate the basic elements of arguments CO3: Analyse a basic working knowledge of propositional and predicate logic CO4: Examine logical relations among statements and analyse logically complex statements CO5: Calculate the substance and meaning of mathematical problems and solutions
5.	IBCOX2	Extra Credit – Business Communication	CO1: Acquire knowledge on communication CO2: Identify the theoretical framework for writing business letters CO3: Prepare quotations, letters and modern methods for communication CO4: Deal with banking correspondence CO5: Draft report for business
Class: II B.COM (Odd Semester)			
1.	HBCOC31	Core V – Cost Accounting	CO1: Acquire knowledge in basic concepts of Cost Accounting CO2: Explain the material and purchase control with its techniques and methods CO3: Compute labour cost and turnover, idle time, over time with price rate system and premium & bonus plan CO4: Deal with allocation and absorption of overheads CO5: Prepare contract and process accounts

2.	HBCOC32	Core VI – Partnership Accounting	CO1:Acquire knowledge in partnership accounting principles and procedures CO2: Explain treatment of goodwill with accumulated profit & losses and reserves CO3: Explain the accounting treatment at the time of partners retirement CO4: Deal with the settlement of Life Insurance policies CO5: Prepare the partnership accounts for amalgamation
3.	HBCOA33	AECC III – E-Commerce	CO1: Acquire knowledge in E-Commerce CO2: Explain E-Commerce and its components CO3: Explain the process of E-Commerce in performing business functions CO4: Describe the procurement and supply chain CO5: Deal with various payment methods
4.	HBCOS34	SEC -Digital Marketing	CO1: Gain knowledge in general aspects of Digital Marketing CO2: Experiment with web designing methodologies CO3: Understand the role of online advertising and social media marketing CO4: Frame various strategies in content marketing and its distribution channels CO5: Construct social media platform for marketing
5.	HBCOX3	Extra Credit – International Marketing	CO1: Acquire knowledge in the concepts of International Marketing CO2: Explain international marketing environments CO3: Deal with new product development process CO4: Frame international marketing strategies CO5: Suggest on international channels of distribution
Class: II B.COM (Even Semester)			
1.	HBCOC41	Core VII – Banking Law And Practice	CO1: Acquire knowledge in banking CO2: Understand the concepts of negotiable instruments CO3: Describe the role of paying banker and collecting banker CO4: Explain the role of various banks CO5: Share knowledge in modern banking

2.	HBCOC42	Core VIII – Financial Markets and Services	CO1: Acquire knowledge in financial system in India CO2: Explain new issues markets, SEBI and stock exchange CO3: Classify secondary market, listing and stock brokers CO4: Compare online trading with speculation and its concepts CO5: Share knowledge on mutual funds
3.	HBCOA43	AECC IV – Business Mathematics	CO1: Acquire knowledge in business mathematics CO2: Explain ratios and its applications in business CO3: Apply mathematical proportions in business decisions CO4: Use commercial arithmetics in day today life CO5: Excel in problem solving
4.	HBCOS44	SEC – Business Research Methods	CO1: Acquire basic knowledge in research CO2: Understand the steps to be followed in research CO3: Design for a good research CO4: Explain sampling and its impact CO5: Analyze data and draft reports
5.	HBCOX4PW	Extra Credit – Project	CO1: Plan, implement and control activities related to the projects CO2: Apply specialized knowledge and competency in areas of specialization CO3: Demonstrate effective analytical and critical thinking skills in an organizational context CO4: Prepare the students to face the challenges in the field CO5: Develop a balanced and diverse approach to solve problems on their own

Class:III.B.COM (ODD SEM)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1.	GBCOC51	Core IX - Accounting Package For Business (Tally Prime)	CO1: Demonstrate create, alter and shut down company accounts CO2: Sort out accounting vouchers with F11 features CO3: Explicate different types of journals and ledgers CO4: Assess bank reconciliation statement and bill reports CO5: Construct trial balance, stock summary and final accounts
2.	GBCOC52	Core X - Income Tax Theory, Law And Practice – I	CO1: Acquire basic knowledge in Income tax CO2: Explain assessment of income from salary CO3: Describe the assignment of income from house property CO4: Deal with the assessment of income from business or profession CO5: Compute capital gain and income from other sources
3.	GBCOC53	Core XI – Corporate Accounting	CO1: Acquire basic knowledge in shares issue and its accounting treatment CO2: Explain account concepts in issue of debentures CO3: Prepare final accounts and value, goodwill and shares CO4: Deal with the accounting treatments for reconstruction of joint stock companies CO5: Prepare accounts for liquidation
4.	GBCOE5A	DSE I - Commercial Law	CO1: Acquire knowledge in basic aspects of contract CO2: Understand contractual capacity CO3: Explain valid contracts and its impact CO4: Describe bailment & pledge CO5: Deal with contract of agency
5.	GBCOE5B	DSE I – Corporate Law	CO1: Acquire knowledge in basic aspects of company CO2: To understand different types of companies CO3: Explain memorandum of association and its impact CO4: Distinguish between memorandum of association and articles of association CO5: Prepare the accounts for a winding up company

6.	GBCOE5C	DSE II –Management Accounting	CO1: Acquire knowledge in the basic concepts of management accounting CO2: Measure and monitor cash flows of organisations CO3: Apply marginal costing and break-even analysis for decision making CO4: Assess business performance on the basis of ratios CO5: Deal with budgets for business planning
7.	GBCOS54	SEC - Corporate Compliance Management	CO1: Gain knowledge in composite legal due diligence in corporate activities CO2: Classify the various equity shares with Preferential rights CO3: Analyse the compliance management System CO4: Demonstrate various aspects of secretarial audit CO5: Evaluate and justify the requirements of financial institutions and corporate lenders

CLASS : III B.COM (EVEN SEM)			
1	GBCOC61	Core XII – Accounting For Public Utility	CO1: Acquire knowledge in holding companies and their procedures CO2: Understand and explain the concepts of goodwill & shares and its valuation CO3: Analyze the balance sheet and final accounts of life insurance, general insurance business holding subsidiary companies CO4: Evaluate final accounts under the double accounting system CO5: Deal with banking companies and government accounting
2	GBCOC62	Core XIII - Income Tax Theory, Law And Practice – II	CO1: Acquire knowledge in clubbing of income CO2: Illustrate deductions in the computation of total income CO3: Plan the assessment procedure CO4: Assess the income of individual and Hindu undivided family CO5: Deal with the assessment of firms and companies
3	GBCOC63	Core XIV – Business Environment	CO1: Acquire knowledge in business and its environment CO2: Clear understanding between social and cultural environment CO3: Explain economic environment CO4: Integrate political environment with legal environment CO5: Analyze the business environment for globalization with its benefits, problems and challenges

4	GBCOC64	Core XV – Practical Auditing	CO1: Acquire practical knowledge in auditing CO2: Perform audit preparatory work CO3: Deal with vouching of transactions CO4: Verify and value assets CO5: Describe rights and duties of company auditor
5	GBCOE6B	DSE III – Services Marketing	CO1: Acquire knowledge in services and services marketing CO2: Explain service design and service marketing MIS in service industries CO3: Analyze the service location and channel of distribution in service industries CO4: Describe the marketing financial, banking, insurance and health services CO5: Deal with education, tourism, consultancy and telecommunication services
6	GBCOS65	SEC – Principles and Practices of Insurance	CO1: Acquire knowledge in the concepts of insurance CO2: Explain life insurance policies CO3: Deal fire insurance policies CO4: Describe marine insurance policies CO5: Appraise miscellaneous insurance services

B.ComCA

PROGRAMME STRUCTURE

Programme Code: UCC

Class: I B.COM (CA) (Odd Semester)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1	**IBCCC22**	**Core IV – Business Statistics**	**CO1:** Gain Knowledge in statistical tools with its concepts **CO2:** Explain the central tendency **CO3:** Apply the measures of dispersion and variability **CO4:** Deal with correlation analysis **CO5:** Apply regression analysis

2	IBCCX3	**Extra Credit– Marketing**	**CO1:** Discuss the basic concepts of Marketing **CO2:** Explain the new product planning & development **CO3:** Indicate the objectives, factors and kinds of Pricing **CO4:** Create marketing promotion through advertisement in order to promote sales **CO5:** Choose the correct distribution channel for marketing a product
3	IBITA13	**AECC – Accounting Principles & Package**	**CO1:** Acquire knowledge in basic concepts of accounting **CO2:** Prepare journal entries, ledger accounts and trial balance **CO3:** Construct subsidiary books **CO4:** Deal with final accounts **CO5:** Reconcile between bank book and pass book
Class: I B.COM (CA) (Even Semester)			
1	IBITA23	**AECC – Cost Accounting & Package**	**CO1:** Gain basic knowledge in cost and management accounting **CO2:** Understand material as an element of cost and its management and control **CO3:** Explain labour and its payment plan **CO4:** Apply marginal costing and break-even analysis in business decision making **CO5:** Prepare budgets for better business planning.
2	IBCPA33	**AECC – Accounting Principles & Package**	CO1: Acquire knowledge in basic concepts of accounting CO2: Prepare journal entries, ledger accounts and trial balance CO3:Construct subsidiary CO4: Deal with final accounts CO5: Reconcile between bank book and pass book
Class: II B.COM (CA) (ODD Semester)			
1	HBOE3CO	**OEC – Modern Banking**	CO1: Understand customer, banker and their relationship CO2: Acquire knowledge in different types of deposit accounts CO3: Explain all aspects of chequeCs CO4: Deal with E-Banking modes CO5: Describe different types of banks and their functions
Class: II B.COM (CA) (even Semester)			

1	H**BOE4CO**	**OEC – Salesmanship**	CO1: Acquire knowledge on the basic concepts of salesmen CO2: Explain the duties need to be followed by the sales manager CO3: To understand selection of salesmen CO4: Deal with training of salesmen CO5: Describe the different types of salesmen

B.COM PROFESSIONAL ACCOUNTING

Three Year Regular Degree Programme

(For Students Admitted from 2022-23)

Class: I B.COM PA / B.COM /BBA / (EVENSEM)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1	IBPAS24 / IBCOS24 / IBBAS34	SEC I - Logical Reasoning	**CO1:** Explain critical thinking in academic and non-academic pursuits **CO2:** Discriminate the basic elements of arguments **CO3:** Analyse a basic working knowledge of propositional and predicate logic **CO4:** Examine logical relations among statements and analyse logically complex statements **CO5:** Calculate the substance and meaning of mathematical problems and solutions
CLASS : II B.COM PA (ODD SEM)			
1	HBPAC32	Core VI - Advanced Financial Accounting	**CO1:** Explain the investments accounts and fire insurance claims **CO2:** Apply the methods of accounting for hire purchase transactions **CO3:** Analyse the instalment payment system and differentiate it from hire purchasetransactions **CO4:** Critically assess the accounting treatment with regard to branches **CO5:** Discuss the inter-departmental transfers and their accounting treatment
CLASS : II B.COM PA (EVENSEM)			
1	HBPAS44	SEC IV - Goods and Services Tax	CO1: Understand the concepts of Goods and Services tax CO2: Explain the procedure, Amendment and Cancellation of registration CO3: Analyse the charge of GST CO4: Discriminate the exemptions from GST CO5: Get Knowledge in payment of tax

CLASS : III B.COM PA (ODD SEM)			
1	GBPAC52	Core X - Auditing And Assurance – I	**CO1:** Explain the basic principles of auditing **CO2:** Classify the various concepts such as working papers, audit evidence, internalcheck etc **CO3:** Analyse the internal control and computerized information system (CIS) **CO4:** Evaluate the vouching of receipt and trading transactions **CO5:** Deal with audit of receipts and payment transactions
2	GBPAS54 / GBCOS54	SEC V - Corporate Compliance Management	**CO1:** Gain knowledge in composite legal due diligence in corporate activities **CO2:** Classify the various equity shares with preferential rights **CO3:** Analyse the compliance management System **CO4**: Demonstrate various aspects of secretarial audit **CO5:** Evaluate and justify the requirements of financial institutions and corporate lenders
CLASS : III B.COM PA (EVEN SEM)			
1	**GBPAC64**	**Core XV – Auditing and Assurance – II**	**CO1:** Understand and verify the various kinds of assets and liabilities **CO2:** Outline the company audit and audit of debentures **CO3:** Administer the procedure of appointment, filling up of casual vacancies andremoval of auditor **CO4:** Understand and reflect on auditor's reports **CO5:** Summarize the special audit and audit of local bodies

CERTIFICATE COURSE **IN TALLY**

BBA
Three Year Regular Degree Programme
(For Students Admitted from 2022-23)

CLASS : I BBA (ODD SEMESTER)			
1	**IBBAC11**	Core I - Financial Accounting	CO 1: Understand the concepts and principles of financial accounting CO 2: Deploy critical thinking skills for analyse financial data CO 3: Evaluate the current auditing standards and acceptable practices CO 4: Apply accounting methods to evaluate project performance CO 5: Prepare the accounts of trading and non-trading concerns
2	**IBBAC12 /IBCOC12/IBPAC12**	**Core II - Principles of Management**	**CO 1:** Acquire adequate knowledge on the global environment in which business operates **CO 2:** Understand the evolution of management thinking **CO 3:** Analyze the theories of motivation, leadership and communication **CO 4:** Examine valuable insights into the working of business organizations **CO 5:** Develop managerial skills required for the contemporary management practice
3	**IBBAA13 /IBCOA13/IBPAA13**	**AECC I– Business Economics**	**CO 1:** Understand the significance of the basic concepts of business economics **CO 2:** Identify the significance of demand, supply, equilibrium and their determinants **CO 3:** Analyse the production function, cost and revenue analysis **CO 4:** Evaluate the performance of different markets **CO 5:** Develop skills to make economic analysis at macro level

CLASS : I BBA (EVEN SEMESTER)			
1	IBBAC21	Core III – Marketing Management	**CO 1:** Recognize the marketing management concepts, principles and practices. **CO 2:** Understand the significance of marketing functions in the overall managerial context **CO 3:** Develop strategic thinking for effective marketing planning and decision making **CO 4:** Analyze the reasons for the rapid growth of sales promotion **CO 5:** Evaluate the performance of different channels of distribution
2	IBBAC22	Core IV - Corporate Communication	CO 1: Understand the communication methods, types and barriers CO 2: Demonstrate competency in communication and critical thinking skills CO 3: Compose, produce, and present effective business documents CO 4: Learn the appropriate ways to meet industry standards and apply critical evaluation techniques to business documents CO 5: Demonstrate coherent, ethical communication principles in business and industry
3	IBBAX2	Extra Credit - Event Management	CO 1: Identify the specific objectives of the host/client CO 2: Design a planning process that incorporates budgeting, project management, communication and evaluation tools CO 3: Understand the various event elements and employ them cost-effectively CO4: Play the role of the planner on site at the event, and the mind-set necessary to oversee successful event coordination CO 5: Prepare budget for events

CLASS : II BBA (ODD SEMESTER)			
1	**HBBAC32**	**Core vi – Business ethics and values**	**CO 1: Identify organizational challenges to ethical behaviour** **CO 2: Demonstrate knowledge of established methodologies for solving ethical problem** **CO 3: Apply moral reasoning to specific situations and defend its conclusion** **CO 4: Evaluate common beliefs about the role of ethics in business** **CO 5: Develop strategies for identifying and dealing with typical ethical issues**
2	**HBBAA33**	**AECC III –Production & Operations Management**	**CO 1:** Understand the fundamental concepts of production &operations management **CO 2:** Describe the operation and production process **CO 3:** Evaluate the measures for sourcing & supply chain management **CO 4:** Develop alternative production planning **CO 5:** Ensure effective control system in aggregate production planning

CLASS : II BBA (EVEN SEMESTER)			
1	**HBBAC42**	**Core VIII – Project Management**	**CO 1: Understand project characteristics and various stages of a project** **CO 2: Analyse the techniques for project planning, scheduling and execution control** **CO 3: Comprehend the contract management, project procurement, service level agreement and productivity** **CO 4: Deal with risk management plan and analyse the role of stakeholders** **CO 5: Implement projects**

2	**HBBAA43**	**AECC IV – Strategic Management**	**CO 1: Acquire the basic knowledge in strategic management** **CO 2: Understand the concept of strategic analysis** **CO 3: Deal with portfolio and analytical models** **CO 4: Explain the issues of management information system** **CO 5: Suggest better resource allocation for strategic control**
3	**HBBAX4**	**Extra Credit - Industrial Relations**	**CO 1: Understand the basic concepts of industrial relations** **CO 2: Explain the role of trade union** **CO 3: Justify the status of collective bargaining in India** **CO 4: Deal with labour relations** **CO 5: Work on workers participation**

