# NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE,

# KALIYAKKAVILAI

# 2023 -2024

# PO CO

# Department of Tamil M.A

# 2023 – 2024

| | |
|---|---|
| **Programme Specific outcome** | ❖ Let us know the depth and antiquite of the Tamil language.<br>❖ To learn about the Grammatical area of the Tamil language<br>❖ To get the proper impetus to write and speak in the rich style. |
| **Course outcomes** | **First Semester** |
| **1st MA**<br>**1.IKKALA ILAKKIYAM** | ❖ A good knowledge of the literary history of this period<br>❖ Traditional poetry, modern poetry, short story, fiction in the literature of this period are the best works to get air literary immersion and social consciousness.<br>❖ To gain practice in analyzing and appreciating form, meaning, literary aesthetics etc. in poetry and fiction.<br>❖ A detailed, in-depth and sophisticated understanding of the trends and peculiarities of contemporary literature<br>❖ Analytical evaluation of prose literature |
| **1. ARA ILAKKIYAM** | ❖ A wide-ranging scholarship in the history of moral literature in Tamil<br>❖ Special training in the moral concepts of Tirukkural and Naladiyar<br>❖ Gaining deep knowledge of Ara literature of eleven sub-counts, approach Ara ideas with contemporary and social sensibility. |

| | |
|---|---|
| | ❖ To acquire special knowledge in form, ideas, poetic interests etc. of Ara literature |
| **2. THOLKAAPPIYAM EZHUTHATHIKARAM** | ❖ Learning the types of letters in the Tamil language and how to handle the language effectively.<br>❖ Learn other languages easily by understanding the basics of Tamil grammar.<br>❖ Understand grammar and develop modern grammar.<br>❖ You can develop your speaking skills by learning how to pronounce Tamil letters.<br>❖ Spelling errors can be avoided while writing prose. |
| **3. NATTAR VAZHAKKATTIYAL (ELECTIVE)** | ❖ Familiarity with the field of civil law.<br>❖ To acquire clear knowledge of oral literature and performing arts.<br>❖ To acquire the knowledge to conduct research in the field of civil litigation.<br>❖ Developing an understanding and appreciating soil-based cultural traditions.<br>❖ To acquire the power to perform chronology to collect data from the field of national law. |
| **4. AYALAKA TAMIL ILAKKIYAM** | ❖ Knowing the interpretation of Tamils in the Tolkudi stage and in the Diaspora stage in the global context.<br>❖ To know the history and development of Eelam Tamil literature and Malaya literature. To know the characteristics of these literatures and their literary relevance and social reflections. If you read the literature on genre models.<br>❖ Knowledge of Malaysian and Singaporean Tamil literature. Studying literature as a genre model. |

| | |
|---|---|
| | ❖ In-depth knowledge of migration and literature. An appreciation of the literature produced as a result of Eezham Tamil migration.<br>❖ Tamil literary Wahhabis who originated in foreign lands, wealth, literary interests, pain of migration, In-depth knowledge of the great literary works etc. that Tamils have understood in literature even in the midst of pain. |
| **Second Semester** | |
| **1. BHAKTHI ILAKKIYAM** | ❖ Acquiring excellence in the field of devotional literature in Tamil.<br>❖ Saiva Literature Realizing the beauty and merits of literature, the virtues and peculiarities of Yappu.<br>❖ Vaishnava Literature Realizing the beauty and merits of literature, the merits and peculiarities of Yappu.<br>❖ To know the developmental stages of later devotional literature. Also realizing the unique devotional literary contributions of Arunagiri Nadar, Thayumanavar and Ramalingar. |
| **2. KAAPPIYA ILAKKIYAM** | ❖ To know the relationship and contribution between religions and religions in Tamil.<br>❖ Acquiring knowledge in Kappiya literature such as Silapathikaram, Manimekalai, Chintamani, Kamparamayanam, Periyapuranam etc.<br>❖ To gain a clear view of the focus and direction of archival literature.<br>❖ Analytical knowledge of copy structure, layout, content, literary interests etc.<br>❖ In-depth knowledge of peculiarities and |

| | |
|---|---|
| | peculiarities in Tamil Kappiyams. |
| **3. CHOLLATHIKARAM** | ❖ Knowing the grammar and syntax of Tamil language.<br>❖ Learn other languages easily by knowing the structure of Tamil grammar.<br>❖ Practice developing a modern grammar that understands genealogy.<br>❖ Practicing recognizing the vahais of words in Tamil.<br>❖ By learning series grammar, we can write non-serial series. |
| **4. URAIYASIRIYARKAL** | ❖ Students will learn the importance of texts written for genetics, grammar and text skills.<br>❖ Text writers of type II, type VI grammar, text writers of Patial grammar texts, modern text writers of the students will know their contributions.<br>❖ Students will gain the ability to compare and contrast the idioms of different speakers.<br>❖ He will be able to distinguish between grammatical and literary texts.<br>❖ By knowing the language of religious literary texts, he will acquire the ability to write in a unique style without mixing other languages. |
| **5. PANPATTU MAANIDAVIYAL** | ❖ Students will learn about the field of anthropology.<br>❖ Students will know about the cultural change in Tamil Nadu.<br>❖ Learn more about the adoption of other religions.<br>❖ If we compare the social status, cultural status, biological status of the ancient Tamils with the |

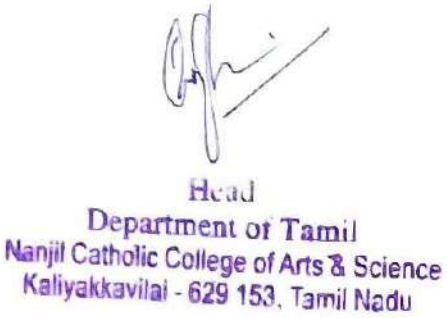
| | |
|---|---|
| | modern life.<br>❖ They will know the purpose of studying other fields in Tamil studies as well. |
| **6. SKILL ENHANCEMENT – THAGAVAL THODARPIYAL** | ❖ They will know the purpose of studying other fields in Tamil studies as well.<br>❖ Learns the nuances of information technology<br>❖ Learn the principles of communication through communication.<br>❖ Explores the peculiarities of radio and its broadcasts.<br>❖ Know the systems of satellite broadcasting. |
| **THIRD SEMESTER** | |
| **2nd MA**<br>**1.SITTILAKKIYAM** | ❖ To know the history of traditional literary works of Tamil. A historical understanding of the stages of development of particular micro literatures.<br>❖ Gaining special knowledge in Parani, Dhootu, Pallu, Kuravanchi.<br>❖ Proficiency in three and nine thousand literary genres of Kalambakam, Antadi, Pillaithamil and Sindhu. |
| **1. THOLKAPPIYAM PORULATHIKARAM ( FIRST 5 CHAPTER)** | ❖ Knowing the grammar tradition of Akam Puram.<br>❖ To know the limited life style of Palandamizhar.<br>❖ Knowing the sixth dimension makes home life essential for both.<br>❖ Knowing that a civilized society can be formed by cherishing the air tradition of living values.<br>❖ To identify the inevitable elements in the system of family in society. |
| **2. ARAICHI NERIMURAIKAL** | ❖ Knowledge of research ethics.<br>❖ He will acquire the ability to analyze literature. |

| | |
|---|---|
| | ❖ He will acquire the knowledge to prepare a research paper following research ethics.<br>❖ Knows Tamil studies in detail<br>❖ Describe the methods of data collection. |
| **3. PADAIPPUTHIRAN VILAMPARAKALAI (ELECTIVE)** | ❖ Know the need and objectives of advertisements.<br>❖ Know advertising strategies, advertising plans.<br>❖ Short story writing exercises.<br>❖ By practicing playwriting.<br>❖ By practicing writing novels and poems. |
| **4. ILAKKIYA THIRANAIVUM KOLGAIKALUM (ELECTIVE)** | ❖ Literary Criticism is about gaining clarity on the principles of literature.<br>❖ Criticism of Tamil literature through clarity to gain a better knowledge of historical changes.<br>❖ Tamil Literary Criticism with literary principles found in Tamil Grammars and critical elements found in texts through them Identifying the heritage of expertise.<br>❖ D.K.C., K.Na.Su, Si.Su Chellappa, K. Kailasapathi, K. Sivathampi, Raj Kowthaman, Thamizhavan, K. Pooranasanthiran, K. Panchankam earning and absorbing the contributions of such reviewers with technical differences.<br>❖ Using critical thinking skills, acquire the ability to critically analyze literature. |

| | |
|---|---|
| **5. SKILL ENHANCEMENT – NOOLAKAVIYAL** | ❖ Learning about the library.<br>❖ Understanding of library design methodology.<br>❖ He would have realized the benefits of reading books.<br>❖ Knowing how to classify texts.<br>❖ Awareness about job opportunities as a librarian. |
| **FOURTH SEMESTER** | |
| **1. SANGA ILAKKIYAM** | ❖ He knows the technique of Sangha literature.<br>❖ Know the values of life in Sangha literature.<br>❖ Know the poetic features of Sangha literature.<br>❖ By knowing the internal and external principles, he will be able to apply them in Sangha literature songs.<br>❖ To acquire the ability to appreciate traditional traits and apply them to modern life |
| **2. THOLKAAPPIYAM PORULATHIKARAM ( LAST 4 CHAPTER)** | ❖ Yappu will have the ability to compose traditional poems that understand the system.<br>❖ He knows new literary genres like Tolkapiyam, Dhol, Dhoal, etc.<br>❖ Aram and Puram know that home life is essential for both.<br>❖ Knows the need for authenticity for creativity.<br>❖ Learn about traditions for Tamils |
| **3. PROJECT WORKS** | ❖ Encouragement to select and study subjects such as literature, culture, anthropology, national jurisprudence etc.<br>❖ Select a number of texts for the research topic and define the research objective.<br>❖ Guides the appropriate application of learned |

| | |
|---|---|
| | ❖ texts according to spirit.<br>❖ 1. The master's thesis should contain pages.<br>❖ 2. An oral examination at the end of the fourth semester will be conducted by the moderator and external candidates. The thesis will be revised in the General Examination revision process. |
| **4. PROFESSIONAL COMPETENCY SKILL ENHANCEMENT (NET/SLET)** | ❖ Tamils will feel the historical significance and the pride of Tamil language. |





# NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE
## Kaliyakkavilai
## DEPARTMENT OF ENGLISH
## Learning Outcome
## Academic Year 2023-2024

## B. A. English

| | |
|---|---|
| **Program outcome** | • Acquire knowledge of various literary works.<br>• Explore the avenues of world Literatures.<br>• Think critically and apply theoretical approaches to literary texts.<br>• Equip them to undertake research projects. |
| **Program Specific Outcome** | ❖ Acquire knowledge of the important historical and political milestones of England, from the early times to the present.<br>❖ Develop an aptitude for critical analysis of literary works.<br>❖ Read a variety of texts critically and proficiently to demonstrate in writing or speech, the comprehension, analysis and interpretation of those texts.<br>❖ Demonstrate knowledge and comprehension of major texts and traditions of language& literature written in English as well as their social, cultural, theoretical and historical contexts.<br>❖ Speak clearly, effectively and appropriately in a public forum for a variety of audiences and purposes.<br>❖ Obtain professional skills in translation. |

## Courses outcome

| Courses | Outcomes |
|---|---|
| **I B A English I Semester** | |
| **English And Communication (SEC- I)** | • To provide the students with an ability to build and enrich their communication skills.<br>• To enable the learners to demonstrate effective communication skills - listening, speaking, reading and writing<br>• To help them think and write imaginatively and critically<br>• To equip students to build self- confidence with a focus on self- presentation<br>• To facilitate the learners to learn personal and professional development |
| **Introduction to** | • To introduce the different forms of literature |

| | |
|---|---|
| **Literature** | • To provide learners with the background knowledge of literature<br>• To enable learners to understand the different genres of writing<br>• To examine the various themes and methodologies present in literature<br>• To create the ability of critically examining a text |
| **Indian Writing in English** | • To familiarize the students with the emergence and growth of Indian Writing in English in the context of colonial experience.<br>• To help in understanding issues concerning Indian Writing in English such as the representation of culture, identity, history, constructions of nation, (Post) national and gender politics, cross-cultural transformations.<br>• To create literary sensibility and critical response to the literary texts written in English<br>• To closely examine the various themes and methodologies existing in Indian Writing in English.<br>• To help learners apply the ideas encapsulated in Indian Aesthetics to literary texts |
| **Social History of England-I (ELECTIVE)** | • To acquaint the students with background study of social conditions in England<br>• To introduce students to some of the major historical development of England<br>• To facilitate the students to focus on chronological narrative of events as on major issues trends, events and crisis of the period<br>• To make the students aware of the relation between socio political and socio religious events and literary works<br>• To expose the students' various trends and movements of England. |
| **Foundation Course** | • To teach the main elements of Grammar<br>• To enhance competence in the English Language<br>• To create academic and non-academic reports, write ups, etc.,<br>• To acquire the necessary linguistics skills to use the language effectively in conversation and writing.<br>• To convey ideas accurately and clearly. |
| **I B A English** | |

| II Semester | |
|---|---|
| **General English II** | • To enhance the communicative skills of students.<br>• To enrich the knowledge of students in grammar usage.<br>• To simulate real life situations in the classroom to practice real English dialogues and speeches to gain English language fluency.<br>• To build up the learner's confidence in oral and interpersonal communication |
| **British Literature-I** | • To introduce British Identity, Periods and other related forms<br>• To increase the ability for students to intellectually assess the works of British writers<br>• To enable leaners to understand that British literature is at the foundation of English-speaking peoples' culture.<br>• To closely examine the various themes and methodologies present in British literature<br>• To create an aptitude of critical probing through the text |
| **American Literature** | • To identify the growth and development of American literature.<br>• To critically examine how various genres developed and progressed.<br>• Learn about prominent writers and famous work sin American literature.<br>• To closely examine the various themes and methodologies present in British literature.<br>• To create an aptitude of critical probing through the text |
| **Social History of England-II (ELECTIVE)** | • Define the social history of England in a political perspective.<br>• Interpret literary and cultural texts of historical, geographical, and cultural contexts. Explain socio-political history with literary and cultural texts<br>• Identify main trends in the social history of England and their influence on literature<br>• Analyse the critical ideas, values and themes that appear in literary and cultural texts of various genres<br>• To critically analyse the influence of history and cultural diversity on literature and language. |
| **Public Speaking Skills (SEC-III)** | • To help students understand the goals and benefits of public speaking<br>• To help them recognize communication apprehension and guide them on how to reduce it<br>• To familiarize them on how public speaking can be used to advocate or create change<br>• To enable learner's recognize the social and historical contexts of speech, oratory, and rhetoric<br>• To help them think and speak imaginatively and critically |
| **Digital Literacy and Concepts (SEC - IV)** | • To help the students to be introduced to digital literacy |

| | |
|---|---|
| | • To elaborate on digital values, language and culture<br>• To explore digital literacy in terms of information, identity and labelling<br>• To discuss teacher's engagement in digital literacy<br>• To analyse socio-economic factors in digital literacy |
| **II B A English III Semester** | |
| **General English I** | • Develop interest in and appreciation of Literature<br>• develop confidential communication skill.<br>• Learned different styles of writings, like prose, poetry and fiction.<br>• Practical usage of English Grammar. |
| **British Prose** | • Understand the various kinds of thoughts and ideologies of each periods.<br>• Enhance the power of comprehension and literary competence. |
| **Indian English Literature I** | • Analyse the artistic and rhetorical devices used by the writers.<br>• Enhance the overall literary and linguistic competence. |
| **American Literature I** | • Understand values and themes that impact culture and society.<br>• Write poems and short stories and also enact scenes from the plays. |
| **African Literature** | • Understand the uniqueness of African Literature in terms of form and content.<br>• Assess and compare the genres of nonfiction, fiction, drama and poetry of African Literature |
| **Consumer Awareness** | • This paper gave a clear idea about consumers and consumerism.<br>• It gives knowledge about consumer laws, which are useful for the well being of individuals. |
| **II B. A English IV Semester** | |
| **General English II** | • To enable the learner to communicate effectively and appropriately in real life situation<br>• To develop Vocabulary and Pronunciation.<br>• Students will be able to enhance his or her familiarity and fluency with the language considerably. |
| **British Fiction** | • Interpret the different meanings and messages in the novels.<br>• Asses the literary value of each novel. |
| **Indian English Literature II** | • Understand the broad view of culture as seen from outside the culture.<br>• Critically engage with Indian literary texts written in English in terms of colonialism, post colonialism, regionalism and nationalism. |
| **American Literature II** | • Acquainted with the historical and literary elements in American literature.<br>• Attain knowledge of various literary styles in relation to their cultural context and literary forms. |
| **Language and Linguistics** | • Understand a wide array of linguistic diversity, systematic patterns and cross linguistic universals that constrain the diversity.<br>• Asses the efficiency of the tools and knowledge that give a new perspective on language and linguistic. |

| | |
|---|---|
| **Content Writing** | • Improve the ability to read the literary texts critically and analyse them.<br>• Gain an understanding about various modes and methods of literary interpretation.<br>• Understanding the development of new forms of writing and literary interpretation. |
| **Human Rights** | • Understand the historical growth of the idea of human rights.<br>• Demonstrate an awareness of the international context of human rights. |
| **III B. A English V Semester** | |
| **Genre Studies** | • Understand the importance of context in the creation of a text<br>• Understand the socio-cultural boundaries of the literary texts<br>• Identify and apply the stereotypic patterns of different literary genres |
| **Shakespeare** | • It made students to understand the fine technical details of Elizabethan Drama.<br>• This course dealt with various plays of Shakespeare, which gave the overall idea of Elizabethan Era. |
| **Research Methodology** | • Make a systematic and theoretical approach during the process of research.<br>• Collect and analyze data through surveys, interviews and observation.<br>• Enhance critical thinking. |
| **Translation Theory and Practice** | • Understand the fields of translation principles, methods, procedures and techniques of translating.<br>• Identify the nuances of the SL texts and enrich the adequate skills to address the issues of transition encountered by translators worldwide.<br>• Produce translated texts to promote cultural exchange and connectedness. |
| **Environment and Literature** | • Understand the significance and implications of environmental writing with varied perspectives of both literary and scientific criticism.<br>• Develop awareness of how literature can articulate humanity's relationship with the environment. |
| **Indian Literature in Translation** | • The subject helped the students to know about the different works and authors of different regional languages.<br>• The subject helped the students to know about the art of translating works.<br>• Understand the broad view of culture as seen from outside the culture.<br>• Critically engage with Indian literary texts written in English in terms of colonialism, post colonialism, regionalism and nationalism. |
| **Personality Development** | • Take responsibility and accept criticisms.<br>• Understand effective decision making skills.<br>• Gain complete control over emotions.<br>• Develop interpersonal relationships. |
| **III B. A English VI Semester** | |
| **Literary Criticism** | • Develops the critical sensibilities of the students.<br>• It helps the students to apply concepts from literary theory and criticism in the analysis and interpretation of text |

| | |
|---|---|
| | • This paper helps the students to write critical responses in literary works |
| **Canadian Literature** | • It helps the students to know the culture , tradition and manners of Canada<br>• This paper highlights the lifestyle of the people in Canada and their landscape. |
| **Australian Literature** | • The students understood the role of African literature in establishing the identity of Africans<br>• It helped the students to know about new writers, their works and about their discrimination which Africans faced in the hands of colonizers. |
| **Fantasy Literature** | • Contextualize and understand the author's themes and ideas.<br>• Appreciate the artistry of the works and analyze them critically.<br>• Improve the writing skills of the students. |
| **Global Literature** | • Students get knowledge about new areas of literature.<br>• Able to understand the cultural and moral precepts of various nations. Various genres demonstrate an overall view of nations. |
| **Project** | • Meaningfully retain information from reading academic articles.<br>• Analyze and evaluate retained information in meaningful ways.<br>• Plan and write advanced papers. |

Head
Department of English
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153

DEPARTMENT OF ENGLISH * NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE * Kaliyakkavilai 629 153

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE * KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

# NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE
## Kaliyakkavilai
## DEPARTMENT OF ENGLISH
## Learning Outcome
## Academic Year 2023-2024

## M.A. English

| | |
|---|---|
| **Program Outcome** | ❖ Understand the significance of literary works in their cultural and ideological contexts.<br>❖ Develop comprehensive reading, writing and research skills.<br>❖ Analyze how writers have reacted to the social challenges of their contemporary period.<br>❖ Developing critical thinking and communicative skills |
| **Program Specific Outcome** | ➢ Develop proficiency in critical thought and creative writing.<br>➢ Understand the historicity and textuality of word Anglophone literatures.<br>➢ Demonstrate knowledge of the major texts and traditions of literature written in English in their social, cultural & historical context.<br>➢ Prepare and deliver effective oral presentations and arguments acceptable within the English profession.<br>➢ Write fiction or poetry of publishable quality.<br>➢ Write papers that construct logical and informed arguments.<br>➢ Analyze the functions of texts and their relation with historical, social & political contexts.<br>➢ Analyze texts to achieve particular literary, rhetorical and aesthetic effects. |

## Courses outcome

| **I M A English<br>I Semester** | |
|---|---|
| **Poetry** | • To introduce the learners to the literary tradition of the English Poetry starting from Medieval to Modern Period.<br>• To focus on the evolution of Poetic forms such as Sonnet, Ballad, Lyric, Satire and Epic.<br>• To enable the students to have a comprehensive view of History of English literature.<br>• To differentiate the various stages of English through the representative poets.<br>• To critically examine the works of the writers of the period |
| **Drama** | • To acquaint the students with the origin of drama in England.<br>• To trace the different stages of British Drama and its evolution in the context of theatre. |

| | |
|---|---|
| | • To facilitate the learners to identify Socio-cultural scenario through the study of representative texts.<br>• To enable the students to identify different forms of drama.<br>• To encourage the learners to examine the themes presented in English Drama and to develop the ability to critically Analyze the texts. |
| **Fiction** | • To familiarize the students with the origin and development of the British fiction up to the Modern.<br>• To introduce the students to major writers of British fiction.<br>• To enable the students to comprehend the social background based on the prescribed novels.<br>• To facilitate the learners to identify and differentiate various forms of novels.<br>• To examine the themes presented in British fiction and to develop the ability to critically analyze the novels prescribed. |
| **Science Fiction, Fantasy & Detective literature** | • To familiarize students with different forms ofScience Fiction, Fantasy and Detective Fiction.<br>• To enable them to identify the basic Structure and themes of Science Fiction.<br>• To facilitate the learners to appreciate the fundamental features in fantasy fiction.<br>• To enhance students' knowledge to identify the basic Structure and themes of Science and detective fiction.<br>• To involve the students to a close reading important representative texts. |
| **Approaches and Methods in Teaching English** | • To enhance the learning and teaching skills of English.<br>• To familiarize students about the basic concepts andt heories related to English language teaching.<br>• To focus on the problems in language teaching.<br>• Explore different ways of testing.<br>• Practice writing on plans and teaching. |
| **I M A English II Semester** | |
| **American Literature** | • To explore the origin and growth of American Literature.<br>• To introduce the students to the basic traits of American Literature and its cultural history.<br>• To introduce the students to eminent writers of America and their works.<br>• To introduce the concepts and emerging trends and movements in American literature.<br>• To evaluate and analyze the works of the works prescribed. |
| **Indian Writing in English** | • Enabling the students to understand the evolution ofIndian Writing in English.<br>• To enable the learners to get exposed to the historical movements of the Indian subcontinent.<br>• Comprehending different genres through the presentation of different texts.<br>• To inculcate in the students the cultural significance of Indian |

| | |
|---|---|
| | English literature.<br>• To comprehend Indian writing in English with its dual focus on the influence of classical Indian tradition and the impact Of the West. |
| **Employability Skills** | • To provide the students with an ability to build and enrich their communication skills.<br>• To outline the importance of Employability Skills for the current job market and future of work.<br>• To facilitate the learners to learn personal and professional development.<br>• To highlight the importance of Self-Awareness and Behavioral Skills.<br>• To help them think and speak imaginatively and critically |
| **Literature & Film** | • Finding the popular interest in films with technical ands ocio-cultural dimensions of film appreciation.<br>• Understanding the bond between the filmsand literature.<br>• Analyzing the literary texts in comparison with the films.<br>• Critical appreciation of films in the background of literary theories.<br>• Tracing the differentiation in films from different parts of the world. |
| **Shakespeare Studies** | • To examine, understand and enjoy Shakespeare's plays and Criticism of Theatre.<br>• Analyzing the context of Elizabethan England from the evolving contemporary perspective down the ages.<br>• Undertake textual analysis of Shakespeare's Plays and Sonnets.<br>• Recognize Shakespearean critics and their criticism of his works. |
| **Life Writing** | • To introduce life writing as an important genre in literary studies.<br>• To make students realize the literary significance of life writings.<br>• To make students understand various functions of life writing.<br>• To familiarize students with life writings of success stories to conflict zone testimonies and literary works.<br>• To facilitate students to explore the history of selfhood itself, particularly as it has tracked the rise of individualism and individuality |
| **II M. A English III Semester** | |
| | |
| **British Fiction** | • .to identify distinct literary characteristics of modern narratives.<br>• To analyse the concepts of modern and post modern literature |
| **Australian Literature** | • To trace the key issues in Australian Literature<br>• To understand Australia's varied socio cultural conditions |
| **Research Methodology** | • To know the definition and process of research.<br>• To identify research problem and proceed with it. |

| | |
|---|---|
| **Aspects of English Language I** | • To articulate the phonological sound system.<br>• Appraise how various linguistic phenomena have developed and changed in modern English. |
| **Literary Theory II** | • Explore the text with a specific epistemological and contextual learning.<br>• Critically analyze the significance of race, class and gender from a theoretical perspective. |
| **Green Literature** | • Understand the importance of nature and the indomitable part of nature in life.<br>• Appreciate the ethical, cross cultural and historical context of environmental issues. |
| **II M. A English IVSemester** | |
| **Gender Studies** | • Demonstrate the ability to conduct an interdisciplinary analysis of gender studies.<br>• Understand feminism in its diverse cultural contexts. |
| **Asia Pacific Literature** | • Understand the various narrative techniques unique to the region.<br>• Critically analyze representative literary texts from the regions as cultural discourse. |
| **Aspects of English Language II** | • Distinguish the concepts of word meaning and sentence meaning; sense and reference.<br>• Understand and analyze distinguishing features of written and spoken language in the text. |
| **Content Writing** | • Comprend the knowledge about digital skills and media.<br>• Analyze and present a topic of study in a field specific language. |
| **Dissertation** | • To gain an understanding of the existing research and debates relevant to a particular topic or area of study.<br>• To present knowledge in the form of a written report.<br>• To conduct literature reviews and build knowledge in literary field. |

Head
Department of English
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153

# NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE
## Kaliyakkavilai
## DEPARTMENT OF ENGLISH
## Learning Outcome
## Academic Year 2023-2024

## M. Phil English

| | |
|---|---|
| **Program outcome** | • Developing research skills and professionalism |
| **Program specific outcome** | ➢ Prepare and deliver effective oral presentations and arguments acceptable within the English profession.<br>➢ Write papers that construct logical and informed arguments.<br>➢ Analyze the functions of texts and their relation with historical, social & political contexts.<br>➢ Analyze texts to achieve particular literary, rhetorical and aesthetic effects. |

## Courses outcome

| | |
|---|---|
| **M. Phil English I Semester** | |
| **Research And Teaching Methodology** | • Demonstrate the ability to indicate methods proper to research aims and objectives<br>• Spell the description and the process of research.<br>• Develop innovative critical thinking skills. |
| **Continental Literature** | • Identify the key concepts of Contemporary Literature<br>• Infer the common the misdealt by the Contemporary Literature<br>• Analyse the origin of post-colonial theories. |
| **Critical Theory** | • Familiarise with their cent trends in literary studies.<br>• Associate the text with a specific epistemological and contextual mode of learning.<br>• Recognise the contemporary and the historical schools of the literary world. |
| **M. Phil English II Semester** | |
| **Dissertation and Viva Voce** | • Provide a clear outline of the research problem.<br>• Write a well structured, concise dissertation of appropriate length.<br>• Select references carefully, and presenting them in a consistent and appropriate form.<br>• Draw convincing conclusions based on the evidence presented. |

DEPARTMENT OF ENGLISH
Kaliyakkavilai
629 153
NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE

Head
Department of English
Nanjil Catholic College of Arts & Science
Kaliyakkavilai 629 153, Tamil Nadu

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153

# NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE

## KALIAKKAVILAI

## PROGRAM OUTCOMES & COURSE OUTCOMES

| Department of Mathematics (2023-2024) | |
|---|---|
| **B.Sc Mathematics** | |
| **Program Outcome** | • gain knowledge in foundational areas of mathematics<br>• communicate mathematics accurately, precisely and effectively<br>• develop mathematical thinking<br>• apply mathematical knowledge<br>• solve mathematical problems using technology<br>• Understand the pedagogical knowledge specific to mathematics teaching and learning. |
| **Program Specific outcome** | ♦ Think in a critical manner.<br>♦ Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.<br>♦ Formulate and develop mathematical arguments in a logical manner.<br>♦ Acquire good knowledge and understanding in advanced areas of mathematics and statistics, chosen by the student from the given courses.<br>♦ Understand, formulate and use quantitative models arising in social science, business and other contexts. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI
629 153
K.K. DISTRICT
TAMILNADU
INDIA

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu

# Course outcome

| Courses | Outcomes |
|---|---|
| **I B.Sc Mathematics - I SEMESTER** | |
| PART – 1 Tamil<br><br>(Poetry, Grammar, Prose Literature, Short Stories & Literary History) | • Knowing the literary creators and works of the time and creating new works.<br>• Understanding the basics of language.<br>• Knowing the ancient cultural customs of the classical language.<br>• Assuming solutions to social problems and issues. |
| Communicative English I | • To enhance the communicative skills of students.<br>• To enrich the knowledge of students in grammar usage.<br>• To simulate real life situations in the classroom to practice real English dialogues and speeches to gain English language fluency. |
| Algebra& Trigonometry (Core M1) | • Findthe nthderivative,formequationsinvolvingderivativesa ndapplyLeibnitzformula<br>• Findthepartialderivativeandtotalderivativecoeffici ent<br>• Use the Lagrange"smethod of undetermined multipliers<br>• Findtheevolutesandinvolutesandtofindtheradiusofcurvatur eusingpolarco-ordinates |
| Differential Calculus (Core M2) | • Find and relate the concepts of moments, skewness and kurtosis and to demonstrate the method of least squares and to classify parabolic, exponential and logarithmic curves.<br>• Develop the statistical techniques used in the theory of attributes and to analyze consistency of data and criteria independence and to interpret Yule's coefficient of association. |
| Mathematics for Competitive Examination-I (Skill Enhancement Course) | • Tolearnthetechniquesforsolvingaptitudeproblemsandtoenablethe students prepare themselves for various competitiveexaminations |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai 629 153.

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153. Tamil Nadu

| | |
|---|---|
| Bridge Mathematics (Foundation Course) | • Tobridgethegap andfacilitate transitionfrom highersecondary totertiaryeducation<br>• ToinstilconfidenceamongstakeholdersandinculcateinterestforMathematics |
| | |
| **II SEMESTER** | |
| PART – 1 Tamil (Poetry, Grammar, Prose Literature, Life History, Literary History) | • Announcement of devotional norms through religious literature.<br>• Practice writing letters expressing the language structure.<br>• Expressing moral thoughts through the texts of justice.<br>• Teaching and directing the biographiesof the saints. |
| Communicative English II | • Helps to improve practical usage of English Grammar.<br>• To help students overcome their fear and to speak in English in front of their peers and teachers.<br>• To build students self-confidence through various classroom activities |
| Analytical Geometry (Two &Three dimensions) Core M3 | • Solve the differentialequations which are all solvable for x, y, p and Clairaut's form.Also, to illustrate the method of solving the differential equations of the form f1 (D)x+g1(D)y=h1t, f2(D),x+ g2(D)y = h2(t).<br>• Find pole, polar for conics, diameters, conjugate diameters for ellipse and hyperbola<br>• The equations of spheres and circles of intersection can be interpreted and to illustrate and analyze the tangency of sphere.<br>• Find and classify the equation of lines in different forms and calculate the image of the point, image of a line and to distinguish lines and planes.The angle between the line and plane can be determined |
| Integral Calculus (Core M4) | • Determinetheintegralsofalgebraic,trigonometricandlogarithmic functionsandtofindthereduction formulae<br>• Evaluate double and triple integrals and problems using change of order of integration<br>• Solvemultipleintegralsandtofindtheareasofcurvedsurfacesandvolumes ofsolidsofrevolution |
| Mathematics for Competitive Examination-I (Skill Enhancement Course) | • To learn the techniques for solving aptitude problems. Also to motivatethestudentsforattending variouscompetitiveexaminations. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153. Tamil Nadu

| | |
|---|---|
| LaTeX (Skill Enhancement Course) | • Tointroducecodinganddecodingconcepts.Alsotodevelopthestudentsi n the field of codingtheory |
| Allied ChemistrywithPractical | • |
| Allied Paper-II- Vector Calculus and Fourier Series | • Analyze what is meant by vector differentiationand how to apply vector differentiation and itsproperties<br>• Determine the functions whether the functionsareoddoreven.Bymakinguseoftheseconceptshalfrangeseriesc an be foundout. |
| **II B.Sc mathematics – III SEMESTER** | |
| PART – I Tamil (Poetry, Grammar, Prose Literature, Novel, Literary History) | • To know the life history of the ancient Tamils through epics.<br>• Promoting the grammatical ability of the consecration team by teaching them the grammer.<br>• Instruction to live in an honest way. |
| Part II General English | • To develop Vocabulary and Pronunciation.<br>• To understand various styles of writings.<br>• To enhance his or her familiarity and fluency with the language considerably. |
| Sequences And Series | • Analyse the real number system and also to classify rational and irrational numbers.To find the upper bounds,least upper bounds and maximum elementand to elaborate triangleinequality and Cauchy-Schwartz Inequality.<br>• Demonstrate the behavior of monotonic sequences and to apply Cauchy's first limit theorem,Make use of Cauchy's Second limit theorem and Cesaro's Theorem. Contruct subsequence and to explain Cauchy's general principle of convergence.<br>• Categorize the sequences as bounded sequences, monotonic sequences, convergent sequences and divergent sequences. Also to find the algebra of limits |
| Skill Based Core-Paper IVector Calculus | • Classify the vector point function and scalar point function.Determine the derivative of a vector and derivative of product of scalar and vector function.<br>• Interpret the integration of point function and to illustrate line integral. To solve surface integral.<br>• Analyze and solve the volume integral. Also to illustrate and make use of Guass Divergence Theorem to solve problems. |
| Non-MajorElectivePaperI Mathematics For Competitive Examinations -I | • Interpretsimplificationandfindaverages<br>• Assesspartnershipandsolvepercentage Problems<br>• Solveproblemsonnumbers |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE * KALIYAKKAVILAI K.K. DISTRICT 629 153 TAMILNADU INDIA

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu

| | |
|---|---|
| Non-MajorElectivePaperI Fundamentals Of Statistics I | • Analysetheclassificationofdatas.Alsoto constructbardiagramandPiechart.<br>• Interpret correlation and to solve rank correlationproblems. |
| **SEMESTER - IV** | |
| PART – I Tamil (Poetry, Grammar, Prose Literature, Drama, Literary History) | • To know the culture of the ancient Tamils.<br>• Teaching subject grammer for biology<br>• Motivation to create plays centered on historical backgrounds. |
| Part II General English | • To develop interest in and appreciation of Literature.<br>• To develop confidential communication skill.<br>• To learn different styles of writings, like prose, poetry and fiction.<br>• To understand practical usage of English Grammar. |
| AbstractAlgebra | • Explainthedefinitionsofgroupsanditsexamples.Alsotodeterminetheorderofan element.IllustrateaboutSubgroups<br>• ElaborateaboutNormalSubgroupsandgroup homomorphism.IllustrateIsomorphism,Automorphism.Alsotoapply Cayley'stheoremwhereverrequired.Utilize the concept of homomorphism andisomorphism on rings .Also to find kernel ofhomomorphismand to makeuse of fundamental theorem. |
| Skill Based Core- Paper I Trigonometry, Laplace Transforms And Fourier Series | • SummarizeaboutTrigonometry andtoillustrateabouttheexpansionofsinnx, cosnx,$Sin^n x$,$Cos^n x$<br>• Solvedifferentialequationswithconstantcoefficientsbymaking use of Laplace Transforms.<br>• Solveproblemsbasedon Fourierseries. Identifytheoddand evenfunctionsandtodeducehalf rangeseries. |
| nme | • |
| **III B.Sc mathematics – V SEMESTER** | |
| LinearAlgebra | • Determine the span of a set and to checkwhether the given setis Linearly dependentornot.Alsoto findbasis anddimensions.<br>• DetermineEigenValuesandEigenVectors.Identify bilinear forms and quadraticforms.Also To deduce Diagonal form fromQuadraticform.<br>• Explainthedefinitionsandgeneralproperties of vector spaces. Also to explainsubspace.Theyknowwheretoapply fundamentaltheoremofhomomorphism. |
| RealAnalysis | • Explain about Metric spaces and to constructanopenball.Alsotointerpretinterior<br>• Summarize. continuity. Illustrate about uniformcontinuity. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI
K.K. DISTRICT
TAMILNADU
INDIA