CLASS : III BBA (ODD SEMESTER)			
1	**GBBAC51/GBPAE6A**	**Core IX - Investment Management**	**CO 1: Understand the characteristics of different financial assets** **CO 2: Examine the different investment avenues/ alternatives** **CO 3: Identify various strategies followed by investment practitioners** **CO 4: Evaluate risk and return and understand their trade-off** **CO 5: Explain different investment theories**
2	**GBBAC52/GBCOC63/GBPAE5B/GBCCX4**	**Core X - Business Environment**	**CO 1: Acquire knowledge on the effects of government policy on the economic environment** **CO 2: Comprehend the challenges of globalisation to Indian industries** **CO 3: Estimate the legal framework of multinational corporations in India** **CO 4: Explain human relationships in organisations** **CO 5: Evaluate various factors affecting business operations in different environment**

3	**GBBAC53**	**Core XI– Organizational Behaviour**	**CO 1: Enumerate the evolution and growth of organisational behaviour** **CO 2: Identify the challenges and opportunities of organisational behaviour** **CO 3: Understand the ingredients of individual behaviour** **CO 4: Explain classical theories and their limitations** **CO 5: Understand and deal with organizational work changes**
4	**GBBAE5A/GBPAX3**	**DSE I - International Marketing**	**CO 1:** Identify the nuances and challenges of doing business in different cultural environment **CO 2:** Evaluate and design sustainable pricing strategies **CO 3:** Apply relevant distribution logistics **CO 4:** Gain knowledge in terms of international payment **CO 5:** Understand India's recent export import policies
5	**GBBAES55/GBCOCX6/GBCCX6/GBPAX6**	**SEC V - Total Quality Management**	**CO 1: Understand the quality norms of organisations** **CO 2: Explain the importance of quality management** **CO 3: Develop conversant with SWOT analysis** **CO 4: Apply benchmark for quality management** **CO 5: Deal with ISO certification process**

CLASS : III BBA (EVEN SEMESTER)			
1	GBBAC61/GBCOCE5D/GBCCE5D/GBPAE5D	Core XIII – Corporate Finance	CO 1: Understand both the theoretical and practical aspects of financial management in business organization CO 2: Access financial information from a wide variety of sources and use the information for research CO 3: Analyze the finances of individual corporations both in terms of their performance and capital requirements CO 4: Compute cost of capital for various sources CO 5: Explain the capital structure of a firm
2	GBBAC62PW	Core XIV Project	CO 1: Plan, implement and control activities related to the projects CO 2: Apply specialized knowledge and competencies in areas of specialisation CO 3: Demonstrate effective analytical and critical thinking skills in an organizational context CO 4: Prepare the students to face the challenges in the field CO 5: Develop a balanced and diverse approach to solve problems on their own
3	GBBAC63	Core XV-Management Information System	CO 1: Understand the ingredients of management information system CO 2: Develop the application of MIS in promoting managerial effectiveness CO 3: Examine the dimension of information system CO 4: Understand the recruitment and analysis CO 5: Explain the product based information system
4	IGBBAC64/GBCOE6A/IGBCCE6A	Core XVI - Human Resource Management	CO 1: Understand the evolution and scope of HRM CO 2: Assess the role of human resources policies and practices CO 3: Analyse the various operative functions of HRM CO 4: Identify the challenges of human resource management CO 5: Evaluate the e-HRM practices in industry
5	GIBBAE6A/GBPAE6B	DSE III – Logistics and Supply Chain Management	CO 1: Identify and analyze business models, business strategies and corresponding competitive advantage CO 2: Plan warehouse and logistics operations for optimum utilization of resources CO 3: Incorporate and learn the critical element of logistics and supply chain management CO 4: Describe the ways to shift the business culture from work to overall process-driven result CO 5: Formulate and implement warehouse best practices and strategies

6	GBBAS65/GBPAS65	SEC VI –Enterprise Resource Planning	CO 1: Understand the basic concepts of ERP systems for manufacturing or service companies CO 2: Identify the principles of ERP systems, their major components, and the relationships among these components CO 3: Assess major ERP components, including material requirements planning, master production scheduling, and capacity requirements planning CO 4: Evaluate the pre implementation phase and support CO 5: Develop knowledge of typical ERP systems
7	**GBBAX6**	**Extra Credit – Knowledge Management**	**CO 1:** Understand complex theories and practice of knowledge and intellectual capital management **CO 2:** Apply theories to a wide range of scenarios **CO 3:** Create action plans for knowledge intensive organisations **CO 4:** Describe the aspects of industrial era management that may be inappropriate for knowledge intensive organisations and provide alternatives **CO 5:** Formulate a framework for thinking about knowledge intensive organisations

OPEN ELECTIVE COURSES OFFERED FOR OTHER MAJOR STUDENTS
(Other than B.Com, B.Com CA, B.Com Fintech, B.Com Honors and BBA)

Programme Structure
(For Students Admitted from 2022 - 23)

CLASS : II YEAR (ODD SEMESTER)			
1	**HBOE3BA**	**OEC - Advertisement Management**	**CO 1:** Understand the concepts, need, importance, utility of advertising, sales promotion and sales management **CO 2:** Examine the role of media in service sector **CO 3:** Identify critical marketing factors that influence advertising decisions **CO 4:** Develop an advertising campaign plan that reflects an Integrated Marketing Communication (IMC) perspective **CO5:** Manage sales force
CLASS : II YEAR (EVEN SEMESTER)			
2	**HBOE4BA**	**OEC - Basics of Investment**	CO 1: Acquire knowledge in different investment avenues/ alternatives CO 2: Understand the characteristics of different financial assets CO 3: Design various strategies followed by investment practitioners CO 4: Evaluate risk and return and understand the trade-off between them CO 5: Develop skills in trading activities

DISCIPLINE SPECIFIC ELECTIVE PAPER OFFERED FOR **B.SC IT**

CLASS : III YEAR (EVEN SEMESTER)			
1	**GITE6B**	**DSE III –Organizational Behaviour**	CO 1: Enumerate the evolution and growth of organisational behavior CO 2: Identify the challenges and opportUnities of organisational behavior CO 3: Understand the ingredients of individual behaviour CO 4: Explain classical theories and their limitations; CO 5: Understand and deal with organizational work changes

CERTIFICATE COURSE IN EVENT MANAGEMENT
(For Students Admitted from 2022-23)

CERTIFICATE COURSE			
1	GCEM1	Event Management – Theory	• Planning of activities for an event • Budget Preparation • Look for Sponsors • Selection of Event Member Council • Duties allocated to Event Managers • Drafting an Agenda • Invitation • Choosing the right venue, date and time • Inviting the Resource Person • Organizing Events • Event Schedule (Timing of each program in the Event) • Check list form • Prize Distribution • Feedback Forms and Report of the Event • Post -Event Duties
2	GCEM2P	Event Management Activities - Practicals	• Planning of activities for an event • Budget Preparation • Look for Sponsors • Selection of Event Member Council • Duties allocated to Event Managers • Drafting an Agenda • Invitation • Choosing the right venue, date and time • Inviting the Resource Person • Organizing Events • Event Schedule (Timing of each program in the Event) • Check list form • Prize Distribution • Feedback Forms and Report of the Event • Post -Event Duties

B.Com Fin Tech
PROGRAMMESTRUCTURE
(Students Admitted from 2022-23)

CLASS:I B.COM FINTECH(ODD SEMESTER)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1	**IBFTC11**	**Core I–Business Mathematics**	**CO1:** Acquire knowledge in business mathematics **CO2:**Explainratios and its applications in business **CO3:**Applymathematicalproportions in business decisions **CO4:**Usecommercialarithmetics in day to day life **CO5:**Excel in problem solving
2	**IBFTC12**	**Core II - Accounting Package for Business (Tally Prime)**	**CO1:** Demonstrate create, alter and shut down company accounts **CO2:** Sort out accounting vouchers with F11 features **CO3:** Explicate different types of journals and ledgers **CO4:** Assess bank reconciliation statement and bill reports **CO5:** Construct trial balance, stock summary and final accounts
3	**IBFTA13**	**AECC I Introduction to Financial Markets**	**CO1:** Understand various constituents of capital market **CO2:** Remember the basic concepts relating to different avenues of investment **CO3:** Evaluate the difference between primary and the secondary market **CO4:** Apply knowledge related to derivatives market **CO5:** Analyze financial statement
4	**IBFTS14**	**SEC I-Logical Reasoning**	**CO1:**Explain critical thinking in academic and non-academic pursuits **CO2:**Discriminate the basic elements of arguments **CO3:**Analyseabasic working knowledge of propositional and predicate logic **CO4:** Examine logical relations among statements and analyze logically complex statements **CO5:**Calculate the substance and meaning of mathematical problems and solutions

CLASS:I B.COM FINTECH(EVEN SEMESTER)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1	**IBFTC21**	**Core - III Introduction to Financial Technology**	CO1:Definethefinancial technology CO2: Apply the digital lending innovation and IoT CO3: Analyze the cyber security and block chain CO4: Evaluate the crowd funding and crowd investing funding models CO5: Create the distributed ledgers
2	**IBFTC22**	**Core IV–R & Python for Finance**	CO1: Understand the need and advantages of using python for financial analytics CO2: Apply advanced calculation, generate outputs, create variables, abstract from data using python. CO3: Remember python models and techniques that aid design, analysis and evaluation of financial decision-making. CO4: Analyze advanced machine learning models in finance using python CO5: Create Excel, Web and GUI based design for trading platforms to support analytics.
3	**IBFTA23**	**AECC II–Financial Accounting**	**CO1:**Acquire knowledge in accounting principles and concepts **CO2:**Understand single entry system and convert it in to double entry system **CO3:**Analyze,measure and modify rectification of errors **CO4:** Illustrate depreciation accounting with its factors, provision and methods **CO5:**Prepare final accounts
4	**IBFTS24P**	**SEC – PC Package Lab**	CO1:Acquirepracticalknowledgein word processor CO2: Demonstrate the concepts of electronic spreadsheet management for business CO3: Use professional presentation for business purpose CO4: Explain database management tool CO5: Develop personal information management system

5	**IBFTX2**	**Extra Credit – Business Communication**	**CO1:** Acquire knowledge on communication **CO2:** Identify the theoretical framework for writing business letters **CO3:** Prepare quotations, letters and modern methods for communication **CO4:** Deal with banking correspondence **CO5:** Draft report for business

CLASS:II B.COM FINTECH (ODD SEMESTER)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1	**IBFTC31**	**Core V–Business Statistics**	**CO1:** Gain Knowledge in statistical tools with its concepts **CO2:** Explain the central tendency **CO3:** Apply the measures of dispersion and variability **CO4:** Make Use of the techniques of investigating the relationship between two quantitative variables **CO5:**Work and Interpret on analysis of time series
2	**IBFTC32**	**Core VI - Fintech and Cyber Security**	**CO1:**Classifyand develop a Security model to prevent, detect and recover from the Attacks **CO2:**Illustrate the methods and tools used for cybercrime investigation **CO3:**Develop various cyber threat models and threat management **CO4:** Examine Audit risk, management and protecting the assets **CO5:**Apply security principles to system design
3	**IBFTC33**	**Core VII – Digital Marketing for Financial Sector**	CO1: Demonstrate the understanding of Digital marketing and media concepts. CO2: Describe, define and apply the major components of Digital Marketing CO3: Learn and apply Facebook Marketing strategies. CO4: Utilize Google Adwords for efficient digital marketing scenarios

			CO5: Learn and implement techniques using youtube for real time marketing analytics and apply email marketing and content writing for developing and enhancing digital marketing.
4	**IBFTC34**	**Core VIII– AI / ML for Financial Sector**	**CO1:** Understand the basic definition and need for machine learning **CO2:** Understand the core aspects behind any machine learning project **CO3:** Ability to implement a machine learning project **CO4:** Ability to identify potential applications of machine learning in real time **CO5:** Apply the machine learning concepts in real life problems
5	**IBFTA35**	**AECC III– Banking Law and Practice**	CO1: Analysis the derivatives markets CO2: Recall the various derivative products CO3: Evaluate the option trading strategies for managing risk CO4: Understand the derivatives clearing and settlement mechanism CO5: Remember taxation on derivatives and understand the investor grievance mechanism
6	**IBFTS36**	**SEC- Customer Relationship Management**	**CO 1:** To understand CRM concepts and the role of CRM in managing customers. **CO 2:** To understand customer life cycle, key concepts and various stages of the sales cycle. **CO 3:** To understand the use of technology including internet to support corporate CRM strategy. **CO 4:** To understand customer behaviour, relationship marketing, customer satisfaction and loyalty **CO 5:** To understand CRM in different sector such as Financial Services, Hospital, Telecom and Insurance, Airlines, and Hotels.

CLASS:II B.COM FINTECH (EVEN SEMESTER)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1	**IBFTC41**	**Core IX– Management Accounting**	CO1:Acquire knowledge in the basic concepts of management accounting CO2: Measure and monitor cash flows organizations CO3: Apply marginal costing and break-even analysis for decision making CO4:Assessbusinessperformanceon the basis of ratios CO5:Deal with budgets for business planning
2	**IBFTC42**	**Core X – Block Chain Management**	CO1: Learn the basic concepts of distributed systems and structure of Block chain CO2: Gain insights on Bitcoin and understand the mechanics of Bitcoin transactions CO3: Know the importance of various crypto currencies CO4: Understand Block chain Learning and its application for various Business Models CO5: Analyze the Block chain Solutions and understand the idea of Block chain Society
3	**IBFTC43**	**Core XI – Corporate Accounting**	**CO1:** Acquire basic knowledge in shares issue and its accounting treatment **CO2:** Explain account concepts in issue of debentures **CO3:** Prepare final accounts and value, goodwill and shares **CO4:** Deal with the accounting treatments for reconstruction of joint stock companies **CO5:** Prepare accounts for liquidation
4	**IBFTC44**	**Core XII– Financial Derivatives**	**CO1: Understand business ethics** **CO2: Outline Fintech ethics and its principles** **CO3: Explicate computer ethics**

			and business values **CO4: Execute and justify corporate governance** **CO5: Discuss governance and ethics in practice**
5	**IBFTA45**	**AECC IV-Fin Tech Ethics and Corporate Governance**	**CO1**: Understand business ethics **CO2**: Outline Fintech ethics and its principles **CO3**: Explicate computer ethics and business values **CO4**: Execute and justify corporate governance **CO5**: Discuss governance and ethics in practice
6	**IBFTS46**	**SEC - International Financial Reporting and Standards**	**CO1: Explain the concept of International Financial Reporting Standards (IFRS)** **CO2:Categorise various standards of financial reporting** **CO3: Distinguish various accounting standards across the world** **CO4: Assess corporate financial reports as per IFRS** **CO5: Discuss the relevance of IFRS with Indian accounting standards**.
7	**IBFTX4**	**Extra Credit – Project**	**CO1: Learn on their own, reflect on their learning and take appropriate actions to improve it** **CO2: Acquire skills to communicate effectively, clearly and coherently to get things done** **CO3: Develop plans to achieve project goals** **CO4: Plan and arrange for human and physical resources** **CO5: Develop stronger inclination towards flexibility and fearlessness in their approach to problem solving**

CLASS:III B.COM FINTECH (ODD SEMESTER)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1	**IBFTC51**	**Core XIII – Income Tax Theory, Law and Practices–I**	**CO1:**AcquirebasicknowledgeinIncometax **CO2:**Explain assessment of income from salary **CO3:**Describe the assignment of income from house property **CO4:**Dealwith the assessment of income from business or profession **CO5:**Computecapitalgainand income from other sources
2	**IBFTC52**	**Core XIV– Cost Accounting**	**CO1:**Acquire knowledge in basic concepts of Cost Accounting **CO2:** Explain the material and purchase control with its techniques and methods **CO3:** Compute labour cost and turnover, idle time, over time with price rate system and premium & bonus plan **CO4:**Deal with allocation and absorption of overheads **CO5:**Prepare contract and process accounts
3	**IBFTC53**	**Core XV– Analytics for Finance**	CO1: Describe, define and apply the major components of the Financial Analytics and its importance in Fintech CO2: Describe, define and apply the major components of the Financial Analytics and its importance in Fintech CO3: Learn and apply the financial analytics process in Python CO4: Learn and implement the applications of Financial Analytics using R CO5: Apply python concepts and practices to advanced financial analytics
4	**IBFTC54**	**Core XVI - Big Data Analytics**	CO1:Describe Data sources, generations, data formats, Data Evolution, Data from various domains CO2:Determine Big Data Characteristics, Frameworks, components and Limitation of traditional approaches and map Big Vs. to Data Domains CO3:Analyse various domains of Data Characteristics, Platform, Programming Model and Design Data Analytic ecosystem, and data processing framework CO4: Evaluate the Concepts of Data Analytics