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153. Tamil Nadu

| | |
|---|---|
| | • Illustrate about compactness and to find theconnected subsets of R.Illustrateand makeuse of HeineBorel Theorem .To determinetherelationshipbetweencompactnessandcontinuity. |
| Statics | • Explaintheforcesactingatapointandtoapplytheparallelogramlawoffor ces,Trianglelawofforcesand Lami'stheorem.<br>• Summarize equilibrium of three forces actingonarigidbodyandtoillustratethreecoplanarforcestheoremandto makeuseof theabovetheoremtosolveproblems<br>• Interprettheequilibriumofstrings.Todeducetheequation ofcatenaryand itsgeometrical properties. |
| Operations Research I | • SolveLinearProgrammingProblembymakinguseofGraphicalmethod, Simplexmethod.<br>• Interprettheconceptofduality.<br>• Classifyprimalanddualproblems.Utilizingthe concept of duality,solve problems ondualsimplexmethod.<br>• Determine the solution forAssignmentproblems.<br>• Solvesequencingproblems. |
| Major Elective –I Programming in C | • Summarizeaboutcharacterset.Classifythekeyword And identifiers. Identify the constants,variablesand datatypes.<br>• Compileprogramsbyutilizingdecisionmakingandbranchingstatements . Alsoto apply Decision making and loopingstatementswhiledevelopa program.<br>• Illustrate user defined functions and illustratethedefinitions of functions and return valuesand theirtypes. Alsotocategorizefunctioncall,function declaration. |
| **SEMESTER - VI** | |
| Complex Analysis | • Explain analytic functionsand determine thefunctionsofacomplexvariablesandtoUtilizeCauchyReimann equations<br>• Elaborate Bilinear Transformationsandclassifythe elementary transformations.<br>• Alsotofindfixedpoints.Illustratecomplexintegrationsandtomake Use ofCauchy'sIntegralFormula |
| Graph Theory | • Construct graphandtoexplainitsdefinition. Determine degrees. Also to performoperationsongraph<br>• Classifydegreesequenceandgraphicsequence.Illustrateconne ctedness,compactnessandconnectivity.<br>• Construct Eulerian Graphs and Hamiltoniangraphs.Elaboratethecharacterizations ofTreesandtofindcentreof atree. |
| Number Theory | • Construct graphandtoexplainitsdefinition. Determine degrees. Also to performoperationsongraph<br>• Classifydegreesequenceandgraphicsequence.Illustrateconnectedness ,Compactness and connectivity |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE * KALIYAKKAVILAI K.K. DISTRICT 629 153 TAMILNADU INDIA

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153 Tamil Nadu.

| | |
|---|---|
| | • Construct Eulerian Graphs and Hamiltoniangraphs.Elaboratethecharacterizations ofTreesandtofindcentreof atree. |
| Dynamics | • Explain Peano's theorem and to utilizemathematical induction.Also to make use ofBinomialtheorem<br>• Illustrate Division Algorithm. Determine GCD. To Deduce the Diaphantine equation ax+by=c<br>• Summarize the basic properties of congruence's and to apply Chinese Remainder Theorem |
| Numerical Methods | • Illustrateprojectilesandto findtheequationofpath,rangeandmaximumheightandtimeof flight.<br>• Elaborate about the collision of elasticbodies.Interpretlawofimpact and classifydirectAndobliqueimpact.<br>• Obtain solution for numerical algebraic and Transcendental equations by making use of various methods.<br>• Find finite difference or first and higher order differences.<br>• Toclassifyforwardandbackwarddifferences.<br>• Toapply interpolation formulaic Newton'sForwardandbackward,GuassForwardandbackward formula. |
| Fuzzy Mathematics | • ExplainCrispsetsandfuzzysetandillustratetheCharacteristicsandsignificanceofParadigmShift.<br>• Elaboratethe Additionalpropertiesofαcutsandthe extension principlefor fuzzysets.<br>• DeterminefuzzynumbersandLinguisticvariables.Apply arithmetic operations on intervalsandonfuzzynumbers.<br>• ConstructlatticeoffuzzyNumbers. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153. Tamil Nadu.

| Department of Mathematics (2022-2023) | |
|---|---|
| **M.Sc Mathematics** | |
| Program Outcome | • Inculcate critical thinking to carry out scientific investigation objectively without being biased with preconceived notions.<br>• Equip the student with skills to analyze problems, formulate an hypothesis, evaluate and validate results, and draw reasonable conclusions thereof.<br>• Prepare students for pursuing research or careers in industry in mathematical sciences and allied fields.<br>• Imbibe effective scientific and/or technical communication in both oral and writing.<br>• Continue to acquire relevant knowledge and skills appropriate to professional activities and demonstrate highest standards of ethical issues in mathematical sciences.<br>• Create awareness to become an enlightened citizen with commitment to deliver one's responsibilities within the scope of bestowed rights and privileges. |
| Program Specific outcome | • Understanding of the fundamental axioms in mathematics and capability of developing ideas based on them.<br>• Inculcate mathematical reasoning.<br>• Prepare and motivate students for research studies inmathematics and related fields.<br>• Provide knowledge of a wide rangeof mathematical techniques and application of mathematical methods/toolsin other scientific and engineering domains.<br>• Provide advanced knowledge on topics in pure mathematics, empowering the students to pursue higher degrees at reputed academic institutions.<br>• Strong foundation on algebraic topology and representation theory which have strong links and application in theoretical physics, in particular string theory.<br>• Good understanding of number theory which can be used in modern online cryptographic technologies.<br>• Nurture problem solving skills, thinking, creativity |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai 629 153.

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153. Tamil Nadu.

| | |
|---|---|
| | through assignments, project work.<br>• Assist students in preparing (personal guidance, books) for competitive exams e.g. NET, GATE, etc<br>• Create a hypothesis and appreciate how it relates to broader theories.<br>• Evaluate hypotheses, theories, methods and evidence within their proper contexts.<br>• Solve complex problems by critical understanding, analysis and synthesis.<br>• Demonstrate engagement with current research and developments in the subject.<br>• Critically interpret data, write reports and apply the basics of rules of evidence.<br>• Select, interpret and critically evaluate information from a range of sources that include books, scientific reports, journals, case studies and the internet.<br>• Develop proficiency in the analysis of complex physical problems and the use of mathematical or other appropriate techniques to solve them.<br>• Provide a systematic understanding of the concepts and theories of mathematics and their application in the real world – to an advanced level, and enhance career prospects in a huge array of fields Criticize mathematical arguments developed by themselves and others.<br>• Communicate effectively by oral, written, computing and graphical means.<br>• Recognize the need to engage in lifelong learning through continuing education and research. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153. Tamil Nadu

## Course outcome

| Courses | Outcomes |
|---|---|
| **I M.Sc Mathematics - I SEMESTER** | |
| Algebraic Structures | • Recallbasiccountingprinciple,defineclassequationstosolveproblems,explainSylow'stheorems and applythe theorem tofind number ofSylow subgroups.<br>• Define Solvable groups, define direct products, examine the properties of finite abeliangroups, define modules.<br>• Define similar Transformations, define invariant subspace, explore the properties oftriangular matrix, to find the index of nilpotence to decompose a space into invariant subspaces,to find invariants of linear transformation, to explore the properties of nilpotent transformationrelating nilpotence with invariants.<br>• Define Jordan, canonical form, Jordan blocks, define rational canonical form, definecompanionmatrixofpolynomial,findtheelementarydevicesoftransformation,applytheconcepts to find characteristic polynomialof linear transformation.<br>• Define trace, define transpose of a matrix, explain the properties of trace and transpose,to find trace, to find transpose of matrix, to prove Jacobson lemma using the triangular form,define symmetric matrix, skew symmetric matrix, adjoint, to define Hermitian, unitary, normaltransformations and to verify whether the transformation in Hermitian, unitary and normal. |
| Real Analysis-I | • Analyze and evaluate functions of bounded variation and Rectifiable Curves.<br>• Describe the concept of Riemann-Stieltjes integral and its properties..<br>• Demonstrate the concept of step function, upper function, Lebesgue function and theirintegrals.<br>• Construct various mathematical proofs using the properties of Lebesgue integrals andestablishthe Levi monotone convergence theorem.<br>• Formulate the concept and properties of inner products, norms and measurable functions. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai 629 153.

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153. Tamil Nadu

| | |
|---|---|
| Ordinary Differential Equations | • Establish thequalitative behaviour ofsolutions of systemsof differentialequations .<br>• Recognizethephysicalphenomenamodelledbydifferentialequationsanddynamicalsystems.<br>• Analyze solutions using appropriate methods and give examples<br>• FormulateGreen'sfunctionforboundaryvalueproblems.<br>• Understand and use various theoretical ideas and results that underlie the mathematics inthis course. |
| Graph Theory and Applications (Elective- I) | • Demonstratetheconceptofdifferentstructuresandtypesabout graphsandexplainits applications.<br>• Determine the properties of trees andapplications in network and study the conceptsof connections in graphs.<br>• Acquire the knowledge about EulerTours,HamiltonCyclesandmatchingsinGraphs<br>• Analyze the concept of edge colouring ,independent sets and cliques in Graphs<br>• Explain the concept of vertex colorings |
| Analytic Number Theory (Elective –II) | • Studythe basic conceptsofelementarynumbertheory<br>• Explainseveralarithmeticalfunctionsandconstructtheirrelationships<br>• Applyalgebraicstructurein arithmetical functions<br>• Demonstratevariousidentitiessatisfiedbyarithmeticalfunctions<br>• Determinetheapplicationtoμ(n)&∧(n)andseveralequivalentformofprimenumbertheorem |
| | |
| **SEMESTER - II** | |
| Advanced Algebra | • Prove theorems applying algebraic ways of thinking.<br>• Connect groups with graphs and understanding about Hamiltonian graphs.<br>• Compose clear and accurate proofs using the concepts of Galois Theory.<br>• Bring out insight into Abstract Algebra with focus on axiomatic theories.<br>• Demonstrateknowledgeandunderstandingoffundame |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 TAMILNADU INDIA

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153. Tamil Nadu

| | |
|---|---|
| | ntalconceptsincludingextensionfields,Algebraic extensions,Finite fields, Classequations andSylow's theorem |
| Real Analysis-II | • Understand and describe the basic concepts of Fourier series and Fourier integrals withrespect to the orthogonal system.<br>• Analyze therepresentation andconvergence problemsof Fourierseries.<br>• Analyze andevaluate thedifference betweentransforms of variousfunctions.<br>• Formulate and evaluate complex contour integrals directly and by the fundamentaltheorem.<br>• Apply the Cauchy integral theorem in its various versions to compute contourintegration. |
| Mathematical Statistics (Elective – III) | • Discuss the sets, functions of sets,randing variables and certain expectations<br>• Discuss binomial and related distributions<br>• Tostudyvariouskindsofdistributions<br>• Discuss additional distributionsand order statistics and statistical applications<br>• Tolearntheconvergenceindistributionofasequenceofrandom variables |
| Operations Research (Elective – IV) | • Be able to build and solve Transportation and Assignment problems using appropriate method<br>• Learn the constructions of network and optimal scheduling using CPM and PERT.<br>• Ability to construct linear integer programming models and solve linear integer programming models using branch and bound method.<br>• Understand the need of inventory management.<br>• To understand basic characteristic features of a queuing system and acquire skills in analyzing queuing models. |
| Mathematical Documentation using LaTeX (SEC-I) | • TolearnthelatesttechniquesinLatexforthepreparation ofprintabledocumentsinanenhancedmanner.<br>• Toavoiddifficultywhiletypingaprojectorthesiscompar ingothermathematicalsoftware.<br>• Towritemathematicalequationsandtodrawgraphsusing Latex<br>• Tofixfootnotesandheader<br>• TocreatetablesandtypeformulaeinMathematics |
| **SEMESTER - III** | |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153 Tamil Nadu

| | |
|---|---|
| AdvancedAlgebra-I | • Constructtheprocesstodevelopthefundamentalnotationsofli neardependence,basisanddimensions<br>• Developtheconceptsaboutlineartransformationandmatrixth eory<br>• Identifythetheoremsaboutlineartransformations,canonicalf ormofmatricesandfundamentalpropertiesof matrices<br>• Identifythetheoremsaboutlineartransformations,canonicalf ormofmatricesandfundamentalpropertiesof matrices |
| Graph Theory | • Demonstratetheconceptof differentstructuresandtypesaboutgraphsand explainitsapplications<br>• AcquiretheknowledgeaboutEulerTours,HamiltonCyclesan dmatchingsinGraphs<br>• Explaintheconceptofvertexcolorings |
| Measure And Integration | • EstablishthebasicsforLebesguemeasurablefunctionsandthe Lebesgue integral.<br>• Characterize oninnerapproximationbyclosedsets andonouter approximationbyopensets.<br>• Provide a characterization of the class of functions on closed,bounded intervals that may be expressed as the difference ofincreasingfunctions.<br>• AbstractthemostimportantpropertiesofLebesguemeasureo nthe reallinein theabsenceofanyTopology. |
| Topology–I | • Demonstrate an understanding of the concepts of topologicalspaces, construct topologies on a set. Understand the naturalgeneralizationofopenandclosedsets,limitpointsforth ereallineandEuclideanspace ontotheTopologicalSpaces.<br>• Extend the concept of continuity andvarious properties ofcontinuous functions; and define a topology on the Cartesian products oftopologicalspaces.<br>• Appreciate the importance of a weaker form of compactnesscalled Limit point compactness, local compactness and one-point compactification and identify spaces where Limit pointcompactness coincideswithcompactness. |
| Calculus Of Variations And Integral Equations | • DemonstratecompetencewiththebasicideasMaximaandMi nima<br>• DemonstrateRelationbetweendifferentialandintegralequati ons<br>• AppreciatethesignificanceofFredholmequationswithsepara ble kernels |
| **SEMESTER - IV** | |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153. Tamil Nadu

| | |
|---|---|
| Advanced Algebra-II | • Buildtheknowledgewiththerelationofonefieldtoanother<br>• Studytherelationshipbetweentherootsofapolynomialwithits GaloisGroupand examineit<br>• Determinethenatureoffieldshavingonlyafinitenumberofele ments<br>• Understand the classification of all division ringsR in theircentreandsatisfythecondition.AlsostudytheLeftDivisi onAlgorithmand Lagrange'sTheorem |
| Complex Analysis | • ExtendCalculustoComplexdomain.<br>• DevelopthefundamentalsofpointsetTopologyandMetricSp ace.<br>• Distinguishbetweendefiniteandindefiniteintegrals.<br>• Familiarwiththetheoryofdefiniteintegralsofrealcontinuousf unctions<br>• Classifytheisolatedsingularitiesofanalyticfunctions. |
| Functional Analysis | • Makeuseofthe uniform Boundednesstheoremintheconjugateofan operatoronaBanach Space.<br>• Examinethepropertiesofthemappingfromtheoperatoronano rmedlinearspacetoitsconjugate.<br>• Understandtheimportanceof operatorssuchasself adjointandnormaloperators.<br>• AbletofocusonfixedbutarbitraryHilbertspace. |
| Topology-II | • Demonstrateunderstandingoftheconceptsofcountable,First countablespace,Secondcountablespace,Lindelofspace,Sep arablespaceandRegularspace<br>• Appreciatetheconceptsofnormalspaceandderivenormalityf rom other spaces, and understand the Urysohn Lemma andcompletely regulardefinition.<br>• ExplainBairespaces,completemetricspace,compactHausdo rffspacesandtherelationbetween thesespaces.<br>• Applytheoreticalconceptsintopologytounderstandsomeapp lications. |
| Project | • Differentiateprimaryandsecondarydataandquestionnaire<br>• Explainaboutresearchmethodology<br>• Readarticlesandwrite an article.<br>• Knowaboutthebibliography<br>• Knowhowtowritedissertationsandpresent apaper inconferences. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE * KALIYAKKAVILAI K.K. DISTRICT 629 153 TAMILNADU INDIA

Head
Department of Mathematics
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu

# NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE,

# KALIYAKKAVILAI

*DEPARTMENT OF PHYSICS*

## PO & CO

## 2023-2024

**NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE, KALIYAKKAVILAI**

# *Department of Physics*

## PO & CO of 2023-2024

| B.Sc. Physics | |
|---|---|
| **Program Outcome** | Upon completion of B.Sc. degree programme, the graduates will be able to<br>• Acquire fundamental concepts in the field of Physics and procedural knowledge that creates different types of professionals related to the subject area of Physics, including professionals engaged in research and development, teaching and government / public service.<br>• They achieve a chance to demonstrate the ability to use skills in Physics and its related areas of technologies for formulating and tackling Physics related problems.<br>• They inculcate innovative skills and teamwork among students to meet societal expectations. They can perform analysis to assess, interpret and create innovative ideas through practical experiments.<br>• The program facilitate to enter multidisciplinary path to solve day-to-day scientific problems. It improve communication ability and knowledge transfer through ICT aided learning integrated with Library resources. The program helps to attain competency in job market / entrepreneurship. |
| **Program Specific Outcome** | Upon completion of the B.Sc. Physics Programme, students will be able to<br>• Understand and appreciate the principles of physics and demonstrate knowledge of mechanics, optics, thermodynamics, electromagnetism, nuclear physics, solid state physics, spectroscopy and electronics.<br>• They develop skills to comprehend and solve problems in physics.<br>• They also conceptualize and perform experiments and relate the results with theoretical predictions.<br>• They can apply the knowledge of physics to solve present-day problems such as energy crisis and pollution.<br>• They communicate scientific knowledge effectively using technology. |