			Phases and Techniques CO5: Formulate Data Analytics Techniques practically using R environment
5	**IBFTE5A**	**DSE I- Fin Tech Start-ups and Innovations**	CO1: Apply the concept of FinTech innovation and Startup CO2: Explain the main financial technology (FinTech) innovations, their dark and light sides as well as the possible expected evolutions CO3:Analyze the challenges of regulators and understand which innovative regulatory approaches are needed in response to FinTech developments CO4: Illustrate the critical technology strategies and foundational technologies in FinTech CO5: Evaluate the dynamics of Fintech and how it is transforming the world of finance
6	**IBFTE5B**	**DSE I - Commercial Law**	CO1: Acquire knowledge in basic aspects of contract CO2: Understand contractual capacity CO3: Explain valid contracts and its impact CO4: Describe bailment & pledge CO5: Deal with contract of agency
7	IBFTE5C	DSE II Financial Modeling	CO1: Learn the basic concepts of modeling and its perspective in analysis and auditing. CO2: Gain insights on Financial Statement and forecasting various finance parameters. CO3: Develop a financial model suitable that aids management and documentation CO4: Understand potential applications of Finance Models and its implementation CO5: Practice and implement Financial modeling in Python Environment.
8	IBFTE5D	DSE II - Company Law	CO1: Acquire knowledge in the basic concepts of contract CO2: Explain the contractual capacity of laws in business and profession CO3: Describe the elements of valid contract CO4: Understand the legal aspects of special contracts CO5: Enhance performance and discharge of

			contracts in business
9	**IBFTS55**	**SEC-Corporate Compliance Management**	**CO1:** Gain knowledge in composite legal due diligence in corporate activities **CO2:** Classify the various equity shares with preferential rights **CO3:**Analysethe compliance management System **CO4:**Demonstratevariousaspectsofsecretarialaudit **CO5:**Evaluate and justify the requirements of financial institutions and corporate lenders

CLASS:III B.COM FINTECH (EVEN SEMESTER)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1	**IBFTC61**	**Fin Tech Intelligence**	**CO1: Understand emerging trends in FinTech** **CO2: Gain insights on Global trends in Digital Banking, Blockchain Technology, AI/ML** **CO3: Understand applications based on trends in FinTech**
2	**IBFTC62**	**Core XVIII-Income Tax Theory, Law and Practice–II**	**CO1: Acquire knowledge in clubbing of income** **CO2: Illustrate deductions in the computation of total income** **CO3: Plan the assessment procedure** **CO4: Assess the income of individual and Hindu undivided family** **CO5: Deal with the assessment of firms and companies**
3	**IBTFC63**	**Core XIX - Human Resource Management**	**CO 1:** Understand the evolution and scope of HRM **CO 2:** Assess the role of human resources policies and practices **CO 3:** Analyse the various operative functions of HRM **CO 4:** Identify the challenges of human resource management **CO 5:** Evaluate the e-HRM practices in industry

4	**IBFTC64**	**Core XX – Strategic Management**	**CO 1:** Acquire the basic knowledge in strategic management **CO 2:** Understand the concept of strategic analysis **CO 3:** Deal with portfolio and analytical models **CO 4:** Explain the issues of management information system **CO 5:** Suggest better resource allocation for strategic control
5	**IBFTE6A**	**DSE III - Security Analysis and Portfolio Management**	CO1: Illustrate investments and its nature CO2: Classify various avenues and attributes of financial instruments CO3: Analyse securities by applying fundamental tools CO4: Assess securities by adopting technical tools CO5: Compile the concept of portfolio management and its services
6	**IBFTE5B**	**DSE I - Commercial Law**	CO1: Acquire knowledge in basic aspects of contract CO2: Understand contractual capacity CO3: Explain valid contracts and its impact CO4: Describe bailment & pledge CO5: Deal with contract of agency
7	**IBFTE6B**	**DSE III – Logistics and Supply Chain Management**	**CO 1:** Identify and analyze business models, business strategies and corresponding competitive advantage **CO 2:** Plan warehouse and logistics operations for optimum utilization of resources **CO 3:** Incorporate and learn the critical element of logistics and supply chain management **CO 4:** Describe the ways to shift the business culture from work to overall process-driven result **CO 5:** Formulate and implement warehouse best practices and strategies

8	**IBFTS65**	**SEC - Total Quality Management**	**CO 1:** Understand the quality norms of organisations **CO 2:** Explain the importance of quality management **CO 3:** Develop conversant with SWOT analysis **CO 4:** Apply benchmark for quality management **CO 5:** Deal with ISO certification process
9	**IBFTX6**	**Extra Credit – Principles and Practices of Insurance**	CO1: Acquire knowledge in the concepts of insurance CO2: Explain life insurance policies CO3: Deal fire insurance policies CO4: Describe marine insurance policies CO5: Appraise miscellaneous insurance services

B.COM (HONOURS)

PROGRAMMESTRUCTURE

(Students Admitted from 2022-23)

CLASS:I B.COM **(HONOURS)** (ODD SEMESTER)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1	**IBHOC11**	**Core I - Basics of Financial Accounting***	CO1: Enable students to understand the purpose of financial accounting and the need of financial statements. CO2: Exhibit the use of a double entry system in recording transactions and different types of accounting transactions for the preparation of the financial statements. CO3: Enable students to record the transaction in day books and calculate the value of inventory using FIFO and AVCO CO4: Develop the skill set to prepare the trial balance and rectify the error. CO5: Learn to apply conceptual

			knowledge in the preparation of standalone and consolidated financial statements and interpretation of financial statements
2	**IBHOC12**	**Core II Principles of Organization and Management**	CO1: Explain the different types of business organisations & its stakeholders and the way they are structured. CO2: Identify and illustrate different levels of management. CO3: Describe the functions of management under different circumstances and demonstrate current and relevant functions of management. CO4: Analyse the organisation structure and familiarizes with the role of corporate governance. CO5: Illustrate the idea about the role of a leader and the impact of different leadership styles and theories.
3	**IBHOA13**	**AECC I – Business Mathematics**	CO1: Acquire knowledge in business mathematics CO2:Explainratios and its applications in business CO3:Applymathematicalproportions in business decisions CO4:Usecommercialarithmetics in day to day life CO5:Excel in problem solving
4	**IBHOS14**	**SEC- Customer Relationship Management**	CO 1: To understand CRM concepts and the role of CRM in managing customers. CO 2: To understand customer life cycle, key concepts and various stages of the sales cycle. CO 3: To understand the use of technology including internet to support corporate CRM strategy. CO 4: To understand customer behaviour, relationship marketing, customer satisfaction and loyalty CO 5: To understand CRM in different sector such as Financial Services, Hospital, Telecom and Insurance, Airlines, and Hotels.
5	**IBHOX2**	**Extra Credit –**	**CO1:** Acquire knowledge on

		Business Communication	communication **CO2:** Identify the theoretical framework for writing business letters **CO3:** Prepare quotations, letters and modern methods for communication **CO4:** Deal with banking correspondence **CO5:** Draft report for business

CLASS:I B.COM **(HONOURS)** (EVEN SEMESTER)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1	**IBHOC21**	**Core III Financial Reporting***	**CO1:** Explain the use of IFRS & and various accounting concepts. **CO2:** Apply the IFRS and for various transactions in corporate entities. **CO3:** Identify and Understand the principles of recognizing revenue of the business. **CO4:** Prepare and present financial statements by incorporating the effects of the accounting standards.
2	**IBHOC22**	**Core IV - Advanced Financial Accounting**	**CO1:** Use appropriate software for recording transactions and preparing accounts under Hire Purchase and Instalment Purchase system; **CO2:** Apply appropriate software to workout royalty accounts and Prepare accounts relating to consignment business; **CO3:** Use the different accounting procedure for partnership **CO4:**Provide services to departmental stores in preparing departmental accounts; Guide business enterprises in preparing and submitting insurance claim statement against business losses; **CO5:** Compare commercial accounting system with Government accounting system and

			explain Government financial administration.
3	**IBHOC23**	**Core V Basics of Cost Accounting**	**CO1:** Describe the different elements of Production and non-production costs – administrative, selling, distribution and finance. **CO2:**.Understanding the concept of costs with respect to material, labour and overheads **CO3:**.Understanding the accounting of overheads and its allocation and apportionment. **CO4:** Prepare cost records and accounts in job and batch costing situations, and an understanding of methods of costing **CO5:**.USe of budgets and standard costs for planning and controlCO5:Excel in problem solving
4	**IBHOA24**	**AECC II - Logical Reasoning**	**CO1:**Explain critical thinking in academic and non-academic pursuits **CO2:**Discriminate the basic elements of arguments **CO3:**Analyseabasic working knowledge of propositional and predicate logic **CO4:** Examine logical relations among statements and analyze logically complex statements **CO5:**Calculate the substance and meaning of mathematical problems and solutions
5	**IBHOS25**	**SEC - Industrial Relations**	**CO 1: Understand the basic concepts of industrial relations** **CO 2: Explain the role of trade union** **CO 3: Justify the status of collective bargaining in India** **CO 4: Deal with labour relations** **CO 5: Work on workers participation**

CLASS: II B.COM **(HONOURS)** (ODD SEMESTER)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1	**IBHOC31**	**Core VI - Advanced Financial Reporting***	**CO1:** Apply the provisions of relevant accounting standards in relation to accounting for government grants. CO2: Prepare an entity's statement of financial position and statement of profit or loss and other comprehensive income in accordance with the structure and content prescribed within IFRS CO3: Explain the concept of group and non-controlling assets. CO4: Prepare a consolidated statement of financial position for a simple group (parent and one subsidiary and associate) dealing with pre- and post-acquisition profits, non-controlling interests and consolidated goodwill. CO5: Describe the concepts of integrated reporting.
2	**IBHOC32**	**Core VII - Financial Management I***	CO1: Explain the nature and purpose of financial management CO2: Explain how government economic policy interacts with planning and decision-making in business. CO3: Calculate the level of working capital investment in current assets and discuss the key factors determining working capital cycle. CO4: Calculate internal rate of return and discuss its usefulness as an investment appraisal method. CO5: Apply probability analysis to investment projects and discuss the usefulness of probability analysis in assisting investment decisions.
3	**IBHOC33**	**Core VIII - Management Accounting I***	CO1: Explain activity based costing (ABC), target costing, life cycle costing and total quality management (TQM) as alternative cost management techniques.

			CO2: Calculate & interpretation of Throughput Accounting Ratio (TPAR) – application in a multi-product entity CO3: Calculate & interpret break-even point and margin of safety. CO4: Workout optimum selling price with Marginal Costing and Revenue. CO5: Discuss and evaluate expected value using decision tree analysis.
4	**IBHOA34**	**AECC III – Business Statistics**	CO1: Gain Knowledge in statistical tools with its concepts CO2: Explain the central tendency CO3: Apply the measures of dispersion and variability CO4: Make Use of the techniques of investigating the relationship between two quantitative variables CO5: Work and Interpret on analysis of time series
5	**IBHOS35**	**SEC -Digital Marketing**	CO1: Gain knowledge in general aspects of Digital Marketing CO2: Experiment with web designing methodologies CO3: Understand the role of online advertising and social media marketing CO4: Frame various strategies in content marketing and its distribution channels CO5: Construct social media platform for marketing
6	**IBHOX3**	**Extra Credit – International Marketing**	**CO 1:** Identify the nuances and challenges of doing business in different cultural environment **CO 2:** Evaluate and design sustainable pricing strategies **CO 3:** Apply relevant distribution logistics **CO 4:** Gain knowledge in terms of international payment **CO 5:** Understand India's recent export import policies

CLASS: II B.COM (HONOURS) (EVEN SEMESTER)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1	**IBHOCH4**	**Core IX - Financial Management II***	CO1: Describe the sources of business finance with their relative merits and demerits. CO2: Identify the capital structure theories and cost of capital. CO3: Classify the concepts of business valuation. CO4: Examine the concepts of financial risk management CO5: Explain the tools and techniques of financial risk management in the context of foreign currency risks & interest rate risks
2	**IBHOC42**	**Core X –Income Tax Law and Practice**	**CO1:** Comprehend basic knowledge in Income tax **CO2:** Compute income from salary **CO3:** Compute income from house property **CO4:** Compute income from business or profession **CO5:** Compute capital gains and income from other sources
3	**IBHOC43**	**Core XI - Management Accounting II***	**CO1:**Illustrate the budgetary systems in an organisation **CO2:**Apply financial and non-financial performance indicators in organizations **CO3:**Explain financial and non-financial performance indicators in organizations **CO4:** Classify financial and non-financial performance indicators in organizations **CO5:**Describe theexternal considerations in performance management
4	**IBHOC44**	**Core XII Business Intelligence using Excel and Access**	**CO1:** Summarize the concept of excel formulas, tables, and queries **CO2:** Demonstrate the data in chart and graph. and report **CO3:** Utilize the data analysis tools and techniques to convert the data into information. **CO4:** Evaluate on pivot table, queries, working with fields, and t e f queries **CO5:** Develop the query, form, and report in Excel and Access.
5	**IBHOA45**	**AECC IV – Human Resource Management**	**CO 1:** Understand the evolution and scope of HRM **CO 2:** Assess the role of human resources policies and practices

			CO 3: Analyse the various operative functions of HRM **CO 4:** Identify the challenges of human resource management **CO 5:** Evaluate the e-HRM practices in industry
6	**IBHOS46**	**SEC-Corporate Compliance Management**	CO1: Gain knowledge in composite legal due diligence in corporate activities CO2: Classify the various equity shares with preferential rights CO3:Analysethe compliance management System CO4:Demonstratevariousaspectsofsecretarialaudit CO5:Evaluate and justify the requirements of financial institutions and corporate lenders

CLASS: III B.COM (HONOURS) (ODD SEMESTER)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOME
1	**IBHOX4**	**Extra Credit – Enterprise Resource Planning**	**CO 1:** Understand the basic concepts of ERP systems for manufacturing or service companies **CO 2:** Identify the principles of ERP systems, their major components, and the relationships among these components **CO 3:** Assess major ERP components, including material requirements planning, master production scheduling, and capacity requirements planning **CO 4:** Evaluate the pre implementation phase and support **CO 5:** Develop knowledge of typical ERP systems
2	**IBHOC51**	**Core XIII - Indirect Taxation and GST***	After completion of this course, student will be able to CO1:Explain the conceptual framework of GST CO2:Describe the concept of Supply and its rules CO3:Prepare and maintain accounts and records related to GST payments CO4:Identify the provisions and rules of IGST in practical CO5:Examine the types of customs duty and its procedures

3	**IBHOC52**	**Core XIV Audit and Assurance***	**After completion of this course, student will be able to** **CO1: Explain the concept of audit & assurance and the functions of audit.Understand the audit framework as well as corporate governance framework.** **CO2: Demonstrate the handling of audit assignments and audit risks.Understand the preconditions of an audit.Appreciate the qualities of professional scepticism and professional judgment.** **CO3: Describe the evaluation of internal controls, techniques & audit tests. Understand the internal audit function.** **CO4: Defend the techniques of audit evidence, review and reporting.Understand audit completion and review procedures.** **CO5: Identify the techniques of performing the audit of specific items.Understand various audit assertions.**
4	**IBHOC53**	**Core XV - Accounting Package for Business (Tally Prime)**	**CO1: Demonstrate create, alter and shut down company accounts** **CO2: Sort out accounting vouchers with F11 features** **CO3: Explicate different types of journals and ledgers** **CO4: Assess bank reconciliation statement and bill reports** **CO5: Construct trial balance, stock summary and final accounts**
5	**IBHOC54**	**Core XVI - Business and Technology**	**CO 1: Understand the business organisation, its stakeholders and external environment.** **CO 2: Understand the business organisation structure, functions and governance.** **CO 3: Understanding the accounting, reporting system and compliance.** **CO 4: Understand the ways of leading and managing the team.**

			CO 5: Understand the professional ethics in accounting and business.
6	**IBHOE5A**	**DSE I - - Business Research Methods**	**CO1:** Explain the basic framework of research process and types of research **CO2:** Apply the various methodological tools for social and scientific research **CO3:** Develop research designs using research techniques **CO4:** Locate problem areas in organisational set up to organise, design, and conduct research for problem solving **CO5:** Execute skills in designing and drafting research report
7	**IBHOE5B**	**DSE I - Intellectual Property Rights**	**CO1: Acquire basic knowledge in IPR** **CO2: Explain concepts of Patent** **CO3: Gain knowledge in securitization of Intellectual Property** **CO4: Prepare the patent documents** **CO5: Deal with copyrights**
8	**IBHOE5C**	**DSE II – Financial Markets and Services**	**CO1: Acquire knowledge in financial system in India** **CO2: Explain new issues markets, SEBI and stock exchange** **CO3: Classify secondary market, listing and stock brokers** **CO4: Compare online trading with speculation and its concepts** **CO5: Share knowledge on mutual funds.**
9	**IBHOE5D**	**DSE II – Marketing Management**	**CO 1: Recognize the marketing management concepts, principles and practices.** **CO 2: Understand the significance of marketing functions in the overall managerial context**

			CO 3: Develop strategic thinking for effective marketing planning and decision making **CO 4: Analyze the reasons for the rapid growth of sales promotion** **CO 5: Evaluate the performance of different channels of distribution**
10	**IBHOS55P**	**SEC - Internship on GST**	**CO1: Write an Internship report upon completion of their internship** **CO2: To work & gain knowledge of real time business environment.** **CO3: To analyze best practices, system, processes, procedures and policies of a company/industry in different functional areas and bring forward the deviations.**

CLASS: III B.COM (HONOURS) (EVEN SEMESTER)

1.	**IBHOC61W**	**Core - XVII – Project**	**CO1:** Learn on their own, reflect on their learning and take appropriate actions to improve it **CO2:** Acquire skills to communicate effectively, clearly and coherently to get things done **CO3:** Develop plans to achieve project goals **CO4:** Plan and arrange for human and physical resources **CO5:** Develop stronger inclination towards flexibility and fearlessness in their approach to problem solving
2.	**IBHOC62**	**Core XVIII- Corporate Accounting**	CO1: Articulate the process of issue of shares of a company CO2: Prepare financial statements such as Profit & Loss Account and Balance Sheet CO3: Prepare balance sheet after Internal Reconstruction of company CO4: Analyse the case study of major amalgamations of companies in India CO5: Illustrate the process of e-filing of annual reports of companies.
3.	**IBHOC63**	**Core XIX - Performance Management**	**CO1:** Understand and apply modern techniques of management accounting **CO2:** Apply the decision making techniques in the context of resource optimization, risk mitigation, and promote efficiency **CO3:** Prepare various budgets **CO4:** Align performance management with

			organizational strategy, values and goals **CO5:** Elaborate divisional performance analysis for organizations
4.	**IBHOC64**	**Core XX – Corporate Law**	CO1: Define and Explain provisions relating to incorporation of company and related documents. CO2: Understand company processes, meetings, and decisions. CO3: Analyze the laws relating to dividend distribution, accounts of the company and audit & auditors of the company. CO4: Understand the role of the Board of directors and their legal position. CO5: State regulatory aspects involved in oppression, mismanagement, corporate restructuring and Winding Up and to study the composition of Adjudicating Authority i.e., NCLT and NCLAT and its powers.
5.	**IBHOC65**	**Core XXI - Security Analysis and Portfolio Management**	CO1: Illustrate investments and its nature CO2: Classify various avenues and attributes of financial instruments CO3: Analyse securities by applying fundamental tools CO4: Assess securities by adopting technical tools CO5: Compile the concept of portfolio management and its services
6.	**IBHOE6A**	**DSE III – Organisational Behaviour**	**CO1:** Justify the importance of human behaviour for a healthy working atmosphere **CO2:** Individual and group behaviour, which influence organisational climate **CO3:** Evaluate different motivational theories and apply motivational strategies in the organisational set up **CO4:** Suggest appropriate leadership styles for organizations **CO5:** Assess the elements of group dynamics and their impact in the organization.
7.	**IBHOE6B**	**DSE III – Business Environment**	**CO1: Acquire knowledge in business and its environment** **CO2: Clear understanding between social and cultural environment** **CO3: Explain economic environment** **CO4: Integrate political environment with legal environment** **CO5: Analyze the business environment for globalization with its benefits, problems and challenges**

8.	**IBHOS66**	**SEC - Management Information System**	**CO 1: Understand the ingredients of management information system** **CO 2: Develop the application of MIS in promoting managerial effectiveness** **CO 3: Examine the dimension of information system** **CO 4: Understand the recruitment and analysis** **CO 5: Explain the product based information system**
9.	**IBHOX6**	**Extra Credit - Total Quality Management**	**CO 1: Understand the quality norms of organisations** **CO 2: Explain the importance of quality management** **CO 3: Develop conversant with SWOT analysis** **CO 4: Apply benchmark for quality management** **CO 5: Deal with ISO certification process**

CLASS: I M.COM (ODD SEMESTER)

1	**IMCOC11**	**Core I - International Business Environment**	**CO1:** Understand, discuss and suggest on international business issues **CO2:** Acquire knowledge in globalization **CO3:** Gain knowledge international perspective of global business challenges **CO4:** Evaluate the impact of global business issues **CO5:** Apply market research to support an organization in international business decision Making

2	**IMCOC12**	**Core II - Advanced Business Statistics**	**CO1:** Understand and apply statistical concepts and procedures in business **CO2:** Use measurement of relationship in business decision making **CO3:** Implement probability analysis in day to day business management **CO4:** Select and use the right choice of statistical testing mode **CO5:** Administer and interpret hypothesis testing through standard error
3	**IMCOC13**	**Core III - Advanced Accountancy**	**CO1: Understand and implement accounting principles, concepts and accounting standards.** **CO2: Deal with accounting treatment in admission, retirement and death of a partner.** **CO3: Administer the reconstruction of the firms.** **CO4: Prepare insolvency and investment accounts.** **CO5: Construct insolvency, voyage, insurance, hire purchase and installment accounts.**
4	**IMCOC14**	**Core IV - Advanced Cost Accounting**	**CO1: Explain material control and its techniques** **CO2: Deal with allocation and apportionment of overheads** **CO3: Apply different methods of costing** **CO4: Analyze and control cost in process industries** **CO5: Reconcile between cost and financial accounts**
5	**IMCOE1A**	**DSE - I - Financial Markets and Services**	**CO1: Acquire knowledge on the functions of the financial system in reference to macro economy** **CO2: Explain on current structure and regulation of the Indian financial service sector** **CO3: Assess the various theoretical concepts underlying money and capital markets CO4: Comprehend the different financial institutions and the threats exposed to CO5: Deal with venture capital and non –banking companies**
6	**IMCOE1B**	**DSE- I - Business Management**	**CO1: Explain the role and functions of the business management** **CO2: Apply the various management theories in case studies** **CO3: Identify the goals and planning process in strategic management** **CO4: Evaluate the organizational effectiveness** **CO5: Demonstrate the importance of effective control system and its techniques**

7	**IMCOX1**	**Extra Credit- Practical Banking**	**CO1: Understand and explain the banking system in India** **CO2: Illustrate the RBI functions and its credit control measures** **CO3: Demonstrate various types of deposits and scheme of banking operations** **CO4: Deal in fund transfer through cheque, demand draft, and marking** **CO5: Differentiate between e-banking and traditional banking**

CLASS: I M.COM (EVEN SEMESTER)

1	**IMCOC21P**	**Core V - Financial Accounting Software Package (Lab)**	**CO1: Use the tally accounting software in business concern** **CO2: Explain the pay roll entries and display of payroll reports** **CO3: Apply the methods of costing, creation of voucher type and display transfer analysis** **CO4: Connect with MS excel, MS word through technology advancement** **CO5: Prepare bank reconciliation statement and receivable and payable bill with details**
2	**IMCOC22**	**Core VI- Advanced Management Accounting**	**CO1: Differentiate between management accounting, financial and cost accounting** **CO2: Measure and monitor cash flow statement** **CO3: Apply marginal costing techniques for managerial decisions** **CO4: Prepare budgets and deal with budgetary control** **CO5: Administer implementation of standard costing and variance analysis for material, labour, and overhead**
3	**IMCOC23**	**Core VII - Organizational Behaviour**	**CO1: Justify the importance of human behaviour for a healthy working atmosphere** **CO2: Individual and group behaviour, which influence organisational climate** **CO3: Evaluate different motivational theories and apply motivational strategies in the organisational set up** **CO4: Suggest appropriate leadership styles for organizations** **CO5: Assess the elements of group dynamics and their impact in the organisation**

4	**IMCOC24**	**Core VIII - Business Research Methods**	**CO1: Explain the basic framework of research process and types of research CO2: Apply the various methodological tools for social and scientific research CO3: Develop research designs using research techniques CO4: Locate problem areas in organisational set up to organise, design, and conduct research for problem solving CO5: Execute skills in designing and drafting research report**
5	**IMCOE2A**	**DSE - II - Global Marketing**	**CO1: Apply the various approaches in global marketing CO2: Demonstrate the types of disequilibrium in global marketing CO3: Deal with global market entry issues CO4: Explain the functions of economic integration and trade blocks in global environment CO5: Evaluate and design sustainable marketing and business strategies in global environments**
6	**IMCOX2**	**Extra Credit - Insurance and Risk Management**	**CO1: Identify the various types of risks and explain the risk management techniques CO2: Explain commercial risk management applications, policies, and business liability CO3: Deal with various risks management possibilities CO4: Suggest suitable risk management techniques for retirement planning and annuities CO5: Design and develop risk management techniques for government and non- government sectors**

CLASS: II M.COM (ODD SEMESTER)

1	**GMCOC31**	**Core IX -Corporate Accounting**	**CO1: Prepare final accounts for companies under revised accounting standards** **CO2: Deal with the accounts for amalgamations, absorption, and alteration of share capital** **CO3: Explain the accounts of banking and accounts of insurance companies** **CO4: Follow up the preparation of consolidated profit and loss account and balance sheet** **CO5: Measure double accounts and human resource accounting**
2	**GMCOC32**	**Core X -Direct Taxes**	**CO1: Explain the basic concepts of direct taxes and tax exemptions** **CO2: Compute the taxable income under heads of salaries and house property** **CO3: Assess the taxable income under heads profits and gains of business or profession CO4: Apply the set off and carry forward of losses and deductions** **CO5: Deal with the income assessment of individual and companies**
3	**GMCOC33**	**Core XI -Investment Management**	**CO1: Gain clarity in the basic concepts of investments and strategies to be followed** **CO2: Compute the risk and return analysis of securities CO3: Analyze and evaluate relevant securities for investment CO4: Evaluate portfolio performance** **CO5: Measure the portfolio performance under CAPM**
4	**GMCOC34**	**Core XII -Human Resource Management**	**CO1: Explain the basic concepts of human resource CO2: Demonstrate recruitment procedure** **CO3: Deal with different training techniques for different employees** **CO4: Administer different types of management techniques and theories to improve motivation** **CO5: Differentiate between traditional and modern methods in performance appraisal**

5	**GMCOE3B**	**DSE -III- Entrepreneurship Development**	**CO1: Explain different types of entrepreneurs and their characteristics** **CO2: Plan to overcome the problems in starting a new venture** **CO3: Educate and encourage the institutional support to entrepreneur in India** **CO4: Evaluate and support institutional support to entrepreneurs with special focus to women** **CO5: Develop the project identification and project report preparation skills**

CLASS: II M.COM (EVEN SEMESTER)

1	**GMCOC41**	**Core XIII - Financial Management**	**CO1: Specify the role and responsibilities of a financial manager/corporate financial officer** **CO2: Classify the different types of capital and capital structure** **CO3: Analyze how to apply the cost of capital and its application in capital budgeting decisions** **CO4: Evaluate and estimate the working capital management** **CO5: Discuss about dividend theory and policies regarding retained earnings**
2	**GMCOC42**	**Core XIV-Indirect Taxation**	**CO1: Explain various provisions of indirect taxes** **CO2: Deal with all aspects of supply of goods or services under CGST/ SGST CO3: Examine time and valuation taxable supply and levy and collection of CGST CO4: Administer supply of goods under interstate trade or commerce** **CO5: Discuss about valuation of goods and clearance of imported goods**
3	**GMCOC43PW**	**Core –XV-Project**	**CO1: Learn on their own, reflect on their learning and take appropriate actions to improve it** **CO2: Acquire the skills to communicate effectively and to present ideas clearly and coherently** **CO3: Develop plans with relevant people to achieve the project's goals** **CO4: Estimate the cost of human and physical resources required and manages to obtain the necessary resources**

			CO5: Develop stronger inclination towards flexibility and fearlessness in their approach to problem solving
4	**GMCOX4**	**Extra Credit - Total Quality Management**	**CO1: Explain the concept of total quality management and its control** **CO2: Apply the statistical quality control by through control charts** **CO3: Assess the theories of sampling inspection, defect diagnosis and prevention** **CO4: Measure the quality management system and total quality control** **CO5: Develop the ISO model and implementation of ISO 9000-ISO 14000**

DEPARTMENT OF PSYCHOLOGY

UG PROGRAMME BSC PSYCHOLOGY			
S.NO	**SUBJECT NAME**	**SUBJECT CODE**	**COURSE OUTCOME**
1.	**General Psychology**	**IBSYC11**	CO1: Define and trace the basic concepts in psychology CO2: Experiment with the current developments in psychology CO3: Analyze the sensory and perception process CO4: Reveal the importance of motivation- emotion and other factors CO5: Develop their skills and knowledge in psychology
2.	**Developmental Psychology- I**	**IBSYC12**	CO1: Define and trace knowledge of the significant factors which affect individuals throughout the lifespan: socioeconomic- ethnic- cultural- family- gender- marital status- and sexual orientation CO2: Identify the knowledge of physical and psychological development of early lifespan development CO3: Sequence the developmental milestone CO4: Estimate the early developmental history to determine impact on child and adolescent functioning CO5: Improve to minimize the developmental issues
3.	**Biological Psychology**	**IBSYA13**	CO1: Enumerate and specify the knowledge towards the concept of Biological Psychology CO2: Make use of the acquired knowledge relating to neuron-hormones and brain CO3: Dissect the structure and functions of human Physiology CO4: Interpret the importance of physiology in the field of Psychology CO5: Promote the knowledge gained into behavioral understanding
4.	**Personality Development**	**IBSYS14**	CO1: Relate and illustrate the terms of personality CO2: Interview the persons with different personality CO3: Discover the individual attitudinal behaviours CO4: Influence the importance of one's own self CO5: Evolve knowledge to empower oneself
5.	**Developmental Psychology – II**	**IBSYC21**	CO1: Find and outline the basic knowledge on physical and cognitive development from adolescence to adulthood and old age CO2: Apply developmental concepts and theories to everyday relationships and situations CO3: List the learning of developmental growth CO4: Inspect the psychological issues involved in death and bereavement CO5: Maximize the psychosocial development from adolescence to adulthood and old age
6.	**Experimental Psychology-I (Lab)**	**IBSYC22P**	CO 1: Define and specify the principles of sensory process CO 2: Experiment with various senses and its perceptions CO 3: Function the students with their practical exposure to asses- diagnose and interpret various

			psychological concepts CO 4 : Evaluate the basic skills of Experiment CO 5: Build the knowledge of using psychometric tools
7.	**Social Psychology**	**IBSYA23**	CO1: Label and infer the key factors in social Psychology and to perceive and understand individuals CO2: Make use of applied social psychology CO3: Analyse how to perceive and understand one„s self CO4: Validate the social world and apply Psychology in life CO5: Develop and predict human behavior
8	**Psychology of Personal Happiness**	**IBSYS24**	CO1: Define and trace the concepts of positive emotions in their real life CO2: Apply the strengths and virtues in their personal life CO3: Inspect the positive emotional states and its process CO4: Validate the effect of forgiveness and gratitude CO5: Invent new ways to stay positive
9	**Psychological First Aid- John Hopkins Model**	**IBSYX2**	CO1: Define and list the potential risk factors of crisis events and the concepts of PFA CO2: Identify to do PFA with safety- dignity and adapt to the culture of the person CO3: Explicate the Use of effective communication skills in crisis situations CO4: Determine the Action principles of PFA to help people in crisis situations CO5: Build the John Hopkins Model to provide PFA in various crisis events.
10	**Social Psychology - I**	**HBSYC31**	CO 1: Help the students outline the key factors in social Psychology and to perceive and understand individuals CO 2: Able to analyze how to perceive and understand one‘s self CO 3: Evaluate the social world and apply Psychology in life CO 4: Able to analyze major psychosocial issues
11	**Cognitive Psychology**	**HBSYC32**	**CO1:** Understanding the methods to study cognitive concepts **CO2:** Knowing various perceptual processes **CO3:** Demonstrate knowledge and understanding of well-established theories in cognitive Psychology **CO4**: understanding problem solving and creative aspects of cognition
12	**Psychological Statistics**	**HBSYA33**	**CO 1:** Understand the basic concepts in psychological statistics **CO 2:** Able to plot graphs for various data **CO 3:** Able to understand the nature of data **CO 4**: gain the knowledge of analyzing the data **CO 5:** Know about the applications of statistical test **CO 6**: able to apply this knowledge in the field of research
13	**Health Psychology**	**HBSYS34**	**CO 1:** Students will be able to learn the basic concepts of health Psychology. **CO 2:** Students will be able to learn the health related behaviours. **CO 3:** Students will be able to learn the concept of stress and its managing strategies**.** **CO 4:** Students will be able to relate health Psychology with other field of science.
14	**Training**	**HBSYX3**	CO 1: Understand the actual ground reality of the profession