# Course Outcomes

## B.Sc. Physics

| Courses | Outcomes |
|---|---|
| **SEMESTER I** | |
| **Tamil:** Poetry, Grammar, Prose Literature, Short Stories & Literary History | Knowing the literary creators and works of the time and creating new works. The students<br>• understand the basics of language<br>• understand the ancient cultural customs of the classical language<br>• assume the solution to social problems and issues. |
| **Malayalam:** Malayala Kavitha | The students<br>• understand the different branches of poetry which deals with numerous social subjects<br>• helps to build a very deep knowledge about today's social conditions. |
| **Communicative English I** | • It enhances the communicative skills of students.<br>• To enrich the knowledge of students in grammar usage.<br>• It stimulates the real life situations in the classroom to practice real English dialogues and speeches to gain English language fluency.<br>• It helps to build up the learners confidence in oral and interpersonal communication. |
| **Foundation Course – Introductory Physics** | Students will be able to<br>• Apply concept of vectors to understand concepts of Physics and solve problems .<br>• Appreciate different forces present in Nature while learning about phenomena related to these different forces.<br>• Quantify energy in different process and relate momentum, velocity and energy.<br>• Differentiate different types of motions they would e in various courses and understand their basis<br>• Relate various properties of matter with their behaviour and connect them with different physical parameters involved |
| **Properties of Matter and Acoustics** | • Relate elastic behavior in terms of three modulii of elasticity and working of torsion pendulum.<br>• Able to appreciate concept of bending of beams and analyze the expression, quantify and understand nature of materials.<br>• Explain the surface tension and viscosity of fluid and |

| | |
|---|---|
| | support the interesting phenomena associated with liquid surface, soap films provide an analogue solution to many engineering problems<br>• Analyze simple harmonic motions mathematically and apply them. Understand the concept of resonance and use it to evaluate the frequency of vibration. Set up experiment to evaluate frequency of ac mains<br>• Understand the concept of acoustics, importance of constructing buildings with good acoustics.<br>• Able to apply their knowledge of ultrasonics in real life, especially in medical field and assimilate different methods of production of ultrasonic waves |
| **Physics for Everyday Life** | • Students will know where all physics principles have been put to use in daily life.<br>• Appreciate the concepts with a better understanding<br>• Know about Indian scientists who have made significant contributions to Physics |
| **Major Practical I** | • Apply various physics concepts to understand Properties of Matter<br>• Set up experimentation to verify theories, quantify and analyse.<br>• Able to do error analysis and correlate results |
| **Major PracticalI** | • Develop the skill to measure the material constants such as, young's modulus, rigidity modulus and moment of inertia of the solid materials.<br>• Get idea to measure gravitational acceleration using simple pendulum.<br>• Understand the principle and properties of sound through experiments.<br>• Able to illustrate the properties of fluids such as Viscosity and surface tension by simple experiments. |
| **SEMESTERII** | |
| **Tamil II:** Poetry, Grammar, Prose Literature, Life History & Literary History | • Acquire the knowledge of announcement of devotional norms through religious literature.<br>• Learn to practice writing letters expressing the language structure.<br>• Develop the skill of expressing moral thoughts through the texts of justice.<br>• Attain the skill of teaching and directing the biographies of the saints.<br>• Gain the knowledge of literature created by religions. |

| | |
|---|---|
| **Malayalam:**Gadhya Sahithyam | • The autobiographical study of different famous personalities the students were alegenerate several good qualities with the study of Basheer's Balyakalasakhi.<br>• Understand a lot more about cultura lpractices of our society. |
| **Communictive English II** | • Helps to improve practical usage of English Grammar and the students overcome their fear to speak in English in front of their peers and teachers.<br>• Build self-confidence through various classroom activities |
| **Heat, Thermodynamics and Statistical Physics** | • Acquires knowledge on how to distinguish between temperature and heat. Introduce him/her to the field of thermometry and explain practical measurements of high temperature as well as low temperature physics. Student identifies the relationship between heat capacity, specific heat capacity. The study of Low temperature Physics sets the basis for the students to understand cryogenics, superconductivity, superfluidity and Condensed Matter Physics.<br>• Derive the efficiency of Carnot's engine. Discuss the implications of the laws of Thermodynamics in diesel and petrol engines.<br>• Able to analyze performance of thermodynamic systems viz efficiency by problems. Gets an insight into thermodynamic properties like enthalpy, entropy.<br>• Study the process of thermal conductivity and apply it to good and bad conductors. Quantify different parameters related to heat, relate them with various physical parameters and analyse them.<br>• Interpret classical statistics concepts such as phase space, ensemble, Maxwell-Boltzmann distribution law. Develop the statistical interpretation of Bose-Einstein and Fermi-Dirac . Apply to quantum particles such as photon and electron. |
| **Astrophysics** | • Understand the principles of astrophysics.<br>• Describes the science of formation and evolution of stars and interpretation of various heavenly phenomena.<br>• Understand the physical nature of celestial bodies along with the instrumentation and techniques used in astronomical research |
| **Home Electrical Installation** | • Get knowledge on electrical instruments, installations and domestic wiring techniques with safety precautions and servicing.<br>• Understand the concept of electricity flow through various conductors and devices.<br>• Understand the usage of various power protection devices that can be installed for domestical purposes. |

| | |
|---|---|
| **MajorPractical II** | • Apply their knowledge gained about the concept of heat and sound waves, resonance.<br>• Calculate frequency of ac mains set up experimentation to verify theories.<br>• Quantify and analyse, able to do error analysis and correlate results. |
| **SEMESTERIII** | |
| **Tamil III**: Poetry,Grammar, Prose Literature, Novel & Literary History | • To know the life history of the ancient Tamils through epics. Promoting the grammatical ability of the consecration team by teaching them the grammar.<br>• Sowing literary study ability in the mind of the student. Instruction to live in an honest way. Making history of eipics and short stories.<br>• |
| **Malayalam:** Dhrishyakala sahithyam | • Not only watching, but by studying about movies students were introduced to a new world were they actually allowed to understand about what they are watching on big screen, with the study of different branches of drama students are getting deeper Knowledge abou tit. |
| **General EnglishI** | • To develop Vocabulary and Pronunciation.<br>• To understand various styles of writings.<br>• To enhance his or her familiarity and fluency with the language considerably. |
| **Electricity and Electromagnetism** | • Acquire the basic knowledge about electricity and electromagnetism.<br>• Understand the various laws such as Ohm'slaw, Kirchoff,s laws, growth and decay of the current in the |
| | Differentia lcirucuits.<br>• Understand the concepts of Faraday's law, Owen's bridge and co-efficients of coupling.<br>• Able to derive the Maxwell's derivations. |
| **Maintenance of Electrical Appliances** | • Understand the principle and working of measuring meters such as galvanometer, ammeter, voltmeter and multimeter.<br>• Describe the construction, working and testing of transformers. Trouble shoot household components such as electric lamb, fan, electric iron, washing machines, heaters and refrigerators.<br>• Analyze AC and DC connections, house wiring and earthing.<br>• Understand the mechanism of electrical protection and the operation of UPS, generator and motor. |

| | |
|---|---|
| **MajorpracticalIII** | • Use a potentiometer to calibrate an a low range voltmeter.<br>• Construct the series resonance circuit to find out the self inductance of the coil.<br>• Demonstrate experimentally the comparison of capacitances and figure of merit using Ballistic galvanometer.<br>• Newton's law of cooling is verified. Construct the parallel resonance circuit to find out the self inductance of the coil. |
| **SEMESTERIV** | |
| **TamilIV:**Poetry,Grammar, Prose Literature, Drama & Literary History | • To know the culture of the ancient Tamils. Teaching subject grammar for Biology.<br>• Teaching Biological virtues through literature. Motivation to create plays centered on historical backgrounds.<br>• To know the history and individual features of Sangam literature. |
| **Malayalam:**Vaartha Madhyamangal (Journalism) | • By the study of journalism students were taken to a new path of their career |
| **GeneralEnglish II** | • Develop interest in and appreciation of Literature.<br>• To develop confidential communication skill.<br>• To learn different styles of writings ,like prose, poetry and fiction.<br>• To understand practical usage of English Grammar. |
| **Heatand Thermodynamics** | • Acquire the knowledge of Joule-Kelvin effect, liquefaction of hydrogen and helium gases and adiabatic demagnetization .<br>• Explain various heat experiments and understand the concepts of black body radiation.<br>• Understand the various laws of thermodynamics and |
| | Gas equation. |
| **Maintenance of electronic appliances** | • Understand the functions of electronic components and familiarize with soldering and de-soldering techniques.<br>• Explain the operations of multimeters, CRO and A/F&R/F Oscillators.<br>• Discuss the working and uses of transducers.<br>• Describe the basic operation of a communication system.<br>• Understand photograph yandtherelated accessories. |

| | |
|---|---|
| **MajorPractical IV** | • Use a potentiometer to find the specific resistance and emf of a thermocouple.<br>• Demonstrate experimentallythe comparisonofemf's and high resistance by leakage using Ballistic galvanometer.<br>• Demonstrate experimentally to find the absolute capacityofa condenser using Ballistic galvanometer.<br>• Evaluate the magnetic field along the axis of a coil and horizontal component of earth's magnetic field using vibration magnetometer.<br>• Develop skill to determine the self inductance of the coil by Anderson's bridge.<br>• Develop skill to calibrate the ammeter using potentiometer.<br>• Acquire the knowledge of comparison of magnetic momentsusingdeflectionmagnetometerinTanA andTanB position. |
| **SEMESTERV** | |
| **Basic Electronics** | • Analyze any linear circuit using Thevenin's theorem and Norton's theorem.<br>• Familiarizewithdifferenttypesof diodesandtheir characteristics.<br>• Understand the functions of transistor amplifiers and operation amplifiers.<br>• Distinguish between oscillators and multivibrators. |
| **Spectroscopy** | • Understand the basics of atomic and molecular spectroscopy.<br>• Compare the principles and techniques of microwave, infrared, Raman and electronic spectroscopies.<br>• Understand the instrumentation of IR spectroscopy |
| **Atomic and Nuclear Physics** | • Explain band theory of solids and classify solids based on band theory.<br>• Understand the propertiesofpositiveraysandthe experimental determination of e/m.<br>• Analysethevariousatommodelsandthecoupling mechanisms. |
| | • Understand properties and uses ofX-rays.<br>• Understand the basic properties of nucleus.<br>• Understand the basic properties o fnucleus.<br>• Explain the kinematics of nuclear reactions.<br>• Discuss the operation of nuclear detectors and particle accelerators. •<br>• Analyze the behavior of elementary particles and their fundamental interactions Solid state physics<br>• Compare different bonds in solids.<br>• Understand the principle of superconductivity |

| | |
|---|---|
| **Communication electronics** | • Understand the principles of modulation in communication systems.<br>• Compare amplitude and frequency modulation techniques.<br>• Analyze transmission and reception of AM and FM modulation.<br>• Explain the unique features of digital modulation techniques. |
| **Personality Development** | • Gives basic awareness about the significance ofsoft skills in professional and inter-personal communications and facilitate an all-round Development of personality. |
| **Practical V Non-Electronics** | • Demonstrate the conversion of a galvanometer into voltmeter.<br>• Determine through experiment the absolute capacity of a capacitor and mutual inductance using Ballistic galvanometer.<br>• Verify Thevenin's and Norton'theorems.<br>• Evaluate Cauchy's constant experimentally.<br>• Determine the young's modulus of the material using elliptical fringes. |
| **Practical lV Electronics** | • Study the V-Icharacteristics of PN junction diode and zener diode.<br>• Analysing the percentage of regulation of a Fullwave rectifier.<br>• Demonstrate the operations of oscillators and multivibrators using transistor-based circuits.<br>• Design circuits using OPAMPs to function as-Adder, Subtractor, differentiator, Integrator,-Low Pass And High Pass Filter |
| **SEMESTERVI** | |
| **QuantumMechanics** | • Understand wave-particle duality of matter. Explain uncertainty principle.<br>• Solve Schrodinger's 1D and 3D wave equations and evaluate eigen values.<br>• Describe the applications of quantum mechanics.(tunneling,simple harmonic oscillator and particle in a box) |
| **Digital Electronics** | • Understand basic codes Boolean operation and logic gates.<br>• Construct Half adder, full adder, flip-flops and multivibrators.<br>• Design logic circuits employing Karnaugh maps. Design Shift registers and counters |
| **Solid State Physics** | • Understand the electronic properties of solids already gained through Introduction to Condensed Matter Physics, and use this understanding to elucidate the electrical, optical and magnetic properties of crystalline solids.<br>• Apply their knowledge to solve problems in solid state physics.<br>• Interpret experimental and computational results. |

| | |
|---|---|
| **Energy Physics** | • Understand the various available energy sources.<br>• Understand about the renewable and clean energy sources such as solar, hydrogen, wind, etc.<br>• Understand the principle of photovoltaics and solar cells .Explain the working of windmills. |
| **Practical VII: General Practical** | • Develop the skill in doing the various experiments on spectrometer to find the various parameters such as angle of the prism, minimum deviation, dispersive power, etc.<br>• Calculate the impedance and the power factor using LR circuit.<br>• Develop the skill of finding the moment of the magnet. |
| **Practical VIII:** Electronics | • Gain knowledge in constructing various electronic circuits skill fully.<br>• Gain the knowledge of constructing the NAND and the NOR gates showing that they are the universal building blocks.<br>• VerifytheBooleanalgebraand theDeMorgan'slaw |

## M.Sc.Physics

| | |
|---|---|
| **Program Outcome** | On completion of program, the postgraduates will<br>• Apply the knowledge and skill they acquired in the designing and development of Electronics circuits to fulfill the needs of Electronic Industry.<br>• Become professionally trained in the area of electronics, optical communication, nonlinear circuits, materials characterization and lasers.<br>• Pursue research related to Physics and Materials characterization |
| **Program Specific Outcome** | Upon completion of the M.Sc Physics Programme, students will be able to<br>• Understand the basic concepts of physics particularly concepts in classical mechanics, quantum mechanics, electrodynamics and electronics to appreciate how diverse phenomena observed in nature follow from a small set of fundamental laws.<br>• Learn to carry out experiments in basic as well as certain advanced areas of physics such as nuclear physics, electronics and lasers.<br>• A research oriented learning that develops analytical and integrative problem-solving approaches. |

## CourseOutcomes

| **SEMESTER I** | |
|---|---|
| **Mathematical Physics** | • Understand use of bra-ket vector notation and explain the meaning of complete orthonormal set of basis vectors, and transformations and be able to apply them.<br>• Able to understand analytic functions, do complex integration, by applying Cauchy Integral Formula. Able to compute many real integrals and infinite sums via complex integration.<br>• Solve equations using Laplace transform and analyze the Fourier transformations of different function, grasp how these transformations can speed up analysis and correlate their importance in technology.<br>• To find the solutions for physical problems using linear differential equations and to solve boundary value problems using Green's function.<br>• Apply special functions in computation of solutions to real world problems |

| | |
|---|---|
| **Classical Mechanics and Relativity** | • Understand the fundamentals of classical mechanics.<br>• Apply the principles of Lagrangianmechanics to solve the equations ofmotion of physical systems.<br>• Apply the principles of Hamiltonian mechanics to solve the equations of motion of physical systems..<br>• Analyze the small oscillations in systems and determine their normal modes of oscillations.<br>• Understand and apply the principles of relativistic kinematics to the mechanical systems.. |
| **Linear and Digital IC's and Applications** | • Learn about the basic concepts for the circuit configuration for the design of linear integrated circuits and develops skill to solve problems<br>• Develop skills to design linear and non-linear applications circuits using Op-Amp and design the active filters circuits.<br>• Gain knowledge about PLL, and develop the skills to design the simple circuits using IC 555 timer and can solve problems related to it.<br>• Learn about various techniques to develop A/D and D/A converters.<br>• Acquire the knowledge about the CMOS logic, combinational and sequential<br>• circuits |
| **Energy Physics** | • To identify various forms of renewable and non-renewable energy sources<br>• Understand the principle of utilizing the oceanic energy and apply it for practical<br>• applications.<br>• Discuss the working of a windmill and analyze the advantages of wind energy.<br>• Distinguish aerobic digestion process from anaerobic digestion.<br>• Understand the components of solar radiation, their measurement and apply them to utilize solar energy. |
| **Practical I** | • Understand the strength of material using Young's modulus.<br>• Acquire knowledge of thermal behavior of the materials.<br>• Understand theoretical principles of magnetism through the experiments.<br>• Acquire knowledge about arc spectrum and applications of laser<br>• Improve the analytical and observation ability in Physics Experiments<br>• Conduct experiments on applications of FET and UJT<br>• Analyze various parameters related to operational amplifiers. |
| **SEMESTERII** | |

| | |
|---|---|
| **Statistical Mechanics** | • To examine and elaborate the effect of changes in thermodynamic quantities on the states of matter during phase transition<br>• To analyze the macroscopic properties such as pressure, volume, temperature, specific heat, elastic moduli etc. using microscopic properties like intermolecular forces, chemical bonding, atomicity etc. Describe the peculiar behavior of the entropy by mixing two gasesJustify the connection between statistics and thermodynamic quantities<br>• Differentiate between canonical and grand canonical ensembles and to interpret the relation between thermodynamical quantities and partition function<br>• To recall and apply the different statistical concepts to analyze the behavior of ideal Fermi gas and ideal Bose gas and also to compare and distinguish between the three types of statistics.<br>• To discuss and examine the thermodynamicalbehavior of gases under fluctuation and also using Ising model |
| **Quantum Mechanics I** | • Demonstrates a clear understanding of the basic postulates of quantum mechanics which serve to formalize the rules of quantum Mechanics<br>• Is able to apply and analyze the Schrodinger equation to solve one dimensional problems and three dimensional problems<br>• Can discuss the various representations, space time symmetries and formulations of time evolution<br>• Can formulate and analyze the approximation methods for various quantum mechanical problems<br>• To apply non-commutative algebra for topics such as angular and spin angular momentum and hence explain spectral line splitting. |
| **Microprocessor 8085 & Microcontroller 8051** | • Gain knowledge of architecture and working of 8085 microprocessor<br>• Get knowledge of architecture and working of 8051 Microcontroller.<br>• Be able to write simple assembly language programs for 8085A microprocessor.<br>• Able to write simple assembly language programs for 8051 Microcontroller.<br>• Understand the different applications of microprocessor and microcontroller. |
| **Non-Linear Dynamics** | • Gain knowledge about the available analytical and numerical methods to solve various nonlinear systems.<br>• Understand the concepts of different types of coherent structures and their importance in science and technology.<br>• Learn about simple and complex bifurcations and the routes to chaos.<br>• Acquire knowledge about various oscillators, characterization of chaos and fractals.<br>• To analyze and evaluate the applications of solutions in telecommunication, applications of chaos in |

| | |
|---|---|
| | cryptography, computations and that of fractals. |
| **Physics For Competitive Exams** | • Acquire the knowledge of the fundamental concept of physics<br>• Understand the concepts of fundamental physics<br>• Apply the concept of physics to solve various problems<br>• Strengthen an appropriate problem-solving approach evaluate the results of new analytical problems and develop a correct solutions or conclusions and assess a step to describe the quantitative analysis. |
| **Practical II** | • Understand the strength of material using Young's modulus<br>• Acquire knowledge of thermal behavior of the materials<br>• Understand theoretical principles of magnetism through the experiments.<br>• Acquire knowledge about arc spectrum and applications of laser<br>• Improve the analytical and observation ability in Physics Experiments<br>• Conduct experiments on applications of FET and UJT<br>• Analyze various parameters related to operational amplifiers<br>• Understand the concepts involved in arithmetic and logical circuits using IC's<br>• Acquire knowledge about Combinational Logic Circuits and Sequential Logic Circuits<br>• Analyze the applications of counters and registers |

| SEMESTERIII | |
|---|---|
| **Quantum Mechanics I** | • Attains wave mechanical basic concepts and Schrodinger and Heisenberg formulations.<br>• Solves various eigen value problems. Describes different operators and matrix theory in quantum mechanics.<br>• Understand the Theory of angular momentum and spin matrices, orbital angular momentum and Clebsh Gordan Coefficient .<br>• Understand thetime dependant and independent perturbation theory. |
| **Atomic and Molecular Spectroscopy** | • Learn the origin of spectrum and spectroscopy.<br>• Understand the existence of various EMwaves and their related spectra.<br>• Understand the concept of IR, UV and Resonance spectra.<br>• Analyse different spectra of NMR, XPS and Raman.<br>• Acquire the skill of interpreting ever al types of spectra in Real time experiment |
| **Condensed Matter Physics** | • Understand the importance of superconductivity both in scientific and technical way.<br>• Attains the knowledge of the electronic structure of solids, especially, metals, semiconductors and dielectrics.<br>• Attains the knowledge about the phonon and their thermal properties.<br>• Get idea about free electron theory.<br>• Develop skill about identifying different types of Magnetic behavior. |
| **Numerical Methods and C++ Programming** | • Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations.<br>• Analyse and evaluate the accuracy of common numerical methods. Describe the advantages of a high level language like C++, the programming process, and the compilation process.<br>• To describe and use software tools in the programming process.<br>• To apply good programming principles to the design and implementation of C++ programs. |
| **Practical V:**Advanced Experiments I | • Develop the skill to find the magnetic susceptibility of the given sample .<br>• Ability to determine the young's modulus, bulk modulus and rigidity modulus of the given material using elliptical fringes.<br>• Develops the skill of forming the equipotential lines and to determine the electric field between the lines.<br>• Ability to determine the temperature coefficient of Forward biased diode. |

| | |
|---|---|
| | • Undergo characteristic study on photodiode.<br>• Calibrate hall probe into gaussmeter. |
| **Practical VI:**<br>Microprocessor Experiments | • Developskillinthearithmeticoperationanddatamanipulation .<br>• Designinterfacingcircuitswith8085.Designandimplement 8051 microcontroller based systems .<br>• ToUnderstandtheconceptsrelatedtoI/Oandmemory interfacing. |
| **SEMESTER IV** | |
| **Quantum Mechanics II** | • Understand the approximation methods for time-independent problems to solve Schroginger equation.<br>• Attains the knowledge of Theory of scattering and calculation of scattering crosssection, optica ltheorem ,Bornand Elkonal approximation,partial waveanalysis etc.<br>• Understand the Theory of identical particlesand effects of spin on energy states.<br>• Develops the skill of solving the equation of motion, brackets and various symmetries.<br>• Understand the Relativistic Quantum Mechanics using Dirac equation, Dirac matrices etc. |
| **Nuclear & Particle Physics** | • Have a basic knowledge of nuclear size ,shape , bindingenergy.etc and also the characteristics of nuclear force in detail.<br>• Gain knowledge about various nuclear models and potentials associated.<br>• Acquire knowledge about nuclear decay processes and their outcomes.<br>• Have a wide understanding regarding beta and gamma decay.<br>• Grasp knowledge about Nuclear reactions, Fission and Fusion and their characteristics.<br>• Understand the basic forces in nature and classification of particles and study in detail conservations laws and quark Model sinde tail. |
| **Research Methodology** | • Identify and discuss the complex issues inherent in selecting a research problem.<br>• Selecting an appropriate research design, and implementing a research project.<br>• Attains the skill of writing the thesis.<br>• Develops the skill of using the origin and Latex software. |
| **Renewable Energy Sources** | • Gains the knowledge of various renewable energy sources available in the nature.<br>• Understand the availability and utility of the Resources |
| **Practical VII:** Advanced Physics Experiments | • To gain practical knowledge to determine temperature co-efficient and band gap using carey foster bridge.<br>• To learn more about hall effect. |

| | |
|---|---|
| | • Understand the principle of four probe and its application<br>• To develop the skill in ultrasonic diffraction<br>• Understand about two probe and its application. |
| **Practical VIII : $C^{++}$ Programming** | • Know the basics of C++ programming and write simple programs<br>• Describe the principle of object oriented programming<br>• Develop program using functions classes, operator overloading and inheratance |
| **Project** | • Develop skill in finding the problem and analyzing the data and find the solution<br>• Get the basic for research. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