	Programme		CO 2: Make them capable to face the challenges in the field CO 3: Mold the pupil empathetically towards specially challenged people of our society CO 4: Improve their professional skills
15	**Social Psychology-II**	**HBSYC41**	**CO 1:** Help the students outline the key factors in social Psychology and to perceive and understand individuals **CO 2:** Analyze how to perceive and understand one's self **CO 3:** Evaluate the social world and apply Psychology in life **CO 4:** Compare and contrast the research methodologies used in the scientific study of human Social Behaviour
16	**Psychopathology – I**	**HBSYC42**	**CO 1:** Introduce students to historical conceptions and perspectives of psychopathology **CO 2:** Impart knowledge and skills required for diagnosis of psychological conditions **CO 3:** Orient students on different psychological disorders, its causes and treatment **CO 4:** Consider the impact of these psychological problems on the individual and the wider social context
17	**Experimental Psychology - II**	**HBSYA43P**	**CO 1:** Learn the principles of learning process **CO 2:** Understand the various learning techniques **CO 3:** Gain the knowledge of using psychometric tools **CO 4:** Provide practical exposure to assess, diagnose and interpret various psychological Concepts
18	**Sports Psychology**	**HBSYS44**	**CO 1:** Introduce students to the Basic Concepts of Sports Psychology **CO 2:** Familiarize students with the importance of Psychology in sports **CO 3:** Understand the importance of motivation in sports **CO 4:** Know the role of anxiety in performances **CO 5:** Familiarize with various skills based training programmes in the field **CO 6:** Know the importance of exercise
19	**Life skills Education**	**HBSYSE45**	**CO1**: Define and Identify different life skills required in personal and professional life **CO2**: To increase one's knowledge and awareness of emotional competency and emotional intelligence at place of study/work. **CO3**: To provide opportunity for realising one's potential through practical experience. **CO4**: To develop interpersonal skills and adopt good leadership behaviour for empowerment of self and others. **CO5**: To set appropriate goals, manage stress and time effectively. **CO6**: Understand the basics of teamwork and leadership
20	**Internship**	**HBSYX4P**	CO 1: Gain practical knowledge CO 2: Understand the ground reality of profession CO 3: Acquire practical skills CO 4: Learn to write clinical case studies
21	**Psychopathology -II**	**GBSYC51**	CO1: Familiarize students with different Psychological disorders CO2: Orient students on causes, symptoms and treatment of different psychological disorders CO3: Familiarize with the DSM – IV multi-axial classification of mental disorders and criteria for diagnosing these disorders CO4: Able to apply these theoretical perspectives in reviewing

			each of the psychopathological conditions
22	**Personality development**	**GBSYC52**	CO1: Provide knowledge to empower one self CO2: Understand the enriching factors of personality CO3: Provide knowledge on the importance of positive relationships CO4: Develop interpersonal skills to the students
23	**Basic Research Methodology**	**GBSYC53**	CO1: Learn the principles of research design CO2: Identify the research problem CO3: Get basic knowledge on data collection CO4: Enable the students in report writing
24	**Human Resource Management**	**GBSYE5A**	CO1: To orient students towards the concept of HRM CO2: To include skill involved job analysis,recruitment,and training and performance appraisal CO3: To Provide innovative solutions to problem in the field of HRM CO4: To be able to identify and appreciate the significance of the ethical issue in HR CO5: To Explain the importance of human resource and their effective management in organization CO6:To develop, implement, and evaluate organizational development strategies aimed at promoting organizational effectiveness
25	**Organizational Behaviour**	**GBSYE5B**	CO1: Familiarize students about the factors that contribute to achieving organizational Effectiveness at the individual, group and structural level CO2: Expose them to organizational system, change and its management CO3: Orient them to the concept of work stress and its management CO4: Provide basic knowledge of key approaches and Models relating to Organizational Behaviour CO5:Identify specific steps managers can take to motivate the employees CO6:Apply different concepts relating to managing of conflicts,change,time and stress
26	**Forensic Psychology**	**GBSYE5C**	CO1: Describe current issues, problems,and trends in the field of forensic Psychology CO2: Apply basic research methods in Psychology,including research design,data analysis,and interpretation CO3:Use forensic assessment strategies,including interviews and observations to solve problesrelated to forensic Psychology CO4: Understand the legal issues in the profession of forensic Psychology CO5:Comprehending the student approaches in understanding criminal behaviours CO6:Making the student aware about the nature of criminal behaviour
27	**Counseling Psychology**	**GBSYE5D**	CO1: This advanced course will focus on the attempt, and the need, to understand the behaviours, actions and patterns of criminals CO2: Antisocial personality disorder and its impact on the

			criminal mind CO3: Comprehending the students about different approaches in understanding criminal behaviour CO4: Become aware of ethical and legal issues in counselling
28	**Counselling Psychology**	**GBSYE54**	CO1: Orient students about the importance of Guidance and Counselling CO2: Understand the nature of counseling situation CO3: Understand the various areas of counselling CO4: Become aware of Ethical and Legal issues in Counselling
29	**Emerging trends in Psychology**	**GBSYX5**	CO1: Gain knowledge on recent studies in Psychology CO2: Know the current scenarios in Psychology CO3: Understand the newly emerged scopes of Psychology CO4: Explore new trends of Psychology
30	**Basic Psychotherapies**	**GBSYC61**	CO1: Understand the meaning of therapy and faced by beginning therapists. CO2: Gain insight into the theoretical approaches of psychopathology. CO3: Understand the application of these theoretical principles in treating. CO4: Improve aesthetic professional skills of the students.
31	**Neuropsychology**	**GBSYC62**	CO1: Provide knowledge and understanding of brain mind and behaviour relationship with the help of current development in the field of neuroscience, scientific theories, clinical and real life examples. CO2: Facilitate a dynamic understanding of the field by discussing neuroimaging techniques, case examples, and current researches CO3Challenging the students to examine the field of Neuropsychology as framework for understanding behaviour and mental processes . CO4: Able to understand the link between neurological disorders and therapeutic practice.
32	**School Counselling**	**GBSYC63**	CO1: Orient students about the importance of School Counselling. CO2: Make them understand the Models of School Counselling CO3: Make them understand the various areas of School Counselling. CO4:Make them aware of deal with Suicidal thoughts, Depression, and Life Meaning
33	**Consumer Psychology**	**GBSYE6A**	CO1: Help the students to get basic knowledge relating to the impact of information technology on consumption patterns CO2: Describe the steps and techniques of consumer behaviour research including a discussion of qualitative and quantitative research models. CO3: Orient students about market segmentation, targeting and positioning. CO4: Understand consumer behavior in an informed systematic way CO5 : Understand the processes used when individuals, group or organizations make consumption decisions. CO6: Understand how the selection, use and disposal of consumer goods affect almost every aspect of

			our daily lives.
34	**Psychology of Women**	**GBSYE6B**	CO1: Provide awareness on the basic nature of women. CO2: Explain and be able to identify gender bias in research. CO3: Understand Cognitive ability and personality characteristics of women. CO4: Understand the role of women CO5:Know about Gender discrimination in Society CO6: Understand Gender comparison in Cognitive abilities and Attitudes about Achievement.
35	**Cyber Psychology**	**GBSYE6C**	CO1: Have an understanding about cyber space CO2: Make awareness on the importance of psychological aspect in cyber network. CO3: Understanding cybercrimes and issues of cyber bullying, cyber staling etc. CO4: Increasing impact of the digital medium in human rights
37	**Skills for employability**	**GBSED6**	CO1: Able to understand the way of success through bringing some attitude changes among them. CO2: Know how to build a positive personality CO3: Able to prepare resume and obtain interview and group discussion skills. CO4: Prepare themselves for Quantitative Analytical Aptitude Test
37	**Women studies**	**FBWS5/GBWS5**	CO1: Promote disseminate knowledge about women's roles in society and economic trends which affect women's lives and status CO2: Assimilate analytical understandings of the significance of gender (relations) and foster study of conduits and configurations of power, causes, contexts and consequences of women's subordination CO3: Know the rights and laws for protection of women CO4: Know women's psychological reactions to puberty, marriage, motherhood, abortion, birth control, menopause, etc.
PG PROGRAMME MSC PSYCHOLOGY			
1.	**Cognitive Psychology-Applied I**	**HMSYC11**	CO1: Acquiring basic knowledge of core concepts in human cognition CO2: Examine the process involved in cognition CO3: Applications of research based on perception and memory to real life settings CO4: Evaluating the errors in cognition CO5: Developing an appreciation of how cognitive psychology principles can be applied to real life setting
2	**Clinical Psychology**	**HMSYC12**	CO1: Choose and infer the varieties of clinical interviews CO2: Make use of the various assessments of memory-intelligence and personality CO3: Analyze the various behavioral assessments methods CO4: Assess the Intelligence and Memory through Clinical assessment CO5: Improve the student knowledge on Intelligence and memory- personality and behavior

3	**Psychopathology**	**HMSYC131**	CO1: Define and infer different psychological disorders CO2: Identify treatments for different psychological disorder CO3: Analyze the causes- symptoms and treatment of different psychological disorders CO4: Agree with the DSM-IV multiracial classification of mental disorders and the criteria for diagnosing these disorders CO5: Predict these theoretical perspectives in reviewing each of the psychopathological Conditions through every phase of life
4	**Experimental psychology-I (Lab)**	**HMSYC14P1**	CO1: Understand the concepts of learning sensation, attention, personality, intelligence and creativity CO2: Expanded knowledge of various assessment and procedures. CO3: Administer, analyze and interpret results from various psychological tools CO4: Deduct the findings from an assessment CO5: Discuss the findings from experiments and tests in one's own word
5	**Indian School of Psychology/ Positive Psychology**	**HMSYE1A/ HMSYE1B**	CO1: Enumerate and infer the meaning and importance of Indian psychology in the present CO2: Organize the preconceived notion about various social and health issues and its impact. CO3: Motivate the awareness about basics of psychology in Indian perspective. CO4: Test various theories of Indian psychology. CO5: Modify various doctrines of Indian psychology. / CO1: Define and infer the concepts of Positive Psychology CO2: Make use of Emotional states and process CO3: Discover their strengths and virtues and have a positive exposure of life CO4: Justify the reasons for their happiness and visualize life positively even under hardships CO5: Promote forgiveness and gratitude among their relationships
6	**Counseling Psychology**	**HMSYC21**	CO1: Relate and outline the importance of guidance and counselling CO2: Utilize the nature of counseling situations CO3: Dissect the various areas of counseling CO4: Importance ethical and legal issues in counseling CO5: Formulate the students to understand the meaning-basic concepts-purpose and importance of counseling in everyday life and skills required for counselling
7	**Cognitive Psychology-II**	**HMSYC22**	CO1: Relate and infer the basic concepts in psychology CO2: Identifying the recent advancements in cognitive psychology CO3: Analyze the basic knowledge about sensory processes in connections with psychological context CO4: Assess the depth theories in forgetting

			CO5: Improve the student knowledge on motivational-emotional and other aspects of behavior
8	**Research Methodology and Statistics**	**HMSYC23**	CO1: Define and outline the different stages of research CO2: Apply the various research methods CO3: Discover appropriate research tools CO4: Evaluate the basic knowledge on data collection CO5: Create the skill of reporting the research
9	**Experimental Psychology II- (Lab)**	**HMSYC24P**	CO1: Define and outline the principles of sensory process CO2: Experiment with the various senses and its perceptions CO3: Distinguish practical exposure to assess- diagnose and interpret various psychological concepts CO4: To test human behavior using psychological experiments. CO5: Improvise the knowledge of using psychometric
10	**International classification of Diseases / Special Education**	**HMSYE2A/ HMSYE2B**	CO1: Define and summarize the concept of abnormal behavior-classification and methods of assessment. CO2: Identify various pathological disorders & ICD-10 criteria of diagnosis. Introduce students to historical conceptions and perspectives of psychopathology CO3: Examine knowledge and skills required for diagnosis of psychological conditions CO4: Support students about the importance of different psychological disorders- its causes and treatment CO5: Change the impact of these psychological problems on the individual and the wider social context. CO1: Relate and explain different psychological disorders related with children. CO2: Identify causes, symptoms and treatment of different psychological disorders. CO3: Analyze historical conceptions and perspectives of psychopathology CO4: Discover knowledge and skills required for diagnosis of psychological conditions CO5: Build awareness about need of special education
11	**Neuropsychology**	**GMSYC31**	**CO1:** Provide knowledge and understanding of brain and behavior relationship with the help of current development in the field of neuroscience. **CO2:** Facilitate a dynamic understanding of the field by discussing case examples and current researches. **CO3:** Challenging the students to examine the field of neuropsychology as a framework for understanding behavior and mental processes. **CO4:** Able to understand the link between neurological disorders and therapeutic practice. **CO5:** Understand the structure of the nervous system, brain and functions of different lobes **CO6:** Understand the evaluation and interventions of brain

			pathology
12	**Psychotherapeutics**	**GMSYC32**	**CO1:** Understand the meaning of therapy **CO2:** Gain insight into the theoretical approaches of psychotherapy **CO3:** Understand the application of theoretical principles in treating **CO4:** Improve aesthetic professional skills of the students. **CO5:** Orient towards the nature, goals and prerequisites of psychotherapy **CO6:** Understand about the different schools and techniques in psychotherapy
13	**Rehabilitation Psychology**	**GMSYC33**	**CO1:** Understand the nature and extent of problems faced by specific categories of people who badly require safe shelter and rehabilitation. **CO2:** Understand The Government response toward rescue, intervention and rehabilitation for people who require immediate attention. **CO3:** Understand The national and international efforts for rehabilitation of street children, trafficked children, people affected by natural calamities and/or war and HIV/AIDS infected people. **CO4:** Familiarize students with different psychological disorders. **CO5:** Orient students on causes, symptoms and treatment of different psychological disorders. **CO6:** Increase the helping tendency of the student towards specially challenged people
14	**Experimental Psychology- III (Lab) Internship Programme**	**GMSYC34P**	**CO1:** Gain practical knowledge. **CO2:** Understand the ground reality of profession **CO3:** Learn to write clinical case studies.
15	**Human Resource Management/ Training & Development in Organization**	**GMSYE3A/ GMSYE3B**	**CO1:** Familiarize students about the factors that contribute to achieving organizational effectiveness, at the individual, group and structural level **CO2:** Expose them to organizational system, change and its management. **CO3:** Orient them to the concept of work stress and its management **CO4:** Provide basic knowledge of key approaches and Models relating to Organizational Behavior. **CO5:** Identify specific steps mangers can take to motivate the employees. **CO6:** Apply different concepts relating to managing of conflicts, change, time and stress. **CO1:** Understand various concepts in Training and Development. **CO2:** Gain an in-depth understanding of various Training Methods **CO3:** Understand the principles of Organization Development and its Techniques **CO4:** Provide basic knowledge of key approaches and Models relating to Organizational Behavior.

			CO5: Identify specific steps mangers can take to motivate the employees. **CO6:** Apply different concepts relating to managing of conflicts, change, time and stress.
16	**Project Work**	**GMSYC41PW**	**CO1:** Create thrust towards research. **CO2:** Develop research aptitude among students. **CO3:** Develop ability to apply various tools and techniques to solve day–to-day life problems.

THASSIM BEEVI ABDUL KADER COLLEGE FOR WOMEN
Department of Chemistry
I B.Sc. Chemistry

Subject list (Odd & Even)

Subject list - Odd semester

S.No	Subject Code	Subject Name	Course Outcome
1.	IBCHC11	Core-I General Chemistry	**CO1:** Recollect the historic development subatomic particles and comprehend the IUPAC-nomenclature of organic compounds **CO2:** Identify the acid base nature of the solution medium with insight gained from the theories **CO3:** Analyse atomic structure theories and make inferences **CO4:** Determine the Enthalpy of the reaction by applying acquired knowledge on thermodynamics **CO5:** Create the awareness about radioactive elements and ill effects on human and environment
2.	IBCHC12	Core-II Inorganic Chemistry-I	**CO1:** Outline the understanding of chemistry behind the metallurgical process for hydrogen and IA elements **CO2:** Identify trends observed along period and group-based periodic properties of elements in the periodic table **CO3:** Explain the principles of volumetric & qualitative analysis to find molarity, molality, and normality of given solutions **CO4:** Evaluate the MO and VSEPR theory understand nature of the chemical bonding and geometry in the organic and inorganic compounds **CO5:** Adapt the correct method for preparation, of hydrogen, hydrogen

			peroxide, water, oxygen, ozone
3.	IBCHS15P	Preparation of Consumer Products Practicals	**CO1:** Recall the principles and relate the preparative procedures for consumer products **CO2:** Apply the practical skills in handling chemicals **CO3:** Analyse consumer products based on physical characteristics of materials **CO4:** Evaluate the scaling up of process required for specific products **CO5:** Propose the new additives in arriving new consumer products

Subject list - Even semester

S.No	Subject Code	Subject Name	Course Outcome
1.	IBCHC21P	Core-III Inorganic Qualitative Analysis and Volumetric Analysis Practicals	**CO1:** List the principle behind qualitative of inorganic compounds and understand the nature of interfering ions **CO2:** Illustrate the volumetric law to quantify the solute in solutions. **CO3:** Examine the inorganic salt mixture for their cations and anions **CO4:** Compare the volumetric analysis based on the type of reaction and identify indicator requirements **CO5:** Design the volumetric procedure based on the nature of the solution
2.	IBCHC22	Core-IV Physical Chemistry-I	**CO1:** Recall the meaning of various terms involved in quantum chemistry and relate the physical phenomena **CO2:** Apply the concepts of thermodynamics & gaseous state to find thermodynamic parameters

			CO3: Assume the concepts of liquid Crystals to derive physical parameters **CO4:** Interpret the knowledge about colligative properties & adsorption **CO5:** Construct the phase diagram by applying phase rule
3.	IBCHS25	**Fundamentals of applied Chemistry**	**CO1:** Recall properties of fuels, alloys, paints & pigments to explain their applications **CO2:** Identify the choice of materials based on the composition **CO3:** Classify the cement and composite material based on the method of preparation **CO4:** Evaluate the environmental effect of fuels **CO5:** Predict the effective corrosion minimization method
4.	IBCHX2/IBCHS2O	**Food Chemistry/Online Course**	**CO1:** Define the chemical reaction observed in food products and comprehend the food spoilage **CO2:** Compare and analyse constituents of food samples **CO3:** Identify the chemistry behind texture of food samples **CO4:** Evaluate the required method for identifying food adulteration **CO5:** Elaborate the role of colouring agent nature in food samples

II B.Sc. Chemistry

Subject list (Odd & Even)

Subject list - Odd semester

S.No	Subject Code	Subject Name	Course Outcome
1.	HBCHC31	Core-V Organic Chemistry-I	**CO1:** Recall preparative methods for hydrocarbons, halogen, organometallic compounds and understand their physical properties **CO2:** Apply the basic concepts to represent and identify the isomerism in organic compounds **CO3:** Aanalyse chemical reactions of organic and organometallic compounds to find the reaction pathway (SN^1& SN^2 and E_1 & E_2) **CO4:** Determine the type of reaction in preparation of drugs and petrochemical products **CO5:** Propose the type of reagent for a specific organometallic reactions
2.	HBCHC32P	Core-VI Organic Analysis & Organic Estimation Practicals	**CO1:** List the basic principles of organic chemistry to comprehend functional group **CO2:** Build skills in preparing derivate of organic compounds **CO3:** Analyze the organic compounds for aromatic/aliphatic/saturation/unsaturation **CO4:** Determine the physical properties of organic compounds **CO5:** Estimate the phenol, aniline, and glucose content of organic compounds
3.	HBCHA33	**Pharmaceutical Chemistry – I**	**CO1**: Recall the basic concepts of pharmaceutical chemistry **CO2**: Apply appropriate chromatography techniques in TLC, HPLC, and GC in isolation of drugs **CO3:** Analyze the assay and metabolism of drugs to find the major pathway **CO4:** Determine the application of pharmaceutical chemistry is concerned

			with the drug design and synthesis of biologically active molecules **CO5:** Design potential candidate for drug molecule using the QSAR analysis
4.	HBCHE34	**Introduction To Marine Chemistry**	**CO1:** Recall the characteristics of seawater and understand the sea battery **CO2:** Classify the acid-base reaction and stable isotopes **CO3:** Analyze the micro and macronutrient in seawater **CO4:** Compare carbon cycle and chemical equilibria in marine chemistry **CO5:** Test the seaweed cultivation with knowledge acquired
5.	HBCHX3/HBCHX3O	**Chemistry of Consumer Products/ Online Course**	**CO1:** Recall the composition of consumer products and recognize their properties **CO2:** Apply the knowledge on consumer products to understand structure activity of the materials **CO3:** Analyze the hazards of the consumer products in the market **CO4:** Evaluate the current development in the field of industrial chemistry **CO5:**Formulate novel preparative methods for consumer products

Subject list - Even semester

S. No	Subject Code	Subject Name	Course Outcome

1.	HBCHC41	Core-VII Inorganic Chemistry-II	**CO1:** Recall the mineral source and understand the chemistry behind extraction of group IB, IIA, IIIA, IV, V & VI elements. **CO2:** Identify the periodic trend observed in IB, IIA, IIIA, IV, V & VI group elements. **CO3:** Classify the inorganic compounds based on the bonding property. **CO4:** Compare the periodic property to understand the chemical reactivity of halogens and nobel gases. **CO5:** Elaborate the periodic properties of transition element to account for catalytic property
2.	HBCHC42	Core-VIII Organic Chemistry-II	**CO1:** Recall the conformation in cycloalkanes and aromatic hydrocarbons and explain the conformational analysis **CO2:** Classify the aromatic and non-aromatic heterocyclic compounds based on preparation, properties & uses **CO3:** Examine the products obtained in oxidation, reduction, and nucleophilic addition reactions **CO4:** Evaluate the pericyclic and photochemical reactions with acquired basics **CO5**: Modify the raw material in preparation of carboxylic acids and heterocyclic compounds
3.	HBCHA44	**Pharmaceutical Chemistry– II**	**CO1:** Label the common drugs and Interpret the basic concepts of organic pharmaceutical aids **CO2:** Identify the general antipyretics, anti-inflammatory, and anaesthetics agents **CO3:** Analyze the various diseases in human beings and their treatment methods **CO4:** Evaluate importance of the Indian medicinal plants **CO5:** Predict antiseptics, disinfectants, cancer, antineoplastic and antibiotics drugs

4.	HBCHE45	**Selected Topics in Applied Chemistry**	**CO1:** List the various insecticides, herbicides, fungicides and understand safety measures **CO2:** Select the suitable method for vermiculture **CO3:** Analyse dairy products based on properties **CO4:** Classify the natural & synthetic polymer **CO5:** Develop practical skills to the new materials with acquired knowledge on leather
5	HBCHX4/ HBCHX4O	**Dairy Chemistry/Online Course**	**CO1**: Know the composition of dairy products and understand their properties **CO2**: Identify the biochemical components in milk **CO3**: Analyze the proteins of milk and milk products. **CO4**: Determine the Pasteurization and Homogenization of Milk Processing **CO5**: Develop new recipes of milk products

III B.Sc. Chemistry

Subject list (Odd & Even)

Subject list - Odd semester

S.No	Subject Code	Subject Name	Course Outcome
1.	GBCHC51	Core-X Physical Chemistry-II	**CO1**: Remember the laws of chemical equilibrium and understand the principles applied in electrochemistry and group theory **CO2**: Identify the mechanism of chemical equilibrium and kinetics of

			electrochemistry **CO3**: Categorize the chemical equilibrium, kinetics in solutions and electrochemistry **CO4**: Interpret the kinetic aspects of enzyme catalysis **CO5**: Solve the point group symmetry for solid state materials
2.	GBCHC52	Core-XI Organic Chemistry-III	**CO1:** List the preparation, properties of bioorganic compounds and understand their structure **CO2:** Apply basics to understand rearrangement reactions **CO3:** Classify the molecular rearrangement and tautomerism **CO4:** Compare the general methods of alkaloids and terpenoids **CO5:** Elaborate the synthesis and structural elucidation of alkaloids and terpenoids
3.	GBCHC53P	Core-XII Physical Chemistry Practicals	**CO1:** Know the effect of electrolyte on CST of partially miscible liquids and understand the principle behind viscometry **CO2:** Experiment with conductometric and potentiometric titration **CO3:** Analyze the separation in

			components of a binary mixture and preparation of inorganic complexes to identify counter ion **CO4:** Determine Rf values and choose eluent for organic compounds to be used in paper, column, and thin-layer chromatography **CO5:** Develop the extraction procedure for natural products
4.	GBCHE5A/GBCHE5 B	**Industrial Chemistry/ Biological Chemistry**	**CO1:** Recall the raw materials for commercial materials and understand the chemical processes **CO2:** Identify the type of fermentation based on composition of products **CO3:** Classify the paper, cement, fertilizers, glass, rubber, soaps, and detergents **CO4:** Explain the cleaning action of soaps and detergents **CO5:** Modify pulping methods for paper manufacture / **CO1:** List the biochemical changes during digestion and

			understand absorption of nutrients **CO2:** Apply the possible physiological effects to hormone functional changes **CO3:** Analyse the biological role of micronutrients **CO4:** Classify the vitamins, hormones & enzymes **CO5:** Design the function mimics inhibitors
5.	GBHE5C/GBCHE5D	**TEXTILE CHEMISTRY/ANALYTICAL METHODS**	**CO1:** Recall the principle that involve in dying and understand morphology of fibres **CO2:** Choose the methods in operation of singeing **CO3:** Classify application of textile fibers, operation for singeing and dyes **CO4:** Compare dyeing and printing with its applications **CO5:** Design the printing of synthetic fibres for their applications/**CO1:** List the sources for atomic spectroscopy and understand inference from quatitative measurements **CO2:** Apply the instrumentation knowledge in handling spectral, chromatography techniques with precautions

			CO3: Classify the molecular transition in various spectral techniques. **CO4:** Evaluate the Woodward-Fieser rules and understand λ_{max} observed in UV-Vis spectra **CO5:** Suggest the application of chromatography and spectral technique for the identifying and isolating compounds
6	GBCHE54P	**Practical Course in Applied Chemistry**	**CO 1:To develop skill in testing and analyzing organic compounds** **CO 2: To learn about various method of treatment and analysis of water** **CO 3: To develop skills required in chemistry such as the proper handling of apparatus and chemicals** **Co 4: To learn principles and procedure involved in estimation of glucose, acetone & hardness of water**

Subject list - Even semester

S.No	Subject Code	Subject Name	Course Outcome
1.	GBCHC61PW	Core-XII Project	**CO1:** Choose and discuss the basic concepts in the chemistry project

			CO2: Illustrate the principles and procedures employed in thesis writing of chemistry **CO3:** Examine the skillsets required of chemistry project **CO4:** Choose the appropriate procedures in handling of apparatus and chemicals **CO5:** Formulate the designer materials with ecofriendly starting materials
2.	GBCHC62	Core-XIII Inorganic Chemistry-III	**CO1:** Recall the periodic property of lanthanides and actinides and understand the general characteristics of inner transition elements **CO2:** Utilize the Valence Bond theory, Crystal Field theory & Molecular orbital theory to arrive geometry and structure of coordination compounds **CO3:** Categorize the solid state crystal based on imperfections observed in light of band theory **CO4:** Compare the stability of coordination complexes with organometallic compounds **CO5:** Develop the basic understanding on the biological role of hemoglobin, myoglobin, metalloporphyrins, and chlorophyll
3.	GBCHC63	Core- XIV Physical Chemistry-III	**CO1:** List the basic principle and laws applied in photochemistry, electrochemistry, statistical thermodynamics, colloidal state, and spectroscopy

			CO2: Compare the photophysical and photochemical processes of photochemistry **CO3:** Classify the characteristics, preparations and purification of colloidal matter **CO4:** Assess the electrolytic and electrochemical cells working **CO5:** Solve transition assignment correspond to IR, Raman, NMR and UV spectral peaks
4.	GBCHC64P	Core- XV Industrial and inorganic preparation practicals (LAB)	**CO1:** List the principles and find procedures involved in gravimetric analysis and organic preparation **CO2:** Apply gravimetric analysis to estimate lead, barium, calcium, copper, nickel, and chloride **CO3:** Analyse the preparation of organic compound using nitration, bromination, hydrolysis, oxidation, condensation, and benzoylation **CO4:** Evaluate the skills acquired in proper handling of apparatus and chemicals of organic compounds **CO5:** Develop practical skills in testing and analyzing organic compounds
5.	GBCCHE6A/GBCHE6B	**Introduction To Green Chemistry & Nanochemistry/ Polymer Chemistry**	**CO1**: Recall the basic principle of green chemistry and understand the green chemistry observed in everyday life **CO2**: Apply the appropriate synthesis, purification methods for nanoparticles **CO3**: Compare the green reagent and green catalysts synthesis **CO4**: Explain the general method of nanoparticles synthesis **CO5**: Develop practical skills for preparing novel drug delivery nanoparticles /

			CO1: Define the basic principle of polymers in rubber, plastics, and resins and understand classification based on structure **CO2:** Apply the basic knowledge polymerization to understa the mechanism of formation **CO3:** Categorize the plastics and re based on polymer additives **CO4:** Compare the polymer proce with properties of polym obtained **CO 5:** Instigate the composition a applications of conducting a biodegradable polymer
6.	GBCHS65P	**Industrial Chemistry Practicals**	**CO1:** List the types of alkalinity in water samples, and demonstrate separation of essential oils, and testing of adulterants **CO2:** Identify extractable coloring and flavoring agents from flowers and fruits **CO3:** Compare the estimation of hydrogen peroxide and amino acid **CO4:** Deduce the amount of glucose in food samples **CO5:** Adapt the novelty in soap preparation by changing additives

I M Sc Chemistry (2022-2023)

Subject list - Odd semester

S.No	Subject Code	Subject Name	Course Outcome
1.	HMCHC11	Organic Chemistry-I	**CO 1:** Define the principles of reaction mechanism and modern reagents used for various reactions

			CO 2: Find the Mechanistic aspects in S_N^1, S_N^2 and S_N^i **CO 3:** Compare the principles and reaction mechanism involving in the naming reactions **CO 4:** Explain the basic knowledge about the Electrophilic, Nucleophilic and Free-radical additions **CO 5:** Determine the oxidation and reduction reaction
2.	**HMCHC12**	**Ino**rganic Chemistry-I	**CO 1:** Define the basic concepts of nuclear chemistry and types of nuclear reactions **CO 2:** Explain the basic knowledge about the acid-base systems and non-aqueous solvents **CO 3:** Apply the Basics of metallic clusters, inorganic rings and cages **CO4:** Identify the principles of utilizing radioactivity applied to chemistry, chemical processes **CO 5**: Construct the basic concepts of solid-state chemistry
3.	**HMHC13**	**Physical Chemistry-I**	**CO 1:** Define the principles of adsorption **CO 2:** Explain the details of Quantum statistics **CO 3:** Construct the significance of laws of thermodynamics **CO4:** Determine the theories of reaction rates, how reaction rates are measured and represented in rate laws **CO 5:** Extend the knowledge of separation techniques and their applications
4.	**HMCHC14P**	**Organic Chemistry Practical**	**CO 1:** Describe about the qualitative and quantitative analysis **CO 2:** Explain the preparation of organic compound by double stage **CO 3:** Classify the systematic separation of qualitative analysis

			CO 4: Apply the knowledge of qualitative analysis for the determination of organic Mixtures **CO 5:** Discuss the preparation of organic compound
5.	HMCHE1A/HMCHE1B/HMCHE1C	Instrumental Methods of Analysis/Green and Environmental Chemistry/Computational Chemistry	**CO 1:** Find the statistical treatment of data **CO 2:** Explain the various methods involved in electroanalytical techniques **CO3:** Classify the forms of precipitation **CO 4:** Catagorize the various methods involved in thermo analytical techniques **CO 5:** Determine the various methods involved in spectroanalytical techniques/**CO 1:** Understand the various greener synthetic pathways and implement it in the production of pharmacological compounds **CO 2:** Explain the awareness for reducing waste, minimizing energy consumption in organic synthesis **CO 3:** Identify the techniques of green synthesis in organic reactions **CO 4:** Construct the various alternative resources for green technology in organic synthesis. **CO 5:** Design the chemical products and processes / CO 1: Recall and understand the basic theories of quantum chemistry CO 2: Compare the computational methods with insight gain from quantum chemistry CO 3: Correlate approximation applied in basis sets to better accuracy CO4: Evaluate the vibrational and rotational spectra for arriving various properties of materials

			CO5: Think critically and analytically on investigation and interpretation of experimental results
6.	HMCX1/HMCHX1O	Forensic Chemistry/Online Course	**CO 1:** Define the importance of forensic chemistry and an exposure to find, Analyse and find a suitable method to detect the crime **CO 2:** Illustrate the scene of crime **CO 3:** Construct the theories of causation of crime **CO 4:** Analyse and find a suitable method to detect the crime **CO 5:** Catagorize the Offences against person

Subject list - Even semester

S.No	Subject Code	Subject Name	Course Outcome
1.	HMCHC21	Organic Chemistry-II	**CO 1:** Find the synthesis and the isolation of amino acids, proteins, enzymes and nucleic acids **CO 2:** Illustrate the principle of conformational analysis and stereochemistry **CO 3:** Identify the versatile knowledge of rearrangements **CO 4:** Classify the basic ideas of pericyclic reactions **CO 5** : Estimate the different organic reactions (radical and concerted)
2.	HMCHC22	Inorganic Chemistry-II	**CO 1:** Relate the chemistry of main group elements, non- transition elements and elements in Lanthanide series **CO 2:** Understand the concept of Bio inorganic Chemistry **CO 3:** Identify the Photochemistry of metal complexes **CO 4:** Classify the types of coordination compounds, reaction and its applications. **CO 5:** Predict the geometries of simple molecules