Signature of the HoD

Head
Department of Physics,
Nanjil Catholic College of Arts & Science,
Kaliyakkavilai - 629 153, Tamil Nadu

NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE

KALIYAKKAVIALI

| DEPARTMENT OF CHEMISTRY (2023-2024) | |
|---|---|
| **B.Sc. Chemistry** | |
| Program Outcome | ✓ Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate Programme of study<br>✓ Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups<br>✓ Critical thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development<br>✓ Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.<br>✓ Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyze and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples, and addressing opposing viewpoints.<br>✓ Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problem arising, synthesizing and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation |

| | |
|---|---|
| | ✓ Cooperation/Team work: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team<br>✓ Scientific reasoning: Ability to analyse, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective.<br>✓ Reflective thinking: Critical sensibility to lived experiences, with self awareness and reflexivity of both self and society<br>✓ Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.<br>✓ Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion.<br>✓ Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.<br>✓ Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.<br>✓ Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.<br>✓ Lifelong learning: Ability to acquire knowledge and skills, including „learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/reskilling. |

| | |
|---|---|
| Program Specific Outcome | ➢ Disciplinary Knowledge: Understand the fundamental principles, concepts, and theories related to physics and computer science. Also, exhibit proficiency in performing experiments in the laboratory.<br>➢ Critical Thinking: Analyze complex problems, evaluate information, synthesize information, apply theoretical concepts to practical situations, identify assumptions and biases, make informed decisions and communicate effectively<br>➢ Problem Solving: Employ theoretical concepts and critical reasoning ability with physical, mathematical and technical skills to solve problems, acquire data, analyze their physical significance and explore new design possibilities.<br>➢ PSO4: Analytical & Scientific Reasoning: Apply scientific methods, collect and analyze data, test hypotheses, evaluate evidence, apply statistical techniques and use computational models.<br>➢ Research related skills: Formulate research questions, conduct literature reviews, design and execute research studies, communicate research findings and collaborate in research projects.<br>➢ Self-directed & Lifelong Learning: Set learning goals, manage their own learning, reflect on their learning, adapt to new contexts, seek out new knowledge, collaborate with others and to continuously improve their skills and knowledge, through ongoing learning and professional development, and contribute to the growth and development of their field. |

**Courses Outcome**

| **Courses** | **Outcomes** |
|---|---|
| **I B.Sc. Chemistry** | |
| **SEMESTER I** | |
| GENERAL CHEMISTRY-I | • Explain the atomic structure, wave particle duality of matter, periodic properties bonding, and properties of compounds.<br>• Classify the elements in the periodic table, types of bonds, reaction intermediates electronic effects in organic compounds, types of reagents.<br>• Apply the theories of atomic structure, bonding, to calculate energy of a spectral transition, $\Delta x$, $\Delta p$ electronegativity, percentage ionic character and bond order.<br>• Evaluate the relationship existing between electronic |

| | |
|---|---|
| | configuration, bonding, geometry of molecules and reactions; structure reactivity and electronic effects<br>• Construct MO diagrams, predict trends in periodic properties, assess the properties of elements, and explain hybridization in molecules, nature of H – bonding and organic reaction mechanisms. |
| FOOD CHEMISTRY | • Types of food<br>• Food adulteration and poisons<br>• Food additives and preservation |
| FOUNDATION COURSE | • Learn about atom structure and periodic properties.<br>• Gain knowledge on types of chemical bonding<br>• Explain different states of matter<br>• Discussion on nomenclature and isomerism in organic compounds<br>• Knowledge on electromagnetic radiation and its interaction with matter |
| ALLIED CHEMISTRY FOR PHYSICAL SCIENCES I | • Gain in-depth knowledge about the theories of chemical bonding, nuclear reactions and its applications.<br>• Evaluate the efficiencies and uses of various fuels and fertilizers<br>• Explain the type of hybridization, electronic effect and mechanism involved in the organic reactions.<br>• Apply various thermodynamic principles, systems and phase rule.<br>• Explain various methods to identify an appropriate method for the separation of chemical<br>• components |
| Quantitative Inorganic Estimation (titrimetry) and Inorganic Preparations | • Explain the basic principles involved in titrimetric analysis and inorganic preparations.<br>• Compare the methodologies of different titrimetric analysis.<br>• Calculate the concentrations of unknown solutions in different ways and develop the skillto<br>• Estimate the amount of a substance present in a given solution.<br>• Assess the yield of different inorganic preparations and identify the end point of various titrations. |
| ALLIED CHEMISTRY PRACTICAL FOR PHYSICAL | • Gain an understanding of the use of standard flask and volumetric pipettes, burette. |

| | |
|---|---|
| SCIENCES I | • Design, carry out, record and interpret the results of volumetric titration.<br>• Apply their skill in the analysis of water/hardness.<br>• Analyze the chemical constituents in allied chemical products |
| **SEMESTER II** | |
| GENERAL CHEMISTRY-II | • Explain the concept of acids, bases and ionic equilibria; periodic properties of s and p-block elements, preparation and properties of aliphatic and aromatic hydrocarbons<br>• Discuss the periodic properties of sand p- block elements, reactions of aliphatic and aromatic hydrocarbons and strength of acids<br>• Classify hydrocarbons, types of reactions, acids and bases, examine the properties s and p-block elements, reaction mechanisms of aliphatic and aromatic hydrocarbons<br>• Explain theories of acids, bases and indicators, buffer action and important compounds of s-block elements<br>• Assess the application of hard and soft acids indicators, buffers, compounds of s and p- block elements and hydrocarbons |
| DAIRY CHEMISTRY | • Understand about general composition of milk – constituents and its physical properties.<br>• Acquire knowledge about pasteurization of Milk and various types of pasteurization -Bottle, Batch and HTST Ultra High Temperature Pasteurization.<br>• Learn about Cream and Butter their composition and how to estimate fat in cream and Ghee<br>• Explain about Homogenized milk, flavoured milk, vitaminised milk and toned milk.<br>• Have an idea about how to make milk powder and its drying process - types of drying |
| COSMETICS AND PERSONAL GROOMING | • Know about the composition of various cosmetic products<br>• Understand chemical aspects and applications of hair care and dental care and skincare products.<br>• Understand chemical aspects and applications of perfumes and skin care products.<br>• To understand the methods of beauty treatments their advantages and disadvantage |

| | |
|---|---|
| | • Understand the hazards of cosmetic products. |
| ALLIED CHEMISTRY FOR PHYSICAL SCIENCES II | • Write the IUPAC name for complex, different theories to explain the bonding in coordination compounds and water technology<br>• Explain the preparation and property of carbohydrate, amino acids and nucleic acids.<br>• Apply/demonstrate the electrochemistry principles in corrosion, electroplating and fuel cells.<br>• Identify the reaction rate, order for chemical reaction and explain the purpose of a catalyst.<br>• Outline the various type of photochemical process. |
| QUALITATIVE ORGANIC ANALYSIS AND PREPARATION OF ORGANIC COMPOUNDS | • Observe the physical state, odour, colour and solubility of the given organic compound.<br>• Identify the presence of special elements and functional group in an unknown organic compound performing a systematic analysis.<br>• Compare mono and dicarboxylic acids, primary, secondary and tertiary amines, mono and diamides, mono and polyhydric phenols, aldehyde and ketone, reducing and non- reducing sugars and explain the reactions behind it.<br>• Exhibit a solid derivative with respect to the identified functional group. |
| ALLIED CHEMISTRY PRACTICAL FOR PHYSICAL SCIENCES | • Gain an understanding of the use of standard flask and volumetric pipettes, burette.<br>• Design, carry out, record and interpret the results of volumetric titration.<br>• Apply their skill in the analysis of water/hardness.<br>• Analyze the chemical constituents in allied chemical products |
| **II B.Sc. Chemistry** | |
| **SEMESTER III** | |
| PHYSICAL CHEMISTRY I | • Compare the behaviour of ideal and real gases.<br>• Develop knowledge on the concept of vapour pressure and Distinguish ideal solutions from non ideal solutions<br>• Analyze the structure of crystals and explains the imperfections in crystal systems<br>• Explain the activity of isotopes and Discuss the applications of radio isotopes<br>• Discuss the kinetics of photochemical reactions and |

| | |
|---|---|
| | Illustrate the photo physical process |
| GREEN CHEMSITRY | • Apply the Principles of Green Chemistry in various reactions<br>• Assess the quality of green solvents in Chemical process<br>• Explain the efficiencies of green catalyst<br>• Distinguish the Problems of Ordinary reactions and Green reactions<br>• Illustrate the importance of green energy technology. |
| FOOD CHEMISTRY | • Analyse the needs of foods to human and other living things.<br>• List out important Nutrients, Vitamins and Minerals to the human<br>• Discuss on food additives and preservative methods<br>• Explain the food adulterations and analyse adulterants available in the common foods<br>• Illustrate the various food regulation laws and standards. |
| FOOD SCIENCE | • Find the sources of food and list out major food groups<br>• Summarizes the food additives and explain its significance.<br>• Explain the food preservation and functions of food<br>• Preservatives Identify the adulterants available in the food.<br>• Examine the food and what are the food quality standards used to assess the food. |
| WATER MANAGEMENT | • Classify the water pollution and analyse the water pollutants<br>• List out different water quality parameters and discuss its importance.<br>• Elaborate water purification processes and show the advantages of different methods<br>• Apply various methods to treat waste water and analyze the treated water<br>• Develop the water storage methods |
| ORGANIC PREPARATION & INORGANIC QUALITATIVE ANALYSIS I | • List out the compounds to be prepared and discuss the procedure for preparations<br>• Discuss the principle of qualitative analysis and apply the principle for the analysis of given salt.<br>• Analyse systematically the given salt mixture and determine the acidic and basic radicals present in it |
| **SEMESTER IV** | |
| INORGANIC CHEMISTRY II | • Explain the basic concepts of acids and bases and analyze the general characteristics of non-aqueous solvents. |

| | |
|---|---|
| | • Compare the general characteristics of d and f block elements and select the suitable transition and inner transition elements for specific uses.<br>• Elaborate the Principle and Procedure of metal extraction and identify most useful compounds of metals.<br>• Discuss the various compounds of halogens and noble gases<br>• Summarize the methods to analyze data in the experiments |
| PHARMACEUTICAL CHEMISTRY | • List out common diseases and explain the reasons.<br>• Summarize the common drugs and specify its (function) action.<br>• Analyze drugs action and metabolism.<br>• Explain different chronic diseases and its treatment<br>• Find the chemicals to treat health disorder and elaborate various medicinal plants to treat disease. |
| INDUSTRIAL CHEMISTRY | • Explain suitable water purification techniques.<br>• Summarize the fuels of petroleum and biofuels.<br>• Discuss the electrical insulating material and list out the commercial batteries and its uses.<br>• Explain the corrosion and its prevention.<br>• Identify the chemicals used in day to day life. |
| DAIRY CHEMISTRY | • Identify the components in the milk and analyze the properties of milk<br>• Illustrate the processing of milk and Elaborate the changes in properties during processing<br>• List out the milk products and determine the constituents in it<br>• Explain the fermentation of milk and list out the fermented milk products.<br>• Analyzed the condensed milk and Distinguish Cow and buffalo milk. |
| CHEMISTRY IN EVERYDAY LIFE | • Outline the daily used Cosmetics<br>• List out the soaps and detergents and classify the soaps.<br>• Explain about the nutrients from food materials.<br>• Discuss the fertilizers and pesticides necessary for the grow of plants.<br>• Distinguish fibres, yarns & Fabrics andIdentify the dyes used in dyeing. |
| MAJOR PRACTICAL IV | • Define acidic and basic radicals and list out the anions and cations to be analyzed<br>• Discuss the principle of qualitative analysis and apply |

| | |
|---|---|
| | the principle for the analysis of given salt mixture<br>• Analyse systematically the given salt mixture and determine the acidic and basic radicals present in it. |
| **III B.Sc. Chemistry** | |
| **SEMESTER V** | |
| ORGANIC CHEMISTRY II | • Interpret the elements of symmetry and apply Cahn Ingold Prelog"s rule.<br>• Discuss the geometrical configuration (Cis/Trans and /or E or Z) and know the conformational analysis<br>• Analyse the structure and reactions of Carbohydrates.<br>• Identify the aromatic organic compounds Using Huckel"s rule and study the electrophilic and nucleophilc substitution reactions<br>• List out the important heterocyclic compounds and analyse its aromatic characters. |
| PHYSICAL CHEMISTRY II | • Explain the basic concepts of thermodynamics.<br>• Identify the importance of I, II & III laws of thermodynamics<br>• Construct the phase diagram for different heterogeneous system in equilibrium.<br>• Find the applications of solubility product principle and explain different types of conductometric titrations in the laboratory to find the end point<br>• Discuss the various types of molecular spectroscopy and examine the molecules to be active in UV-Visible, IR, Raman Spectroscopy |
| POLYMER CHEMISTRY | • Classify the polymers based on their characters and structures.<br>• Explain the mechanisms and techniques of polymerization.<br>• Discuss the applications of various organic and inorganic polymers.<br>• Summarize the advantages and disadvantages of polymer processing and degradation techniques<br>• List out the important applications of conducting polymers, biopolymers and explain the plastic waste management. |
| BIO CHEMISTRY | • Compare the characters of amino acids and proteins<br>• Explain the important properties and functions of carbohydrates.<br>• Classify the lipids and analyse its specific functions.<br>• List out the various enzymes involved in biochemical reactions and specify its catalytic activities.<br>• Distinguish DNA & RNA and find the functions of components in blood. |

| | |
|---|---|
| MORDERN INSTRUMENTAL ANALYTICAL TECHNIQUES | • Discuss the application of various chromatographic techniques<br>• Explain the principles and analytical applications of Thermoanalytical techniques.<br>• Determine the concentration of metal ions using suitable electro analytical techniques.<br>• Outline the principle and applications of various spectroanalytical methods<br>• Analyze the basic concepts of radioanalytical methods and analytical application |
| APPLIED CHEMISTRY | • Define fuels and Explain various types of fuels<br>• Choose the suitable paints, pigments, lubricants and adhesives for day to day life activities.<br>• Analyze the highly useful fertilizers, pesticides, insecticides and fungicides to improve crop yield.<br>• Discuss the oils, soaps and detergents which are necessary for human health and other activities<br>• Outline the industrially important compounds for the human development activities. |
| ORGANIC ANALYSIS & PHYSICAL CONSTANT DETERMINATION | • Examine the elements other than carbon & Hydrogen present in the organic compounds.<br>• Find the functional group present in the given organic compound<br>• Determine the physical constant for the organic subsiances |
| GRAVIMETRIC ESTIMATION & INORGANIC PREPARATION | • Discuss the principle of gravimetric estimation and explain the procedure for the estimation of ions<br>• Estimate the amount of metal ions available in the given solution and compare the accuracy with other methods.<br>• Illustrate the procedure for the preparation of various metal complexes |
| **SEMESTER VI** | |
| INORGANIC CHEMISTRY III | • Apply the valency bond and crystal field theories to coordination compounds and analyse its spectral and magnetic properties<br>• Compare the various substitution reactions of Coordination Compounds and deduct the stability of the complexes.<br>• Discuss the various organometallic compounds and find its applications<br>• Analyse the characteristics of metal complexes using various Spectroscopy. |

| | |
|---|---|
| | • Identify the biologically important metals & compounds and analyze their uses. |
| ORGANIC CHEMISTRY III | • Understand the reaction mechanism and effect of substituents of phenols and aromatic acid<br>• Discss various types of rearrangements.<br>• Demonstrate various theories of colour and constituents and discuss the structure of naphthalene and anthracene.<br>• Elaborate the structure of alkaloids and terpenoids.<br>• Apply Woodward Fieser rule toconjugated dienes & α,β unsaturated ketones and IR & NMR spectroscopy to compounds |
| PHYSICAL CHEMISTRY III | • Explain the applications of EMF measurements.<br>• Apply the rate constant expressions for various reactions.<br>• Discuss the applications of Le Chatelier"s Principle & Hammett equation and Identify the applications of Interface chemistry<br>• Classify the molecules into various groups based on group theory.<br>• Explain the principles and applications of NMR, ESR & NQR Spectroscopy |
| TEXTILE CHEMISTRY | • Identify the natural and man made fibres and Analyse its characters.<br>• Explain the characteristics of different natural fibres<br>• Illustrate the properties and uses of manmade fibres.<br>• Elaborate the dyeing process of fibres.<br>• Define Printing of fibres andDistinguish between dyeing and printing processes of fibres. |
| NANOCHEMISTRY | • Define the different nanosized materials and analyze their peculiar properties.<br>• List out the various physical, chemical and biological methods of synthesis of nanomaterials<br>• Choose the suitable analytical techniques to characterize nanoparticles.<br>• Elaborate the various applications of nanomaterials and nanocomposites.<br>• Summarize the important nanocompounds and Explain their specific uses. |
| PHYSICAL CHEMISTRY EXPERIMENTS | • Explain the principles of physical chemistry experiments<br>• Determine the molecular weight and Critical Solution Temperature.<br>• Estimate the amount of substance by conductometric and potentiometric titrations. |