3.	HMCHC23	Physical Chemistry-II	**CO 1:** Explain the knowledge of photochemistry. **CO2:** Understand the different types of galvanic cells, their Nernst equations, and measurement of emf, calculations of thermodynamic properties and other parameters from the emf measurements. **CO 3:** Identify the chemistry of conductnce and its variation with dilution, migration of ions in solutions and applications of conductance measurement. **CO 4:** Analyse the various principle involved in NMR Spectroscopy **CO 5:** Discuss to detect the atom by Nuclear Quadruple Resonance
4.	HMCHC24P	Inorganic Chemistry Practical	**CO1:** Demonstrate the handling of chemicals and safety measurements in the chemistry laboratory **CO 2:** Understand how to carry out different types of reactions and their workup methods **CO 3:** List out the exact solutions for quantitative analysis **CO4:** Apply the knowledge of qualitative analysis for the determination of inorganic Mixtures **CO 5:** Synthesize Inorganic complexes and also find their purity
5.	HMCHE2A/ HMCHE2B	Applied Electrochemistry/Polymer Chemistry	**CO 1:** Define the energy efficiency and Columbic efficiency for a battery charge/discharge cycle **CO 2:** Explain the various methods involved in the Potential Sweep Methods. **CO 3:** Identify the corrosion and stability of metals **CO 4:** Compare the operation of batteries to hydrogen fuel cells and other types of fuel cells **CO 5:** Discuss the importance of kinetic electrode process/**CO 1:** List the essential role of polymer in industries

			CO 2: Compare the importance of various types of polymers and their applications **CO 3:** Illustrate the awareness on polymer processing **CO 4:** Distinguish the mechanisms of polymerization **CO 5:** Evaluate the polymer sample using different techniques
6.	HMCHX2/HMCHX2O	Applied Chemistry/Online Course	**CO 1:** Understand the water technology **CO 2:** Explain the cement and glass chemicals **CO 3:** Apply the concept of lubricants and protective coatings **CO 4 :** Compare the various types of lubricants **CO 5:** Discuss the Constituents of paints

II M Sc Chemistry (2022-2023)

Subject list - Odd semester

S.No	Subject Code	Subject Name	Course Outcome
1.	GMCHC311	Organic Chemistry-III	CO1: Recall the knowledge of the natural products and understand their structure CO2: Apply the Fieser woodward rules to calculate wavelength λmax and use finger print region to identify the functional group CO3: Analyse the mass spectral data to identify the composition of the compounds CO4: Evaluate the raw materials to prepare different heterocycles CO5: Construct the structural problems based on all the spectral techniques

2.	GMCHC321	Inorganic Chemistry-III	CO1: Define the 18 electron rule and understand the stability of organometallic compounds CO2: Identify the H-bonding and linkage isomers using IR spectral data CO3: Analyse the progress of the reaction and rate of reaction using NMR spectral data CO4: Evaluate the usage of organometallic compounds as homogenous catalyst CO5: Construct the principles involved in medicinal bioinorganic chemistry CO6: Evaluate the driving force for bond activation
3.	GMCHC331	Physical Chemistry-III	CO1:Know the different motion of the subatomic particles and understand the principles of quantum chemistry CO2: Apply the concepts of computer applications in chemistry and their stability for many practical uses CO3: Analyse the material to find the cause for corrosion CO4: Interpret the concepts in the group theory CO5: Discuss knowledge of approximate methods for electron correlation
4.	GMCHC341P	Physical Chemistry practical	CO1: Understand the basic principles of lab techniques adopted in physical laboratories and relate the practical

			applications of conductometry CO2: Apply the potentiometric technique to find pH of the solution CO3: Compare different acid base combinations with their conductance response CO4: Estimate the measurement of various physical and chemical properties CO5: Develop new method to identify acid contaminants
5.	GMCHE3A1/GMCHE3B1	Nano Science and Nanotechnology/ Material Chemistry	CO1: Understand the developments in nanotechnology and know about the significance of 1D, 2D and 3D nanoparticles CO2: Apply the theoretical concepts to study the properties of nano materials CO3: Analyse the nanomaterials using different microscopic techniques CO4: Compare the various types of carbon/inorganic nanoparticles CO5: Discuss the recent development in nano-medicine/ CO1: Understand the basic concept of structure of matter and list their various properties CO2: Apply the related experiments for their research work CO3: Analyze the experimental techniques for

			controlling the chemical reactions CO4: Determine the mechanism of chemical reactions for optimizing the experimental conditions CO5: Discuss the thin film deposition techniques and their characterization

NON-MAJOR ELECTIVE PAPERS OFFERED FOR STUDENTS OTHER THAN

B.Sc Chemistry

S.No	Subject Code	Subject Name	Course outcome
1	HBNM3CH	Chemistry in Everyday life	CO1: Find the safe cosmetics products by relating to essential oil used CO2: Apply the basics to appreciate the protective coatings used in everyday life CO3: Analyse the chemical composition to know environmental hazards of pesticides CO4: Assess the representative drugs that are used for different diseases CO5: Adapt safety measure for first aid in any accidents and suggest Indian phytochemical drugs
2	HBNM4CH	Chemistry in the Service of Mankind	CO1: Recall the importance of polymer in biomedical field and understand the nutritional value of food products CO2: Choose appropriate food preservatives CO3: Compare and find the correct soap formulation for soaps, detergent manufacturing based on purpose CO4: Evaluate the disease nature and its treatment procedures with knowledge acquired CO5: Propose the remedies for common disease based on plant products

CERTIFICATE COURSE

S.No	**Subject Code**	**Subject Name**	**Course Outcome**
1.	**ICWT1**	**Water Chemistry**	1. To acquire knowledge on water resources and conservation methods 2. To understand the chemistry behind treatment methods for industrial effluent and potable

			water
2.	**ICWT2P**	**Waste water treatment Practical**	1. To build practical skills to analyse water samples 2. To understand instrumental errors and precisions
3.	**ICDC1**	**Dairy Chemistry**	1. To acquire knowledge on milk, milk proteins and milk lipids 2. To understand physico – chemical changes and effects of various milk constituents of the milk products
4.	**ICDC2P**	**Dairy Chemistry Practical**	1. To acquaint with techniques associate with dairy quality assessment 2. To understand the chemistry behind treatment methods for dairy products analysis
5	**ICAT1**	**Aromatherapy and Cosmetics**	1. To help the students in understanding the key concepts of aromatherapy and cosmetics 2. To acquire complete knowledge and experience of aromatherapy in health care such asskin care, hair care, body massage and reflexology
6	**ICAT2P**	**Preparative lab for cosmetics and personal care products**	1. To strengthen the students to get practical experience on aromatherapy-using oil for skin care, hair care, full body massage and reflexology 2. It enables the students to apply the beauty treatment confidently and helps to improve the particular functioning of systems through body massage

DEPARTMENT OF MICROBIOLOGY

Academic year 2022-2023

COURSE OUTCOMES

Class: I BSc Microbiology (odd semester)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOMES
1	**IBMBC11**	**Core I - Fundamentals of Microbiology**	**Course Outcomes**: After successful completion of the course,students will be able to **CO 1**: Discuss the basic concepts and list the history of Microbiology. **CO 2**: Identify the economically important microbes(Bacteria& Fungus) **CO 3**: Elaborate the structure and functions of Prokaryotes **CO 4**: Interpret the economically value fresh water and marine microbiology **CO 5**: Innovate the cultivation methods of pigments producing marine algae
2	**IBMBC12P**	**Core II (Practical) - Lab Course in Fundamentals of Microbiology**	**Course Outcomes**: After successful completion of the course, students will be able to **CO 1**: Recall the fundamentals of microbiology and explain the procedures & techniques of microbiology **CO 2**: Demonstrates the types of culture media & sterilization technique **CO 3**: Highlight the aseptic and pure culture techniques, preparation and viewing of sample under the microscope **CO 4**: Explain and compare the structural characteristics of algae and fungi **CO 5**: Experiment various biochemical and physiological methods to identify the microorganisms
3	**IBMBS14**	**SKILL BASED COURSE I –INTRODUCTORY VIROLOGY**	**Course Outcomes**: After successful completion of the course,students will be able to **CO 1**: Define virology and discuss the concepts of structure and classification of virus **CO 2**: Illustrate knowledge on viral quantification methods **CO 3**: Dissect the various plant and animal infections –its pathogenesis and treatment. **CO 5**: Deduct the Human viral infections - its pathogenesis and treatment **CO 4**: Discuss insight the facts of replication of virus

Class: I BSc Microbiology (EVEN semester)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOMES
1	**IBMBC21**	**CORE III – MICROBIAL PHYSIOLOGY**	**Course Outcomes**: After successful completion of the course, students will be able to, **CO 1**: Observe bacterial growth curve and its effect on environmental factors **CO 2**: Associate cyanobacteria to facilitate their application **CO 3**:Classify the photosynthetic pathways **CO 5**: Explain the transport mechanisms in microbes **CO 4**: Improve knowledge on biosynthesis of fatty acids and their different pathways
2	**IBMBC22P**	**CORE IV – LAB COURSE IN MICROBIAL PHYSIOLOGY**	**Course Outcomes**: After successful completion of this course, the students will be able **CO 1**: Identify the bacteria and classiy the isolated from Bacteria different sources. **CO 2**: Demonstrate methods such as Micrometry, Haemocytometer and Turbidity method **CO 3**: Comparing different biochemical test for microbial identification. **CO 4**: Predict the bacterial physiological changes using biochemical methods **CO 5**:Conclude the characters of various microorganisms
3	**IBMBS24P**	**SKILL BASED COURSE II – LAB COURSE IN AQUACULTURE**	Course Outcomes: **CO 1**: Provide a basic understanding of aquarium setting **CO 2**: Preparation of fish feeds **CO 3**: Maintenance of aquarium for breedingCO 4: Enlighten the entrepreneurial skill

Class: II BSc Microbiology (odd semester)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOMES
1	**HBMBC31**	**CORE V– MOLECULAR BIOLOGY**	**Course Outcomes:** Upon completion of the course, students will be able to CO 1: Describe about genome organization and structure of Nucleic acid CO 2: Obtain clear knowledge about DNA replication, transcription & translation CO 3: Know about post transcription & post translational modification CO 4: Understand operons and how gene regulation occurs in both prokaryotes and eukaryotes CO 5: Reflect critically about gene regulation in both prokaryotes and eukaryotes

2	**HBMBC32P**	**CORE VI - LAB COURSE IN MOLECULAR BIOLOGY**	**Course Outcomes:** Upon completion of the course, students will be able to, CO 1: Explain various techniques involved in molecular biology CO 2: Elucidate and perform the isolation of Chromosomal DNA from *E. coli* and yeast CO 3: Understand the preparation of solutions and buffers CO 4: Explain the isolation and separation of Plasmid DNA CO 5: Understand the separation of protein
3	**HBMBA33**	**SECOND ALLIED I – INTELLECTUAL PROPERTY RIGHTS**	**Course Outcomes:** Upon completion of the course, students will be able to, **CO 1:** Describe the fundamental aspects of Intellectual Property Rights **CO 2:** Disseminate knowledge on patents, patent regime in India and abroad and registration aspects **CO 3:** Expertise on copyrights and its related rights and registration aspects **CO 4:** Intended the knowledge on trademarks and registration aspects **CO 5:** Demonstrate on Design, Geographical Indication (GI), Plant Variety and Layout Design Protection and their registration aspects **CO 6:** Explore the current trends in IPR and Govt. steps in fostering IPR
4	**HBMBE34**	**SKILL BASED COURSE III - BIOINFORMATICS**	**Course Outcomes:** Upon completion of the course, students will be able to, CO 1: Define bio informatics, its scope and application CO 2: Discuss the databases related to genome and proteome CO 3: Explain software to extract information from database and sequencing tools CO 4: Describes the development of phylogenetic trees

Class: II BSc Microbiology (EVEN semester)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOMES

1	**HBMBC41**	**CORE VII – MICROBIAL GENETICS**	**Course Outcomes**: CO 1: Grasp knowledge about gene organization in prokaryotes as well as eukaryotes CO 2: Establish why mutation and recombination is important to the genetic diversity CO 3: Reflect how bacteria exchange or obtain new gene from other livings CO 4: Describe about transposable elements both in prokaryotes and eukaryotes CO 5: Portray life cycle of phage and its advantage and disadvantage
2	**HBMBC42**	**CORE VIII – MEDICAL MICROBIOLOGY**	**Course Outcomes:** Upon completion of the course, students will be able to, CO 1: Understand the difference between normal flora and pathogenic microorganism CO 2: Cognizant knowledge on bacterial pathogenicity. CO 3: Attain knowledge on viral infection and its retrieval CO 4: Interpret the fungal and protozoan infections. CO 5: Understand the contagious infection and use of antibiotics
3	**HBMBC43P**	**CORE IX - LAB COURSE IN MICROBIAL GENETICS AND MEDICAL MICROBIOLOGY**	**Course Outcomes**: Upon completion of the course, students will be able to, CO 1: Explains the process behind the mutation CO 2: Elaborates the basic and common methods in Microbial Genetics CO 3: Clarifies the relationship between Phenotype and Genotype CO 4: Understand the gene transfer mechanism CO 5: Empathize the collection and processing of various medical samples. CO 6: Get hands on training on the various techniques CO 7: Describes the isolation and identification of microorganisms from human samples CO 8: Find out the efficiency and MIC of antibiotics
4	**HBMBA44**	**SECOND ALLIED II – BIOINSTRUMENTATION**	**Course Outcomes:** Upon completion of the course, students will be able to CO 1: Gain knowledge on the instruments used in the field of biology CO 2: Describes the working principle of microscopy CO 3: Conceptualize the principles and working techniques of chromatography and its types CO 4: Explains about spectrophotometer, Atomic Absorption Spectroscopy CO 5: Illustrate the centrifugation and the basic principles involved in the sedimentation.

			CO 6: Elucidate the electrophoretic technique, AGE, PAGE
5	**HBMBE45P**	**SKILL BASED COURSE IV – LAB COURSE IN MEDICAL LAB TECHNOLOGY**	**Course Outcomes:** Upon completion of the course, students will be able to, CO 1: Get hands on training on various techniques used in clinical laboratory. CO 2: Describes various sample collection methods CO 3: Explains different diagnostic methods CO 4: Gain ideas about the various microbial tests through hospital visit

Class: III BSc Microbiology (ODD semester)

1	**GBMBC51**	**CORE X – ENVIRONMENTAL AND AGRICULTURAL MICROBIOLOGY**	**Course Outcomes:** Upon completion of the course, students will be able to **CO1:** Describe the distribution of microorganism and its role in environment **CO 2**: Reflect critically about the biogeochemical cycles **CO 3**: Conceive knowledge about waste water treatment **CO 4**: Critically clarify the application of microbes in agriculture like biofertilizers
2	**GBMBC52P**	**CORE XI – LAB COURSE IN MEDICAL MICROBIOLOGY**	**Course Outcomes:** Upon completion of the course, students will be able to **CO 1**: Empathize the collection and processing of various medical samples. **CO 2**: Get hands on training on the various techniques **CO 3**: Describes the isolation and identification of microorganisms from human samples **CO 4:** Find out the efficiency and MIC of antibiotics.
3	**GBMBC53P**	**CORE XII – LAB COURSE IN ENVIRONMENTAL AND AGRICULTURAL MICROBIOLOGY AND BIOSTATISTICS**	**Course Outcomes:** Upon completion of the course, students will be able to **CO 1**: Explain the procedure to isolate *Azotobacter, Cyanobacteria, Rhizobium* **CO 2**: Explores the bacterial examination of water **CO 3**: Determines the BOD and COD of water sample **CO 4**: Elucidate the microbes present in air **CO 5:** Illustrate the collection of data, sampling design and tabulation **CO 6:** Explore the mean, median, mode and standard deviation
4	**GBMBE5A**	**ELECTIVE I – BIOSTATISTICS**	**Course Outcomes:** On successful completion of this course, the students will be able to, **CO 1:** Discuss the functions & limitations on biostatistics. **CO 2:** Appreciate key concepts about the Data collection and presentation of data. **CO 3:** Measure the general tendency from a group of

			observations using central tendency. **CO 4:** Evaluate the variation among the observations using measures of dispersion. **CO 5:** Emphasize the basics of biostatistical inference using the science of Probability. **CO 6:** To apply the statistical analysis for their research.
5	**GBMBE5B**	**ELECTIVE I – COMPUTER APPLICATIONS IN BIOLOGY**	**Course Outcomes:** On successful completion of this course, the students will be able to, **CO 1:** Illustrate the key concepts on the generations & components of Computer. **CO 2:** Reveal about the Internet and its applications. **CO 3:** Emphasize the basic knowledge about the Programming in C. **CO 4:** Explain the basic knowledge about Web designing. **CO 5:** Discuss about the applications of computer in microbiology
6	**GBMBE5C**	**ELECTIVE II – BIOTECHNOLOGY**	**Course Outcomes:** Upon completion of the course, students will be able to: **CO 1**: Explain the applications of DNA modifying enzymes **CO 2**: Demonstrate the Identification of DNA, RNA and protein **CO 3**: Write down the application of genetic engineering in animals, plants and human **CO 4**: Elucidate the fundamental principles of nanotechnology and their application **CO 5**: Discuss knowledge on the biosafety regulations and ethical concepts in biotechnology
7	**GBMBE5D**	**ELECTIVE II – BIONANOTECHNOLOGY**	**Course Outcomes:** Upon completion of the course, students will be able to: **CO 1:** Explain the history and classification of nanostructures **CO 2:** Demonstrate functional principles of Bionanotechnology **CO 3:** Describe the synthesis of biomolecules based Nano structures **CO 4:** Elucidate the analytical techniques involved in characterization of nanoparticles. **CO 5:** Discuss the applications of nanoparticles as drugs in therapeutics and diagnosis.
8	**GBMBE54**	**SKILL BASED ELECTIVE V – BIOINFORMATICS**	**Course Outcomes:** Upon completion of the course, students will be able to, **CO 1:** Define bio informatics, its scope and application **CO 2:** Discuss the databases related to genome and proteome **CO 3:** Explain software to extract information from database and sequencing tools **CO 4:** describes the development of phylogenetic trees