| M.Sc. CHEMISTRY | |
|---|---|
| Programme Outcomes | ➢ Problem Solving Skill: Apply knowledge of Management theories and Human Resource practices to solve business problems through research in Global context.<br>➢ Decision Making Skill: Foster analytical and critical thinking abilities for data-based decision-making.<br>➢ Ethical Value: Ability to incorporate quality, ethical and legal value-based perspectives to all organizational activities.<br>➢ Communication Skill: Ability to develop communication, managerial and interpersonal skills.<br>➢ Individual and Team Leadership Skill: Capability to lead themselves and the team to achieve organizational goals.<br>➢ Employability Skill Inculcate contemporary business practices to enhance employability skills in the competitive environment.<br>➢ Entrepreneurial Skill: Equip with skills and competencies to become an entrepreneur.<br>➢ Contribution to Society: Succeed in career endeavors and contribute significantly to society.<br>➢ Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective.<br>➢ Moral and ethical awareness/reasoning Ability to embrace moral/ethical values in conducting one's life. |
| Program Specific Outcome | ❖ Placement Prepare the students who will demonstrate respectful engagement with others' ideas, behaviors, beliefs and apply diverse frames of reference to decisions and actions.<br>❖ Entrepreneur Create effective entrepreneurs by enhancing their critical thinking, problem solving, decision making and leadership skill that will facilitate startups and high potential organizations.<br>❖ Research and Development Design and implement HR systems and practices grounded in research that comply with employment laws, leading the organization towards growth and development.<br>❖ Contribution to Business World Produce employable, ethical and innovative professionals to sustain in the dynamic business world.<br>❖ Contribution to the Society Contribute to the development of the society by collaborating with stakeholders for mutual benefit. |

| Courses outcome | |
|---|---|
| **I M.Sc. Chemistry** | |
| **Semester I** | |
| ORGANIC REACTION MECHANISM - I | • To recall the basic principles of organic chemistry.<br>• To understand the formation and detection of reaction intermediates of organic reactions.<br>• To predict the reaction mechanism of organic reactions and stereochemistry of organic compounds.<br>• To apply the principles of kinetic and non-kinetic methods to determine the mechanism of reactions.<br>• To design and synthesize new organic compounds by correlating the stereochemistry of organic compounds. |
| STRUCTURE AND BONDING IN INORGANIC COMPOUNDS | • To predict the geometry of main group compounds and clusters.<br>• To explain about the packing of ions in crystals and apply the radius ratio rule to predict the coordination number of cations.<br>• To understand the various types of ionic crystal systems and analyze their structural features.<br>• To explain the crystal growth methods.<br>• To understand the various types of defects in crystals |
| PHARMACEUTICAL CHEMISTRY | • To identify the suitable drugs for various diseases.<br>• To apply the principles of various drug action and drug design.<br>• To acquire the knowledge on product development based on SAR.<br>• To apply the knowledge on applications of computers in chemistry.<br>• To synthesize new drugs after understanding the concepts SAR. |
| NANO MATERIALS AND NANO TECHNOLOGY | • To explain methods of fabricating nanostructures.<br>• To relate the unique properties of nanomaterials to reduce dimensionality of the material.<br>• To describe tools for properties of nanostructures.<br>• To discuss applications of nanomaterials.<br>• To understand the health and safety related to nanomaterial. |

| | |
|---|---|
| ELECTROCHEMISTRY | • To understand the behaviour of electrolytes in solution and compare the structures of electrical double layer of different models.<br>• To predict the kinetics of electrode reactions applying Butler-Volmer and Tafel equations<br>• To study the mechanism of multi- step electrode reactions.<br>• To discuss the theories of electrolytes, electrical double layer, electronics and activity coefficient of electrolytes<br>• To have knowledge on storage devices and electrochemical reaction mechanism. |
| MOLECULAR SPECTROSCOPY | • To understand the importance of rotational and Raman spectroscopy.<br>• To apply the vibrational spectroscopic techniques to diatomic and polyatomic molecules.<br>• To evaluate different electronic spectra of simple molecules using electronic spectroscopy.<br>• To outline the NMR, 13C NMR, 2D NMR – COSY, NOESY, Introduction to 31P, 19F NMR and ESR spectroscopic techniques.<br>• To develop the knowledge on principle, instrumentation and structural elucidation of simple molecules using Mass Spectrometry, EPR and Mossbauer Spectroscopy techniques. |
| ORGANIC CHEMISTRY PRACTICAL - I | • Explain the basic separation procedures of organic mixtures.<br>• Select the separation methods to separate the organic mixtures.<br>• Classify the functional groups using systematic procedure.<br>• Determine the physical properties of organic compounds<br>• Develop skills to isolate natural products from plants. |
| PHYSICAL CHEMISTRY PRACTICAL - I | • Explain the principles of conductometric titrations and estimate the strength of solutions.<br>• Explain the basic principles of thermometry and determine the heat of solution as well as the amount of solute present in the solution.<br>• Determine the solubility product of sparingly soluble salts using conductometric technique. |
| **SEMESTER II** | |
| ORGANIC REACTION MECHANISM - II | • To recall the basic principles of chemical reactions.<br>• To understand the mechanism of various types of organic reactions.<br>• To predict the suitable reagents for the conversion of selective organic compounds.<br>• To correlate the principles of substitution, elimination, and addition reactions. |

| | |
|---|---|
| | • To design new routes to synthesis organic compounds |
| PHYSICAL CHEMISTRY-I | • To explain the classical and statistical concepts of thermodynamics.<br>• To compare and correlate the thermodynamic concepts to study the kinetics of chemical reactions.<br>• To discuss the various thermodynamic and kinetic determination.<br>• To evaluate the thermodynamic methods for real gases ad mixtures.<br>• To compare the theories of reactions rates and fast reactions. |
| GREEN CHEMISTRY | • To recall the basic chemical techniques used in conventional industrial preparations and in green innovations.<br>• To understand the various techniques used in chemical industries and in laboratory.<br>• To compare the advantages of organic reactions assisted by renewable energy sources and non-renewable energy sources.<br>• To apply the principles of PTC, ionic liquid, microwave and ultrasonic assisted organic synthesis.<br>• To design and synthesize new organic compounds by green methods. |
| BIO INORGANIC CHEMISTRY | • To analyze trace elements.<br>• To explain the biological redox systems.<br>• To gain skill in analyzing the toxicity in metals.<br>• To get experience in diagnosis.<br>• To explain nitrogen fixation and photosynthetic mechanism. |
| MEDICINAL CHEMISTRY | • Categorize the drug delivery system and gain knowledge on molecular docking.<br>• Acquire knowledge about structure activity relationship of drugs.<br>• Explain the structure and functions of antiseptics, antibiotics and differentiate bacterial and fungal cell walls.<br>• Illustrate the synthesis and mode of actions of some important drugs.<br>• Create certain developments in cancer chemotherapy and cardiovascular drugs. |
| MATERIAL SCIENCE | • To understand and recall the synthesis and characteristics of crystal structures, semiconductors, magnets and renewable energy materials.<br>• To integrate and assess the structure of different materials and their properties. |

| | |
|---|---|
| | • To analyse and identify new materials for energy applications.<br>• To explain the importance of crystal structures, piezoelectric and pyroelectric materials, nanomaterials, hard and soft magnets, superconductors, solar cells, electrodes, LED uses, structures and synthesis.<br>• To design and develop new materials with improved property for energy applications. |
| INDUSTRIAL CHEMISTRY | • To understand the constituents, classification, properties and applications of paints.<br>• To exemplify the manufacture of cement and ceramics.<br>• To know the composition of cementing materials, process of setting and hardening of cement.<br>• To understand the types of petroleum products and their applications.<br>• To Illustrate various methods for treatment of waste. |
| ORGANIC CHEMISTRY PRACTICAL - II | • Develop the skills to estimate organic compounds<br>• Estimate the amount of organic compound using quantitative organic estimation methods<br>• Illustrate various organic reactions and their utility in organic preparations.<br>• Acquire the skills to isolate useful compounds from natural sources<br>• Determine the physical properties of organic compounds |
| INORGANIC CHEMISTRY PRACTICAL - II | • Describe the principles, techniques and skills related to quantitative determination of ions in a mixture by complexometric titration.<br>• Estimate one metal ion in presence of another metal ion by complexometric method.<br>• Estimate the amounts of components present in Solder alloy.<br>• Prepare and analyze the Inorganic complexes and estimate them by volumetric methods.<br>• Describe the basic principle of calorimetry and apply it for the estimation of ions present in solution. |
| PHYSICAL CHEMISTRY PRACTICAL - II | • Explain the basic principles of conductometric titrations and determine the Dissociation constant of weak acids.<br>• Illustrate the principles of distribution law and estimate the distribution of solute in two immiscible solvents.<br>• Outline the basic principles of thermometry and determine the solution enthalpy of solute in solvent. |
| **SEMESTER III** | |
| ORGANIC | • Describe the basic principles of UV, IR, ORD and CD, and |

| | |
|---|---|
| SPECTROSCOPY AND REARRANGEMENTS | the applications of UV-Visible spectroscopy, IR spectroscopy, ORD and CD in structural elucidation of organic compounds.<br>• CO2 Interpret the 1H NMR and 13C NMR spectral data to elucidate the structure of organic compounds.<br>• Explain the fragmentation pattern in Mass spectrometry and use them in structural elucidation.<br>• Interpret the 2D NMR spectrum and solve structure related problems<br>• Illustrate the types and mechanisms of the prescribed rearrangement reactions and their applications in Organic synthesis. |
| SPECTRAL METHODS-I, ORGANO METALLIC AND ANALYTICAL METHODS | • Describe the principles and applications of electronic and photo electronic spectroscopic techniques in coordination compounds.<br>• Determine absolute configuration of chelate complexes by applying ORD and CD.<br>• Recall the EAN rule and explain the 18 & 16 electron rules to determine the stability of complexes.<br>• Classify terminal and bridging carbonyl groups in metal carbonyls using IR spectra.<br>• Categorize the different types of organometallic catalysts and explain their applications.<br>• Describe the principles and applications of thermo analytical techniques and determine the stability of complexes. |
| GROUP THEORY AND CHEMICAL THERMODYNAMICS | • Explain the basic concepts of group theory and construct character tables for various point groups.<br>• Analyze the symmetry of molecules and apply the group theory into spectroscopy and hybridizations.<br>• Illustrate the relationship between group theory and quantum mechanics.<br>• Summarize the concepts of statistical thermodynamics and the interlinking between the quantum mechanics and thermodynamics.<br>• Explain the irreversible thermodynamic processes and apply to biological and non-linear systems. |
| SCIENTIFIC RESEARCH METHODOLOGY | • Select research problem and various funding agencies.<br>• Write the research report and make effective presentations.<br>• Apply software for identifying plagiarism.<br>• Describe the forms of IPR and its significance.<br>• Describe the surface probe microscopic techniques to analyze the sample surfaces. |
| ORGANIC CHEMISTRY PRACTICAL - III | • Estimate the amount of organic compounds using quantitative organic estimation methods<br>• Develop the skills to handle corrosive and toxic chemicals in |

| | |
|---|---|
| | organic preparations.<br>• Categorize organic reactions and their mechanisms relevant to organic preparations.<br>• Carry out microscale organic preparations<br>• Determine the physical properties of organic compounds |
| INORGANIC CHEMISTRY PRACTICAL - III | • Describe the concept of volumetric and Gravimetric analysis.<br>• Explain the principles for volumetric and gravimetric methods of estimation of cations present in a mixture.<br>• Separate and estimate mixture of metal ions quantitatively.<br>• Analyze and estimate the contents of Ores and Alloys. |
| PHYSICAL CHEMISTRY PRACTICAL - III | • Explain the principles of potentiometric titrations and apply for various reactions such as neutralization, redox and precipitation reactions.<br>• Determine the Dissociation constant of weak acids, pH of buffer and solubility product of sparingly soluble salts potentiometrically.<br>• Describe the principles of chemical kinetics and study the kinetics of a system.<br>• Illustrate the principles of adsorption process and carry out experiments to find out whether a particular adsorption process is Freundlich or Langmuir Adsorption isotherm. |
| **SEMESTER IV** | |
| SYNTHETIC STRATEGIES IN ORGANIC CHEMISTRY | • Illustrate the prescribed organic name reactions with their mechanisms and apply in organic synthesis.<br>• Design organic synthetic steps employing disconnection approach in the synthesis of drugs, natural products etc.<br>• Identify suitable reagent for important organic reactions and building appropriate bonds.<br>• Explain the structural elucidation of cholesterol and various synthetic approaches of steroids in Natural Products synthesis.<br>• Infer the structural elucidation and the synthesis of vitamins and terpenoids |
| BIOINORGANIC, SPECTRAL METHODS-II AND PHOTOCHEMISTRY | • Describe the role of metalloporphrins and metalloenzymes in various biological processes.<br>• Apply metal complexes as drugs and probes of nucleic acids<br>• Explain the applications of Mossbauer, NMR and EPR Spectroscopy in inorganic compounds and interpret the data.<br>• Explain the photophysical and photochemical properties of metal complexes<br>• Develop photochemical conversion, storage of solar energy and green photocatalyst. |
| CHEMICAL KINETICS, PHOTOCHEMISTRY AND | • Explain kinetic theory of gases and phase rule and its applications.<br>• Describe the concepts of chemical kinetics and make use of it |

| | |
|---|---|
| SURFACE CHEMISTRY | in understanding reaction mechanisms.<br>• Illustrate various photochemical processes and experimental techniques in photochemistry.<br>• Explain the basic ideas of radiation chemistry and its applications.<br>• Describe the concepts of Adsorption processes and catalysis. |
| SELECTED TOPICS IN CHEMISTRY | • Describe the importance and applications of Computational Chemistry methods.<br>• Be competent in separation and purification techniques.<br>• Explain the corrosion monitoring methods and application of corrosion inhibitors.<br>• Develop various types of sensors.<br>• Choose contrasting agents in medical diagnosis. |
| COMPUTATIONAL SOFTWARE IN CHEMISTRY - LABORATORY COURSE | • Use chemical software for drawing chemical structures, reaction schemes and generation of their names.<br>• Perform molecular docking in structural molecular biology and computer assisted drug design which enhance their employability in academia and industry.<br>• Calculate the single point energy, energy gap, dipole moment, resonance energy, equilibrium constant, electrophilicity index, dimerisation energy etc.<br>• Interpret spectral data (UV, IR, NMR spectrum)<br>• Investigate intermolecular interactions and packing in crystalline materials using Hirshfeld surface analysis. |
| PROJECT | • Identify research problem, carry out literature survey and use of different experimental/spectroscopic techniques.<br>• Develop interdisciplinary solutions to a variety of chemical problems.<br>• Communicate research findings efficiently in written (report) and verbal (viva-voce) forms.<br>• Use terminology appropriate to the field of study correctly and contextually.<br>• Motivate themselves and acquire basic knowledge for carrying out research work. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153

DEPARTMENT OF CHEMISTRY
NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI
629153

Head
Department of Chemistry
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

**NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE, KALIYAKKAVILAI**

**DEPARTMENT OF COMPUTER SCIENCE**

**ACADEMIC YEAR 2023-2024**

# PROGRAM OUTCOME (B.Sc COMPUTER SCIENCE)

| | |
|---|---|
| **Program Outcome** | ➢ Be aware of the history of the discipline of latest technology and understand the conceptual underpinnings of the subject<br>➢ Illustrate the nature of the software development process , including the need to provide appropriate documentation<br>➢ Be able to develop program in one or two programming languages<br>➢ Be able to analyze a technique for a specific problem to meet a particular objective.<br>➢ Compare the basic theory of computer architectures , including computer hardware and networking<br>➢ Construct new information technology applicable to the society, business and the individual , both from a technical and from an ethical and legal point of view |
| **Program Specific Outcome** | ➢ Define Fundamental principles and methods of Computer Science to a wide range of applications.<br>➢ Demonstrate and document solutions to significant computational problems<br>➢ Apply design ,programming skills and develop principles in the construction of software systems<br>➢ Decide for continued professional Development<br>➢ Design new technologies in web development |

# COURSE OUTCOME

| Course | Outcome |
|---|---|
| **B.Sc Computer Science** | |
| **I Semester** | |
| **PYTHON PROGRAMMING** | ✓ To make students understand the concepts of Python programming.<br>✓ To apply the OOPs concept in PYTHON programming.<br>✓ To impart knowledge on demand and supply concepts<br>✓ To make the students learn best practices in PYTHON programming |
| **PROGRAMMING IN PYTHON LAB** | ✓ To define the features of PYTHON by applying sample problems<br>✓ To explore skills in implementing algorithms through the programming Language PYTHON |

| | |
|---|---|
| | ✓ To develop array of elements<br>✓ To evaluate matrices<br>✓ To develop the programs using pointers and functions |
| **DISCRETE MATHEMATICS** | ✓ To Know how to solve various problems on discrete mathematics<br>✓ Use approximation to solve problems<br>✓ Differentiation and integration concept are applied<br>✓ Apply , direct methods for solving linear systems<br>✓ Discrete solution of ordinary problems |
| **OFFICE AUTOMATION** | ✓ Understand the basics of computer system and its components.<br>✓ Understand and apply the basic concepts of word processing package.<br>✓ Understand and apply the basic concepts of electronic spreadsheet software.<br>✓ Understand and apply the basic concepts of database management system.<br>✓ Understand and create a presentation using PowerPoint tool. |
| **II SEMESTER** | |
| **DATA STRUCTURE AND ALGORITHMS** | ✓ On completion of this course, students will<br>✓ Understand the concept of Dynamic memory management, data types, algorithms, Big O notation<br>✓ Understand basic data structures such as arrays, linked lists, stacks and queues<br>✓ Describe the hash function and concepts of collision and its resolution methods<br>✓ Solve problem involving graphs, trees and heaps<br>✓ Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data |
| **DATA STRUCTURE AND ALGORITHMS LAB** | ✓ To understand the concepts of ADTs<br>✓ To learn linear data structures-lists, stacks, queues<br>✓ To learn Tree structures and application of trees<br>✓ To learn graph structures and application of graphs.<br>✓ To understand various sorting and searching |
| **WEB DESIGN** | ✓ To understand the concepts of links |

| | |
|---|---|
| | ✓ To learn tags, lists<br>✓ To learn frames and its applications<br>✓ To apply forms and to create pages<br>✓ To apply sound effect |
| **DIGITAL LOGIC FUNDAMENTALS** | ✓ Understand the concept of various number systems<br>✓ Understand basic concepts of digital systems<br>✓ Describe the storage structures<br>✓ Solve problems<br>✓ Apply concepts for simplifications |
| **INTRODUCTION TO HTML** | ✓ Understand the concept of various tags<br>✓ Understand basic designing<br>✓ Describe the hash function and concepts of tables, designing etc<br>✓ Solve problem involving style sheets<br>✓ Apply the attributes in designing web pages |
| **III SEMESTER** | |
| **JAVA PROGRAMMING** | ✓ To recall the basic concepts of Object Oriented Programming<br>✓ To apply the tools of Object – Oriented Paradigm in Java programming<br>✓ To understand the fundamentals of applet, event – driven programming<br>✓ To analyze the ability to develop Applet programs with tools of Java<br>✓ To design the skills to develop software |
| **JAVA PROGRAMMING LAB** | ✓ Illustrate and make effective use of Java Programming to develop software<br>✓ Develop Java application programs using OOP principles.<br>✓ Apply Constructors and Overriding methods<br>✓ Develop Multithreaded programs<br>✓ To implement error handling techniques using exception handling |
| **SCRIPTING LANGUAGE** | ✓ To understand the basic concepts of HTML and web programming.<br>✓ To Demonstrate the concepts of scripting languages for developing web-based projects<br>✓ Ability to compare the differences between Scripting languages and programming languages<br>✓ To understand CSS files HTML Multimedia. |

| | |
|---|---|
| | ✓ Ability to develop projects using HTML and Web pages |
| **SCRIPTING LANGUAGE LAB** | ✓ To develop knowledge in web-based projects<br>✓ To demonstrate programming skills in scripting languages.<br>✓ To construct the skill of designing GUI in scripting languages<br>✓ To categorize CSS files<br>✓ To design JavaScript programs |
| **DIGITAL DESIGN** | ✓ To recall the concept of digital systems, to operate on various number systems and simplify Boolean functions and to distinguish logical and combinational circuits.<br>✓ Illustrate the concept of digital and binary systems<br>✓ Be able to develop combinational logic circuits.<br>✓ Be able to design and analyze sequential logic circuits.<br>✓ Construct and implementation of digital circuits and systems. |
| | ✓ Interpret simplification and find averages<br>✓ Determine ratio and proportion<br>✓ Assess partnership and solve percentage problems<br>✓ Distinguish profit and loss<br>✓ Solve problem of numbers |
| **IV SEMESTER** | |
| **DATA STRUCTURES** | ✓ To understand the concepts of basic data structures.<br>✓ To acquire the knowledge about stack, Queues and Linked list.<br>✓ To have general understanding of the network structures through trees and graph.<br>✓ To make the students to understand the basic algorithms for sorting.<br>✓ Define data structure Algorithms |
| **DATA STRUCTURES LAB** | ✓ To develop skills in implementing sort and search data structure algorithms<br>✓ To implement queue and stack technique<br>✓ To design tree traversals<br>✓ To implement binary search tree<br>✓ To Compile sorting algorithms |
| **MACHINE LEARNING TECHNIQUES** | ✓ To introduce students to the basic concepts of Machine Learning.<br>✓ To acquire various techniques in Machine learning.<br>✓ To have a thorough understanding of the Supervised and |

| | |
|---|---|
| | Unsupervised learning techniques<br>✓ To study the probability based learning techniques<br>✓ To understand graphical models of machine learning algorithms |
| **PYTHON LAB** | ✓ To understand the basic concepts in python<br>✓ To understand the concepts and develop python programs<br>✓ To acquire the knowledge about menu driven programs<br>✓ To improve the knowledge in CSV files<br>✓ To understand the functions of python |
| **COMPUTER ARCHITECTURE** | ✓ Understand the basics of Computers and its Organization<br>✓ Know the various Technologies behind the Computer Architecture<br>✓ An ability to apply knowledge about hardware implementation and algorithms<br>✓ To evaluate various input output organizations<br>✓ To develop the architecture using various memories |
| **NME-HUMAN RIGHTS** | ✓ Analyze and solve the problems based on Human Rights<br>✓ Apply short tricks on solving problems<br>✓ Making use of the concept of time and distance while solving problems.<br>✓ Utilize chain Rule<br>✓ Find solutions for pipes and Cistern problem |
| **V SEMESTER** | |
| **RELATIONAL DATABASE MANAGEMENT SYSTEM** | ✓ To understand relational database concepts and transaction management concepts in database system.<br>✓ To write SQL programs that use: procedure, function, package, cursor and Exceptions.<br>✓ To Use current techniques and tools necessary for complex computing practices. |
| **DATA COMMUNICATION AND COMPUTER NETWORKS** | ✓ To understand the concepts in Computer Network and Data Communication<br>✓ To know about the various protocols used in network |
| **PHP and mySQL** | ✓ To learn and use open source database management |

| | |
|---|---|
| | system MySQL<br>✓ To create dynamic web pages and websites.<br>✓ To connect web pages with database.<br>✓ To understand the concepts of open sources. |
| **PHP and mySQL Lab** | ✓ To develop knowledge about basic PHP Programs. |
| **CLOUD COMPUTING** | ✓ To know in detail about the various Cloud Computing concepts |
| **OPERATING SYSTEM** | ✓ To acquire the fundamental knowledge of the operating system architecture and components and to know the various operations performed by the operating system.<br>✓ Understand the basic working process of an operating system.<br>✓ Understand the importance of process and scheduling.<br>✓ Understand the issues in synchronization and memory management. |
| **SOFTWARE ENGINEERING AND TESTING** | ✓ To acquire the fundamental knowledge of Software Engineering and to know the various testing performed |
| **COMPUTER GRAPHICS AND VISUALIZATION** | ✓ To acquire the fundamental knowledge of Computer Graphics and Visualization.<br>✓ To understand the Algorithms in Computer Graphics |
| **INTRODUCTION TO DIGITAL IMAGE PROCESSING** | ✓ To acquire the fundamental knowledge of introduction to Digital Image Processing.<br>✓ To understand the features present in Digital Image Processing |
| **COMPUTER GRAPHICS LAB** | ✓ To acquire skills in programming computer graphics<br>✓ To acquire skills in multimedia concepts |
| **DIGITAL IMAGE PROCESSING USING SCILAB / MatLab** | ✓ To get knowledge about the basic programs on Digital Image Processing |
| **INTERNET OF THINGS** | ✓ To give a brief idea about IOT working<br>✓ To make the students understand the Architecture of IOT |

## PROGRAM OUTCOME (M.Sc COMPUTER SCIENCE)

| Program Outcome | |
|---|---|
| | ➢ Apply their knowledge of computing to evaluate, analyze, synthesize, model and integrate technologies to develop new computerized solution for the industrial and social problem<br>➢ Work upon unfamiliar problems through investigative studies and research and contribute to the development of technological knowledge and towards new intellectual property.<br>➢ Comprehend and make effective technical reports and presentations on software / Hardware related issues.<br>➢ Communicate effectively, as a member or team leader, in software projects involving multidisciplinary environments.<br>➢ Learn reflectively from mistakes, engage in lifelong learning, adapt new developments and participate in continuing education opportunities to foster personal and organizational growth.<br>➢ Understand contemporary issues in providing technological solutions for sustainable development considering impact on economic, social, political, and global issues and thereby contribute to the welfare of the society.<br>➢ Demonstrate integrity, ethical behavior and commitment to code of conduct of professional practices and standards. |

## COURSE OUTCOME (M.Sc COMPUTER SCIENCE)

| Course | Outcome |
|---|---|
| **M.Sc Computer Science** | |
| **I SEMESTER** | |
| **ANALYSIS & DESIGN OF ALGORITHMS** | ➢ Demonstrate specific search and sort algorithms using divide and conquer technique.<br>➢ Gain good understanding of Greedy method and its algorithm.<br>➢ Able to describe about graphs using dynamic programming technique.<br>➢ Demonstrate the concept of backtracking & branch and |

| | |
|---|---|
| | bound technique.<br>➢ Explore the traversal and searching technique and apply it for trees and graphs |
| **OBJECT ORIENTED ANALYSIS AND DESIGN & C++** | ➢ Understand the concept of Object-Oriented development and modeling techniques<br>➢ Gain knowledge about the various steps performed during object design<br>➢ Abstract object -based views for generic software systems<br>➢ Link OOAD with C++ language<br>➢ Apply the basic concept of OOPs and familiarize to write C++ program |
| **PYTHON PROGRAMMING** | ➢ Understand the basic concepts of Python Programming<br>➢ Understand File operations, Classes and Objects<br>➢ Acquire Object Oriented Skills in Python<br>➢ Develop web applications using Python<br>➢ Develop Client Server Networking applications |
| **ALGORITHM AND OOPS LAB** | ➢ Understand the concepts of object oriented with respect to C++<br>➢ Able to understand and implement OOPS concepts<br>➢ Implementation of data structures like Stack, Queue, Tree, List using C++<br>➢ Application of the data structures for Sorting, Searching using different techniques. |
| **PYTHON PROGRAMMING LAB** | ➢ Able to write programs in Python using OOPS concepts<br>➢ To understand the concepts of File operations and Modules in Python<br>➢ Implementation of lists, dictionaries, sets and tuples as programs<br>➢ To develop web applications using Python |
| **EFFECTIVE COMMUNICATION IN ENGLISH** | ➢ To help the students develop communication skills and self confidence<br>➢ To motivate the students to acquire employability skills<br>➢ To introduce various interview techniques to the students<br>➢ To motivate the students to becomes good public speakers<br>➢ To develop leadership qualities in the students<br>➢ To guide the students how to tackle interviews<br>➢ To help the students to enhance their writing skills |

| | |
|---|---|
| | ➢ To teach the students how to write a good CV<br>➢ To introduce various articles in writing to the students |
| **ADVANCED SOFTWARE ENGINEERING** | ➢ Understand about Software Engineering process<br>➢ Understand about Software project management skills, design and quality management<br>➢ Analyze on Software Requirements and Specification<br>➢ Analyze on Software Testing, Maintenance and Software Re-Engineering<br>➢ Design and conduct various types and levels of software quality for a software project |
| **ADVANCED COMPUTER NETWORKS** | ➢ Understand fundamental underlying principles of computer networking<br>➢ Understand details and functionality of layered network architecture.<br>➢ Apply mathematical foundations to solve computational problems in computer networking<br>➢ Analyze and evaluate performance of various communication protocols.<br>➢ Compare and create new routing algorithms |
| **II SEMESTER** | |
| **DATA MINING AND WAREHOUSING** | ➢ Understand the basic data mining techniques and algorithms<br>➢ Understand the Association rules ,Clustering techniques and Data warehousing contents<br>➢ Compare and evaluate different data mining techniques like classification, prediction, Clustering and association rule mining<br>➢ Design data warehouse with dimensional modeling and apply OLAP operations<br>➢ Identify appropriate data mining algorithms to solve real world problems |
| **ADVANCED OPERATING SYSTEMS** | ➢ Understand the design issues associated with operating systems<br>➢ Master various process management concepts including scheduling, deadlocks and distributed file systems<br>➢ Prepare Real Time Task Scheduling<br>➢ Analyze Operating Systems for Handheld Systems<br>➢ Analyze Operating Systems like LINUX and IOS. |
| **ADVANCED JAVA PROGRAMMING** | ➢ Understand the advanced concepts of Java Programming |

| | |
|---|---|
| | ➢ Understand JDBC and RMI concept<br>➢ Apply and analyze Java in Database<br>➢ Handle different event in java using the delegation event model, event listener and class<br>➢ Design interactive applications using Java Servlet, JSP and JDBC |
| **DATA MINING USING R** | ➢ Able to write programs using R for Association rules , Clustering technique<br>➢ To implement data mining techniques like classification, prediction<br>➢ Able to use different visualization techniques using R<br>➢ To apply different data mining algorithm s to solve real world applications |
| **ADVANCED JAVA LAB** | ➢ Understand to the implement concepts of Java using HTML forms ,JSP & JAR<br>➢ Must be capable of implementing JDBC and RMI concepts<br>➢ Able to write Applets with Event handling mechanism<br>➢ To Create interactive web based applications using servlets and jsp |
| **ENGLISH FOR COMPETITIVE EXAMS** | ➢ To help the students prepare for competitive exams To enable the students to learn the techniques to ace the tests<br>➢ To enable the students to learn English grammar<br>➢ To enhance the students' reading skills<br>➢ To teach the students how to answer comprehension questions<br>➢ To focus on vocabulary and its importance<br>➢ To guide the students about IELT exams<br>➢ To discuss various components of vocabulary<br>➢ To introduce a variety of reading passages to the students |
| **ARTIFICIAL INTELLIGENCE & MACHINE LEARNING** | ➢ Demonstrate AI problems and techniques<br>➢ Understand machine learning concepts<br>➢ Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning<br>➢ Analyze the impact of machine learning on applications<br>➢ Analyze and design are all world problem for implementation and understand the dynamic behavior of |

| | |
|---|---|
| | a system |
| **INTERNET OF THINGS** | ➢ Understand about IoT, its Architecture and its Applications<br>➢ Comprehend the IoT evolution with its architecture and sensors<br>➢ Assess the embedded technologies and develop prototypes for the IoT products<br>➢ Evaluate the use of Application Programming Interface and design an API for IoT in real-time<br>➢ Design IoT in real time applications using today's internet & wireless Technologies |
| **MULTIMEDIA AND ITS APPLICATIONS** | ➢ Understand the basic concepts of Multimedia<br>➢ Demonstrate Multimedia authoring tools<br>➢ Analyze the concepts of Sound, Images, Video & Animation<br>➢ Apply and Analyze the role of Multimedia in Internet and real time applications<br>➢ Analyze multimedia applications using HDTV |
| **EMBEDDED SYSTEMS** | ➢ Understand the concept of 8051 microcontroller<br>➢ Understand the Instruction Set and Programming<br>➢ Analyze the concepts of RTOS<br>➢ Analyze and design various real time embedded systems using RTOS<br>➢ Debug the malfunctioning system using various debugging techniques |
| **CRITICAL THINKING, DESIGN THINKING AND PROBLEM SOLVING** | ➢ Understand the concepts of Critical thinking and its related technology<br>➢ Focus on the explicit development to critical thinking and problem solving skills<br>➢ Apply design thinking in problems<br>➢ Decide and take actions based on analysis<br>➢ Analyze the concepts of Thinking patterns, Problem solving & Reasoning in real time applications |
| **MOBILE COMPUTING** | ➢ Understand the need and requirements of mobile communication<br>➢ Focus on mobile computing applications and techniques<br>➢ Demonstrate satellite communication in mobile computing<br>➢ Analyze about wireless local loop architecture |

| | |
|---|---|
| | ➢ Analyze various mobile communication technologies |
| **BLOCKCHAIN TECHNOLOGY** | ➢ Demonstrate block chain technology and crypto currency<br>➢ Understand the mining mechanism in block chain<br>➢ Apply and identify security measures, and various types of services that allow people to trade and transact with bit coins<br>➢ Apply and analyze Block chain in healthcare industry<br>➢ Analyze security, privacy, and efficiency of a given Block chain system |
| **WEB SERVICES** | ➢ Understand web services and its related technologies<br>➢ Understand XML concepts<br>➢ Analyze on SOAP and UDDI model<br>➢ Demonstrate the road map for the standards and future of web services<br>➢ Analyze QoS enabled applications in web services |
| **ROBOTIC PROCESS AUTOMATION FOR BUSINESS** | ➢ Demonstrate the benefits and ethics of RPA<br>➢ Understand the Automation cycle and its techniques<br>➢ Draw inferences and information processing of RPA<br>➢ Implement & Apply RPA in Business Scenarios<br>➢ Analyze on Robots & leveraging automation |
| **III SEMESTER** | |
| **DIGITAL IMAGE PROCESSING** | ➢ Review the fundamental concepts of a digital image processing system and Analyze images in the frequency domain using various transforms.<br>➢ Evaluate the techniques for image enhancement and image restoration.<br>➢ Categorize various compression techniques.<br>➢ Interpret Image compression standards, and Interpret image segmentation and representation techniques.<br>➢ Gain idea to process various image used in various fields such as weather forecasting,Diagnosis of various disease using image such as tumor, cancer etc. |
| **SOFT COMPUTING** | ➢ Comprehend the fuzzy logic and the concept of fuzziness involved in various systems and fuzzy set theory.<br>➢ Understand the concepts of fuzzy sets, knowledge representation using fuzzy rules, approximate reasoning, fuzzy inference systems, and fuzzy logic |

| | |
|---|---|
| | ➢ To understand the fundamental theory and concepts of neural networks, Identify different neural network architectures, algorithms, applications and their limitations.<br>➢ Understand appropriate learning rules for each of the architectures and learn several neural network paradigms and its applications. Reveal different applications of these models to solve engineering and other problems. |
| **INTERNET OF THINGS** | ➢ Gain the basic knowledge about IoT and they will be able to use IoT related products in real life.<br>➢ It helps to rely less on physical resources and started to do their work smarter |
| **ADVANCED COMPUTER NETWORKS** | ➢ To master the terminology and concepts of the OSI reference model and the TCP-IP reference model.<br>➢ To master the concepts of protocols, network interfaces, and design/performance issues in local area networks and wide area networks.<br>➢ To be familiar with wireless networking concepts, and be familiar with contemporary issues in networking technologies.<br>➢ To be familiar with network tools and network programming |
| **RESEARCH METHODOLOGY** | ➢ Ability to apply different research approaches and methodologies<br>➢ Develop data collection instrument according to the underlying theoretical framework.<br>➢ Analyze quantitative data and qualitative data using software packages<br>➢ Construct and document an appropriate research design<br>➢ Discuss limitations and potential contribution to theory and practice of research<br>➢ Effectively apply the appropriate computer tools in each stage of research<br>➢ Ability to perform ICT based Teaching Methods |
| **CLOUD COMPUTING** | ➢ Articulate the main concepts, key technologies, |

| | |
|---|---|
| | strengths and limitations of cloud computing.<br>➢ Learn the key and enabling technologies that help in the development of cloud.<br>➢ Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models.<br>➢ Explain the core issues of cloud computing such as resource management and security.<br>➢ Be able to install and use current cloud technologies.<br>➢ Evaluate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud. |
| **MOBILE COMPUTING** | ➢ Explore the concepts of new technologies in wireless networks.<br>➢ Demonstrate various protocols of wireless and cellular networks.<br>➢ Discuss the features of different wireless networks. |
| **OPTIMIZATION TECHNIQUES** | ➢ Get an insight about linear programming concepts<br>➢ Able to get knowledge about network concepts<br>➢ Able to have knowledge about simulation concepts |
| **DIGITAL IMAGE PROCESSING LAB USING SCILAB** | ➢ Review the fundamental concepts of a digital image processing system and Analyze images in the frequency domain using various transforms.<br>➢ Evaluate the techniques for image enhancement and image restoration. Categorize various compression techniques.<br>➢ Interpret Image compression standards, and Interpret image segmentation and representation techniques.<br>➢ Gain idea to process various image used in various fields such as weather forecasting, Diagnosis of various disease using image such as tumor, cancer etc |

| | |
|---|---|
| | each stage of research<br>➢ Ability to perform ICT based Teaching Methods |
| **CLOUD COMPUTING** | ➢ Articulate the main concepts, key technologies, strengths and limitations of cloud computing.<br>➢ Learn the key and enabling technologies that help in the development of cloud.<br>➢ Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models.<br>➢ Explain the core issues of cloud computing such as resource management and security.<br>➢ Be able to install and use current cloud technologies.<br>➢ Evaluate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud. |
| **MOBILE COMPUTING** | ➢ Explore the concepts of new technologies in wireless networks.<br>➢ Demonstrate various protocols of wireless and cellular networks.<br>➢ Discuss the features of different wireless networks. |
| **OPTIMIZATION TECHNIQUES** | ➢ Get an insight about linear programming concepts<br>➢ Able to get knowledge about network concepts<br>➢ Able to have knowledge about simulation concepts |
| **DIGITAL IMAGE PROCESSING LAB USING SCILAB** | ➢ Review the fundamental concepts of a digital image processing system and Analyze images in the frequency domain using various transforms.<br>➢ Evaluate the techniques for image enhancement and image restoration. Categorize various compression techniques.<br>➢ Interpret Image compression standards, and Interpret image segmentation and representation techniques.<br>➢ Gain idea to process various image used in various fields such as weather forecasting, Diagnosis of various disease using image such as tumor, cancer etc. |