Class: III BSc Microbiology (EVEN semester)

1	**GBMBC61**	**CORE XIII – FOOD MICROBIOLOGY**	**Course Outcomes:** Upon completion of the course, student will be able to **CO 1:** Comprehend the general principles of food Microbiology. **CO 2:** Covers the pathogenic organisms involved in the spoilage & normal flora of the food **CO 3:** Describes the economically important Bacteria, Yeasts and Molds. **CO 4:** Explains the fermentation technology behind the fermented food **CO 5:** Clarifies the examination of food and microbiological quality control.
2	**GBMBC62**	**CORE XIV – INDUSTRIAL MICROBIOLOGY**	**Course Outcomes:** Upon completion of the course, students will be able to **CO 1:** Improve the skills in screening of industrially important microbes **CO 2:** Design the type of fermenter needed for large scale production. **CO 3:** Describes the concepts of upstream and downstream processing of fermentation technology **CO 4:** Expertise on the production of economical important microbial products. **CO 5:** Discuss about the bioreactors and controlling parameters **CO 6:** Explains the role of microorganism in bioprocess technology
3	**GBMBC63P**	**CORE XV – LAB COURSE IN FOOD AND INDUSTRIAL MICROBIOLOGY**	**Course Outcomes:** Upon completion of the course, students will be able to, **CO 1:** Describe isolation of microorganism from spoiled food products **CO 2:** Check the quality of food product and adultery **CO 3:** to get knowledge on the industrially important techniques **CO 4**: Acquire knowledge about spoilage mechanisms in foods **CO 5**: Discuss the basis of food safety regulations **CO 6**: Conceive knowledge about role of microorganism in fermentation
4	**GBMBC64PW**	**CORE – XVI PROJECT**	Upon completion of the course, students will be able to **CO 1**: Implement the innovative ideas in research **CO 2**: Experience the research in the field of microbiology **CO 3**: Designing the project to overcome the environmental problems.
5	**GBMBE6A**	**ELECTIVE III – MARINE MICROBIOLOGY**	**Course Outcomes:** Upon completion of the course, students will be able to: **CO 1:** Explain on major forms of life in the marine environment, **CO 2:** Identify and classify the marine Microbes **CO 3:** Describe the preservation methods of marine microbes **CO4:** Elucidate the microbial resources and its role in different biogeochemical cycles. **CO 5:** Discuss the economic importance of Seaweeds and mangroves **CO 6:** Clarify the microbial interaction associated with fish

			(food) and its prevention.
6	**GBMBE6B**	**ELECTIVE III – PUBLIC HEALTH AND HYGIENE**	**Course Outcomes:** Upon completion of the course, students will be able to, **CO 1**: Attain knowledge in personal care health **CO 2**: Reveal the environmental condition in human health **CO 3**: Impact of public hygiene in environmental pollution **CO 4**: Sympathize the public action against healthy environment. **CO 5**: Acquainted with health service policies for public health **CO 6**: Interpret the issues related to environment affecting health and sustainable development
7	**GBMBC65P**	**SKILL BASED ELECTIVE VI – LAB COURSE IN AQUACULTURE**	**Course Outcomes:** **CO 1**: Provide a basic understanding of aquarium setting **CO 2**: Preparation of fish feeds **CO 3**: Maintenance of aquarium for breeding **CO 4**: Enlighten the entrepreneurial skills

Class: I MSc Microbiology (odd semester)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOMES
1	**IMMBC11**	**CORE I - GENERAL MICROBIOLOGY**	**Course Outcomes:** After successful completion of this course, student will be able to **CO1**: Write down the history and development of microbiology and discuss the classification of microorganisms **CO2**: Categorize the fungal and algal classification and its economic importance **CO3**: Distinguish the basic groups of microbes – Archaea, Bacteria and Viruses and Eukaryotic microbes **CO4**: Determine the detailed structure and function of prokaryotic cell organelles **CO5**: Develop the basic knowledge on virus appearance and how to cultivate, isolate and identify viruses
2	**IMMBC12**	**CORE II – BIOMOLECULES AND MICROBIAL PHYSIOLOGY**	**Course Outcomes:** After successful completion of the course, student will be able to **CO 1**: Recite the metabolism of biomolecules and explain the regulations of carbohydrates and lipids **CO 2**: Demonstrate the concepts on biochemical components & growth factors of microbial cell **CO 3**: Illustrate the nutritional requirements, environmental adaptations and transport mechanisms of microbes **CO 4**: Determine the overall biosynthetic and regulatory metabolism of microorganisms **CO 5**: Elaborate the metabolism, regulations and to classify the cell organelle
3	**IMMBC13**	**CORE III - MOLECULARBIOLOGY AND MICROBIAL GENETICS**	**Course Outcomes:** After successful completion of the course, student wil be able to **CO 1**:Define central dogma and explain the structure o genetic materials in the cell **CO 2**: Develop the molecular genetics and genome organizations in organisms **CO 3**: Classify the mutation and the DNA repai mechanism **CO 4**: Determine the life cycle of phage and its genetics **CO 5**: Theorize the concept of recombination and gen transfer techniques

4	**IMMBC14P**	**CORE IV – LAB COURSE IN GENERAL MICROBIOLOGY, BIOMOLECULES AND MICROBIAL PHYSIOLOGY, MOLECULAR BIOLOGY AND MICROBIAL GENETICS**	**Course Outcomes:** After successful completion of the course, student wil be able to **CO 1**: List out the laboratory safety measures and illustrate the preparation of buffers and molar solution **CO 2**: Apply the knowledge of Chromatography and Electrophoretic method in the field of molecular biology **CO 3**: Perform to test antibiotic sensitivity **CO 4**: Validate the biomolecules like protein, amino acid by advanced molecular techniques **CO 5**: Test to isolate and separate DNA and protein
5	**IMMBE1A**	**ELECTIVE I: a. ALGAL TECHNOLOGY**	**Course Outcomes:** After successful completion of the course, student wil be able to **CO 1**: Name the classification of algae and explain the structure and function of cell organelles **CO 2**: Identify the economic importance of algae **CO 3**: Distinguish the cultivation methods of algae **CO 4**: Justify the impact of algae on society **CO 5**: Discuss the concepts of algal processing
6	**IMMBE1B**	**ELECTIVE I: b. ENZYMOLOGY**	**Course Outcomes:** After successful completion of the course, students wil be able to **CO 1**: Define enzymes and explain the basic concept of specificity of enzymes, inhibition properties, type and characteristics **CO 2**: Classify the assorted techniques o immobilization and its applications **CO 3**: Establish on enzyme kinetics and mechanism o enzyme action **CO 4**: Determine the enzymes in drug designing and their future potential **CO 5**: Test various methods to isolate and purify enzymes

Class: I MSc Microbiology (EVEN semester)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOMES
1	IMMBC21	CORE V: FOOD ANDDAIRY MICROBIOLOGY	**Course Outcomes:** After successful completion of this course, student wil be able to **CO 1**: List out the major microbes involved in food and explains the factors essential for the growth o microorganisms **CO 2**: Illustrate discrete types of food preservatio techniques **CO 3**: Classify the principles of food spoilage microorganisms **CO 4**: Value the extra knowledge on food safety and quality **CO 5**: Tabulate the various kinds of microbes involved in fermented foods
2	IMMBC22	CORE VI - ENVIRONMENTAL AND AGRICULTURAL MICROBIOLOGY	**Course Outcomes:** After successful completion of this course, student wil be able to **CO 1:** Define Micro Flora and summarize the knowledge about marine habitats **CO 2**: Critically demonstrate on an Agro Ecosystem **CO3**: Classify biogeochemical cycles and influencing factors on environmental microbes **CO 4**: Judge the assessment of air and water quality **CO 5**: Discover how bio pesticides & herbicides are produced by using microbes
3	IMMBC23	CORE VII - RECOMBINANT DNA TECHNOLOGY	**Course Outcomes:** After successful completion of this course, student wil be able to **CO 1**: Discuss various types of DNA modifying enzymes and illustrate the host cells and vectors in gene cloning **CO 2**: Demonstrate the Applications of rDNA technology in medicine **CO 3**: Focus on analytical techniques employed in DNA sequencing **CO 4**: Validate the significance of Next generation sequencing **CO 5:** Construct the strategies of cloning, extraction and construction of genomic DNA and cDNA libraries

4	**IMMBC24P**	**CORE VIII - LAB COURSE IN ENVIRONMENTAL AGRICULTURAL MICROBIOLOGY AND FOOD MICROBIOLOGY**	**Course Outcomes:** After Successful completion of this course, student wil be able to CO 1: Identify the microorganisms from the wate quality by MPN technique and discuss about them CO 2: Classify various nitrogen fixing bacteria from various sources CO 3: Point out the various plant diseases and Mycorrhizae CO 4: Justify the microbiological analysis of food products and estimate BOD and COD CO 5: Discuss the process involved in the fermentative production and mushroom cultivation
5	**IMMBE2A**	**ELECTIVE II - a) GENOMICS AND PROTEOMICS**	**Course Outcomes:** After successful completion of this course, student wil be able to **CO 1**: Define Human genome project and explain th structure and organization of prokaryotic & eukaryotic genome **CO 2:** Discover about the pharmacogenomics and metabolomics **CO 3:** Investigate the expression of proteins by variou proteomics techniques **CO 4**: Recommend the principles and approaches o structural & functional genomics for growing translational research **CO 5**: Elaborately understand the principle of separation and identification of protein
6	**IMMBE2B**	**ELECTIVE II – b) NANOBIOTECHNOLOGY**	**Course Outcomes:** After successful completion of this course, student wil be able to **CO 1**: Define Nanobiotechnology and explain the biosynthesis and green synthesis of Nanomaterials **CO 2**: Develop the process of fabrication, properties and application of Nucleic acid based artificia Nanomaterials **CO 3**: Analyze the nanotechnology tools and technique in research **CO 4:** Assess the status of nanotechnology in India and its impacts **CO 5**: Discuss the factors involved in the manufacturing process of Nanomaterials

Class: II MSc Microbiology (ODD semester)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOMES
1	**HMMBC31**	**CORE IX - MEDICAL MICROBIOLOGY**	**Course Outcomes:** Upon completion of the course, students will be able to CO 1: Reveal the basic concept and maintenance o medical laboratory. CO 2: Grasp the different types of diseases, pathogenicity treatment and laboratory management. CO 3: Learn the bacterial pathogenicity and its retrieval. CO 4: Illustrate the concept of viral infection. CO 5: Elaborate fungal and protozoan infections. CO 6: Interpret the antibiotics and its applications.
2	**HMMBC32**	**CORE X – IMMUNOLOGY AND IMMUNODIAGNOSTICS**	**Course Outcomes:** Upon completion of the course, students will be able to CO 1: Describes about the immune cells and lymphoid organs. CO 2: Gain knowledge on tumor cells, transplantation immunology. CO 3: Reflect critically about the immunodeficiency disorders. CO 4: Obtain knowledge on autoimmunity and autoimmune diseases. CO 5: Recollect the advanced knowledge o immunodiagnostic methods. CO 6: Obtain knowledge on hybridoma technology.
3	**HMMBC33**	**CORE XI: BASICS OF RESEARCH METHODOLOGY**	**Course Outcomes:** Upon completion of the course, students will be able to CO 1: Interpret the relationships among living things and solve biological problems among them. CO 2: Research and inquiry. CO3: Existing software to extract information from larg database and use the information as computer modeling. CO 4: Ability to develop new algorithms and analysi methods. CO 5: Explains the gene expression. CO 6: Describes the analysis of human genome.

4	**HMMBC34P**	**CORE XII - LAB COURSE IN MEDICAL MICROBIOLOGY, IMMUNOLOGY AND IMMUNODIAGNOSTICS**	**Course Outcomes:** Upon completion of the subject, students will be able to CO 1: Learn to collect the blood sample from variou parts. CO 2: Get the thorough knowledge on separation o different types of blood cells. CO 3: Acquire knowledge on the antigen-antibod interaction. CO 4: Isolate antibody from blood serum. CO 5: Attain knowledge on the types of blood cells. CO 6: Perform various immunodiagnostic methods.
5	**HMMBE3A**	**ELECTIVE III - BIOETHICS, BIOSAFETY & IPR**	**Course Outcome:** Upon completion of the course, students will be able to CO1: Describes overall concepts of Bioethics. CO2: Promote ethical concerns regarding human cloning. CO3: Apply gene therapy for research. CO4: Defend from risky hazards. CO5: Implement biosafety for drug products. CO6: Explain in detail about IPR.
6	**HMMBE3B**	**ELECTIVE III: BIOINFORMATICS**	**Course Outcomes:** Upon completion of the course, students will be able to CO 1: Understands the general definition of Bioinformatic and Networks. CO 2: Identify the biological databases. CO 3: Familiar with gene and protein prediction tools. CO 4: Explains about the structure prediction tools. CO 5: Discuss about the molecular interaction. CO 6: Explains DNA sequencing software and proteomic tools.

Class: II MSc Microbiology (EVEN semester)

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOMES
1	**HMMBC41PW**	**CORE XIII - Project**	**Course outcome:** Upon completion of the course, students will be able to CO1: Describe the methodological information on the are of research. CO2: Apply microbiological concepts. CO3: Improve the abilities in interpretation for thei findings. CO4: Develop the skills in publications

CERTIFICATE COURSE

S.NO	COURSE CODE	COURSE NAME	COURSE OUTCOMES
1	**FCBF1**	**PAPER I – MICROBES IN FERTILIZER AND BIO MANURE APPLICATION**	**Course Outcomes:** Upon completion of the course, students will be able to **CO 1:** Discuss the significance of biofertilizer and cycles associated with the microorganisms **CO 2:** Comprehend the nature of biofertilizers **CO 3:** Know the importance and association of fungal biofertilizers **CO 4:** Demonstrate the perception of biomanures from different agro and poultry wastes **CO 5:** Elucidate the significance of vermin and microbial compost by biodegradation
2	**FCBF2P**	**PAPER (PRACTICAL) II – LAB COURSE IN BIOFERTILIZERS PRODUCTION**	**Course Outcomes:** n completion of the course, students will be able to **1:** Develop thorough knowledge on Microbiological laboratory practice **2:** Know how to prepare media and culturing of microorganisms **3:** Describe various culturing methods of growth promoting microorganisms **4:** Demonstrate the perception of biomanures fro different agro and poultry wastes **5:** Elucidate the significance of vermin and microbial compost by biodegradation **6:** Depict the laboratory and field application of biofertilizers and biomanures

3	**HCAQ1**	**PAPER I –AQUACULTURE**	**Course Outcomes:** **1**: Provide a basic understanding of aquarium setting **2**: Preparation of fish feeds **3**: Maintenance of aquarium for breeding **4**: Enlighten the entrepreneurial skills
4	**HCAQ2P**	**PAPER (PRACTICAL) II - LAB COURSE IN ORNAMENTAL FISH CULTURE**	**Course Outcomes:** **1**: Provide a basic understanding of aquarium setting **2**: Preparation of fish feeds **3**: Maintenance of aquarium for breeding **4**: Enlighten the entrepreneurial skills
5	**HCMC1**	**PAPER I – EDIBLE AND MEDICINAL MUSHROOM CULTIVATION**	**Course Outcomes:** Mushroom cultivation lab facets the hands-on training for students to **CO 1:** Describe the basic types of mushroom and its economic importance **CO 2:** Expertise in various mushroom cultivation techniques **CO 3:** Setup an own unit of mushroom cultivation firm **CO 4:** Intend the candidates to go for self–employment.
6	**HCMC2P**	**PAPER (Practical) II – LAB COURSE IN MUSHROOM CULTIVATION**	**Course Outcomes:** Mushroom cultivation lab facets the hands-on training for students to **CO 1:** Describe the basic types of mushroom and its economic importance **CO 2:** Expertise in various mushroom cultivation techniques **CO 3:** Setup an own unit of mushroom cultivation firm **CO 4:** Intend the candidates to go for self–employment.