Head, Department of Computer Science
Nanjil Catholic College of Arts & Science
Nedumcode, Kaliyakkavilai - 629 153

Kaliyakkavi 629 153

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE

KALIYAKKAVILAI

DEPARTMENT OF ZOOLOGY

# PROGRAMME OUTCOME and COURSE OUTCOME

# 2023-2024

# NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE
# KALIYAKKAVIAI.

## DEPARTMENT OF ZOOLOGY

| | |
|---|---|
| **PROGRAMME OUTCOMES:** | **PO1: DISCIPLINARY KNOWLWDGE :** Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that forms a part of an undergraduate Programme of study.<br>**PO2: COMMUNICATION SKILL:** Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully , read and write analytically, and present complex information in a clear and concise manner to different groups.<br>**Po3: CRITICAL THINKING:** Capability to apply analytic thoughts to a body of knowledge; analyze and evaluate evidences, arguments, claims, beliefs on the basis of empirical evidences, identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. |
| **PROGRAMME SPECIFIC OUTCOMES:** | **PSO1- PLACEMENT:**<br>To prepare the students who will demonstrate respectful engagement with others ideas, behaviors, beliefs and apply diverse frames of reference to decision and actions.<br>**PSO2-ENTREPRENEUR:**<br>To create effective entrepreneurs by enhancing their critical thinking, problem solving, decision making and leadership skill that facilitate startups and high potential organizations.<br>**PSO3-RESEARCH AND DEVELOPMENT:**<br>Design and implement HR systems and practices grounded in research that comply with employment laws, leading the organization towards growth and development. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

# Course and Course Outcome

| | |
|---|---|
| I BSc Zoology<br>Semester I | |
| Introduction to zoology | To ease the transition of learning from higher education , providing an overview of the pedagogy of learning abstract Statistics and simulating mathematical concepts to real world.<br>Initial confidence among students.<br>Create interest for the subjects. |
| Ornamental Fish Farming and Management | Industry ready graduates<br>Skilled human resource<br>Students are equipped with essential skills to make them employable |
| Invertebrata | The diver and basic taxonomy of non chordates. Interpret the biological status of the animals at basic level in their habitat |
| I BSc Zoology<br>Semester II | |
| Chordata | Recall the diversity and basic taxonomy of chordates. Understand and examine the biological system and evolution of chordates. Analyse and compare the adaptations and their importance in distribution |
| Biocomposting for Entrepreneurship | Diversity and structures and learn the basic differences between exotic and native species of earthworm and understand the basic of Vermitechniques, |
| Animal Behaviour | The structure, classification and culture techniques ofAnimal. Analyse and distinguish food habitat, culture methods. |
| II BSc Zoology<br>Semester III | |
| Developmental Zoology | Know the developmental process of animals from cellular grade of organization to organ grade of organization |
| Nutrition and Dietetics | The classification and types of nutrition and food stuffs. Understand the nutritive value and metabolism of food materials |

| | |
|---|---|
| II BSc Zoology<br>Semester IV | |
| Cell Biology and Biochemistry | Understand cell, its biology and origin of cells, diversity and structures and learn the basic differences between prokaryotic and eukaryotic and understand the basic of cytological techniques, principle of working and its application of microscope. |
| Vermitechnology | Find out vermicomposting is an eco-friendly, economically and socially acceptable technology. Utilize vermitechnology to improve the soil texture, soil aeration, improve the water retention capacity in the soil . |
| III BSc Zoology<br>Semester V | |
| Ecology | To understand the dynamics various eco system such as marine, fresh water and terrestrial. The interaction and inter dependents among environmental factors and living organisms. |
| Genetics | Analysis the basic principles of Mendelian inheritance and genetic interaction. Construct chromosome map using crossing over. |
| Animal Physiology | Identify the working mechanism of effectors, Homoeostasis and understand how the animals adapt in the environment. List out the physiological processes in the animals. |
| Microbiology and Immunology<br>` | Under the structure, classification and culture techniques of microbes. Analyse and distinguish food poisoning, food spoilage and preservation methods. Describe the different types of lymphoid organs, antigen-antibody reactions. |
| III BSc Zoology<br>Semester VI | |
| Evolution | `Understand the orgin of life and relation |

| | |
|---|---|
| | between abiotic and biotic factors adaptation in the view of evolution. Get thorough knowledge of the tree diagram of the evolution of various animals and patterns of distribution. |
| Animal Biotechnology | Relate the basic principles of recombinant DNA technology. Explain various molecular techniques used in modern biotechnology. |
| Biostatistics, Computer applications and Bioinformatics | Attain an insight on statistical methods for analysis of biological data. Undertake statistical operations in biology. Understand and critically evaluate the data analysis procedures in publication of molecular biology research. |
| Sericluture | Understand the scope sericulture and mulberry cultivation practices. Gain knowledge on diseases of silkworms and pests of mulberry. Understand the classification, life style and physiology of silkworm. |
| Apiculture | Classify the honey bees and categorize its developmental stages and explain the principals of Apiculture and methods of Bee Keeping. Make use of Honey bee products and Marketing. |

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI
629 153
K.K. DISTRICT
TAMILNADU
INDIA

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

Head
Department of Zoology
Nanjil Catholic College of Arts &
Kaliyakkavilai - 629 153. Tamil

# NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE
# KALIYAKKAVILAI-629153

## Department of Physical Education
## (2023-2024)

## Program Specific Outcomes (PSOs)

| | |
|---|---|
| **Program Outcomes** | This would lead the students to understand historical concept of physical education and relationship between Philosophy, Education and Physical Education.<br>The student would further understand the theoretical implications of philosophies of physical education with modern development and social aspects of Physical Education. |
| **Program Outcomes** | 1. To select the in merited talented children for various sports activities.<br>2. To orient children in schools with the fundamental skills of selected sports as per their in merited potential.<br>3. To devise training program for athlete engaged in different ports activities<br>4. To officiate, supervise various sports tournaments and orient the minor games sports events at all levels.<br>5. To be entrepreneur (to start their own fitness centre, gym, spa etc) and device appropriate fitness program for different genders and age groups of people. |

Head
Department of Physical Education
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153

# NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE
# KALIYAKKAVILAI-629153

## Department of Physical Education
## (2023-2024)
## COURSE OUTCOMES

| Course Outcomes | |
|---|---|
| I Bsc Physical Education | |
| I semester | |
| | ➢ To enhance the knowledge of physical education and sports<br>➢ To enhance the knowledge in various types of games and the awards given to each games<br>➢ To enrich with the history of physical education and sports |
| Anatomy and physiology | ➢ To develop the knowledge about human body<br>➢ To know about the different types of system in human body |
| Kinanthropometery | ➢ To enhance the knowledge in different types of sports equipments<br>➢ To enhance the knowledge in BMI and waist circumference |
| Gymnastics | ➢ To develop the knowledge in body weighing exercises<br>➢ To develop the knowledge in importance in gymnastics |

| II Semester | |
|---|---|
| Organisation, administration and methods in physical education | ➢ Develop the knowledge in organising and administrating sports and physical education<br>➢ To enrich the knowledge in budgeting and finance<br>➢ Develop the knowledge in various types of tournaments |
| Health education, safety education and first aid | ➢ Develop the knowledge in Acquire knowledge how to deal with the first aid |
| Principles of motor development | ➢ To enhance the knowledge in the basic movement of the body<br>➢ Develop the knowledge in different types of motor skills |

| **II Bsc Physical Education** | |
|---|---|
| **III Semester** | |
| Methods in physical education | ➢ To enable the learner about the importance of lesson plan<br>➢ To develop the knowledge in different methods in physical education |
| Theories of games | ➢ To develop the knowledge about badminton, ball badminton and tennis<br>➢ To know the skills and rules of badminton, ball badminton and tennis games |
| Principles of sports training | ➢ To develop the knowledge in sports training<br>➢ To enable the learner about the importance of speed, endurance, strength, flexibility and co ordination |

| **IV semester** | |
|---|---|
| Organisation and administration in physical education | ➢ Develop the knowledge in organising and administrating sports and physical education<br>➢ To enrich the knowledge in budgeting and finance |
| Sports psychology and sociology | ➢ To develop the knowledge in importance of sports psychology and sociology<br>➢ To enable the learner about the knowledge regarding persanality, motivation and leadership |
| Sports biomechanics and kinesiology | ➢ To develop the knowledge in moments of muscles<br>➢ To enable learner about the knowledge regarding posture , upper and lower body muscles and kinetics |

| **III Bsc Physical Education** | |
|---|---|
| **V Semester** | |
| Exercise physiology | ➢ The learner will be empowered with the knowledge of physiology in physical activity and sports<br>➢ To acquire the knowledge in cardio respiratory physiology |
| Test, measurements and evaluation in physical education and sports | ➢ The students will be able to learn and implement the criteria of test selection<br>➢ Develop the art of application of test, measurements and evaluation in sports |
| Theories of track and field | ➢ The learner identify and trig out the best sports person<br>➢ To enhance the knowledge in running throwing and jumping through athletic practices |
| Adopted physical education | ➢ To enhance the knowledge in to conduct sports for physically challenged person<br>➢ To enhance the knowledge in requirements of physically challengers |

| VI Semester | |
|---|---|
| Athletic care , sports injuries and rehabilitation | ➢ To understand the prevention treatments, and rehabilitation of athletic injuries<br>➢ Acquire knowledge how to deal with the first aid |
| Theory of games | ➢ To understand the strategic in basketball,cricket,football, hockey and volleyball<br>➢ To acquire practical knowledge in basketball, cricket,football, hockey and volleyball |
| Elementary statistics in physical education | ➢ To acquire knowledge in statics and the terms like data , population and sampling<br>➢ To acquire knowledge in properties of scales and graph |
| Sports journalism | ➢ To acquire knowledge in the basic arts of mass communication<br>➢ To enhance the knowledge reporting sports events |

Head
Department of Physical Education
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

PRINCIPAL
Nanjil Catholic College of Arts & Sc...
Kaliyakkavilai - 629 153

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

# NANJIL CATHOLIC COLLEGE OF ARTS AND SCIENCE

## KALIYAKKAVILAI

## *Department of Business Administration*

# PROGRAMME OUTCOMES

## Academic Year (2023-2024)

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI
629 153
K.K. DISTRICT
TAMILNADU
INDIA

| | |
|---|---|
| **PROGRAMME OUTCOMES (POS)** | **PO1:** Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate Programme of study<br>**PO2:** Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.<br>**PO3:** Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.<br>**PO4:** Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.<br>**PO5:** Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyze and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples, and addressing opposing viewpoints.<br>**PO6:** Research-related skills: A sense of inquiry and |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Business Administration
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

| | |
|---|---|
| | capability for asking relevant/appropriate questions, problem arising, synthesising and articulating; Ability to recognise cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyse, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation<br>**PO7:** Cooperation/Team work: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team<br>**PO8:** Scientific reasoning: Ability to analyse, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective.<br>**PO9:** Reflective thinking: Critical sensibility to lived experiences, with self awareness and reflexivity of both self and society.<br>**PO10:** Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.<br>**PO11:** Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion.<br>**PO12:** Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Business Administration
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu

| | |
|---|---|
| | **PO13:** Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demon starting the ability to identify ethical issues related to one"s work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.<br>**PO14:** Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.<br>**PO15:** Lifelong learning: Ability to acquire knowledge and skills, including „learning how to learn", that are necessary for participating in learning activities throughout life, through self paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/reskilling. |
| **PROGRAMME SPECIFIC OBJECTIVES (PSOS)** | **PSO1:** To enable students to apply basic microeconomic, macroeconomic and monetary concepts and theories in real life and decision making.<br>**PSO2:** To sensitize students to various economic issues related to Development, Growth, International Economics. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Business Administration
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

| | |
|---|---|
| | Sustainable Development and Environment.<br>**PSO3:** To familiarize students to the concepts and theories related to Finance, Investments and Modern Marketing.<br>**PSO4:** Evaluate various social and economic problems in the society and develop answer to the problems as global citizens.<br>**PSO5:** Enhance skills of analytical and critical thinking to analyze effectiveness of economic policies. |

## COURSE OUTCOMES

### I SEMESTER

| | |
|---|---|
| **PRINCIPLES OF MANAGEMENT** | **CO1:** Describe nature, scope, role, levels, functions and approaches of management<br>**CO2:** Apply planning and decision making in management<br>**CO3:** Identify organization structure and various organizing techniques<br>**CO4:** Understand Direction, Co-ordination & Control mechanisms<br>**CO5:** Relate and infer ethical practices of organisation. |
| **ACCOUNTING FOR MANAGEMENT – I** | **CO1:** Prepare Journal, ledger, trial balance and cash book<br>**CO2:** Classify errors and making rectification entries<br>**CO3:** Prepare final accounts with adjustments<br>**CO4:** To understand Hire Purchase system<br>**CO5:** Prepare single and double entry system of accounting |
| **MANAGERIAL ECONOMICS** | **CO1:** Analyze & apply the various managerial economic concepts in individual & business decisions.<br>**CO2:** Explain demand concepts, underlying theories and identify demand forecasting techniques.<br>**CO3:** Employ production, cost and supply analysis for business decision making |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Business Administration
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

| | |
|---|---|
| | **CO4;** Identify pricing strategies<br>**CO5:** Classify market structures under competitive scenarios |
| **BASICS OF EVENT MANAGEMENT** | **CO1:** To understand basics of event management<br>**CO2:** To design events<br>**CO3:** To study feasibility of organising an event<br>**CO4:** To gain Familiarity with marketing & promotion of event<br>**CO5:** To develop event budget |
| **MANAGERIAL COMMUNICATION** | **CO1:** Understand communication process and its barriers.<br>**CO2:** Develop business letters in different scenarios<br>**CO3:** Develop oral communication skills & conducting interviews<br>**CO4:** Use managerial writing for business communication<br>**CO5:** Identify usage of modern communication tools & its significance for managers |
| **II SEMESTER** | |
| **ORGANIZATIONAL BEHAVIOR** | **CO1:** To define Organisational Behaviour, Understand the opportunity through OB.<br>**CO2:** To apply self-awareness, motivation, leadership and learning theories at workplace<br>**CO3:** To analyze the complexities and solutions of group behaviour.<br>**CO4:** To impact and bring positive change in the culture of the organisaiton.<br>**CO5:** To create a congenial climate in the organization. |
| **ACCOUNTING FOR MANAGEMENT – II** | **CO1:** Interpret cost sheet & write comments.<br>**CO2:** Compare cost, management & financial accounting<br>**CO3:** Analyze the various ratio and compare it with standards to assess deviations<br>**CO4:** Estimate budget and use budgetary control |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Business Administration
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

| | |
|---|---|
| | **CO5:** Evaluate marginal costing and its components |
| **BUSINESS REGULATORY FRAME WORK** | **CO1:** Explain Indian Contracts Act<br>**CO2:** Understand Sales of goods act and Contract of Agency<br>**CO3:** Understand Indian Companies Act 1956<br>**CO4:** Understand Consumer Protection Act – RTI<br>**CO5:** Understand Cyber law |
| **MANAGERIAL SKILL DEVELOPMENT** | **CO1:** Identify the personal qualities that are needed to sustain in the world of work.<br>**CO2:** Explore more advanced Management Skills such as conflict resolution, empowerment, working with teams and creating a positive environment for change.<br>**CO3:** Acquire practical management skills that are of immediate use in management or leadership positions.<br>**CO4:** Employ critical-thinking and analytical skills to investigate complex business problems to propose viable solutions.<br>**CO5:** Make persuasive presentations that reveal strong written and oral communication skills needed in the workplace. |
| **BUSINESS ETIQUETTE AND CORPORATE GROOMING** | **CO1:** Describe basic concepts of business etiquette and corporate grooming<br>**CO2:** Outline the etiquette and grooming standards followed in business environment and the significance of communication<br>**CO3:** Create cultural awareness and moral practices in real life workplace scenarios<br>**CO4:** Analyze workplace courtesy and resolve ethical issues with respect to etiquette and grooming for success<br>**CO5:** Apply the professionalism in the workplace considering diversity and courtesy |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Business Administration
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

| III SEMESTER | |
|---|---|
| **FINANCIAL ACCOUNTING** | **CO1:** Apply accounting concepts and accounting standards in practical situations<br>**CO2:** To be familiar with the rules governing accounting transactions.<br>**CO3:** Prepare Final accounts to ascertain profit or loss of the business and its financial position<br>**CO4:** Critically analyze financial statements of the enterprise, vertically and horizontally for business decision making<br>**CO5:** Identify the methods of calculating depreciation charges. |
| **ORGANIZATIONAL BEHAVIOR** | **CO1:** Apply theories and concepts of organizational behaviour in workplace to create an effective organisational environment<br>**CO2:** Analyze workplace behaviours from theoretical perspective of ability, learning, attitude and values<br>**CO3:** Determine the influence of perception, personality and emotions on workplace behaviour in order to exhibit positive behaviour and to create solutions in a challenging context<br>**CO4:** Create a conductive environment to facilitate group functioning, articulate conflict management competencies in managing and resolving conflicts<br>**CO5:** Identify forces of change and manage a planned organizational change |
| **BUSINESS LAW** | **CO1:** Understand the meaning and nature of contract and various essentials of contract.<br>**CO2:** Understand Discharge of contract and remedies for breach of contract<br>**CO3:** Analyze and differentiate between bailment, Pledge |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Business Administration
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

| | |
|---|---|
| | and Agency.<br>**CO4:** Understand the idea of sale, distinguish sale and agreement to sell and can explain conditions and warranties<br>**CO5:** Interpret critical issues of partnership business and can recognize rights and duties of partners. |
| **COMPUTER APPLICATIONS IN BUSINESS – I** | **CO1:** Apply word basic commands, editing and proofing tools, creating tables, changing layout and mail merge concept for creating and managing business documents and effective communication<br>**CO2:** Handle business data by applying the in- built features of excel<br>**CO3:** Apply financial and statistical function of excel for financial forecast, project analysis and analysis of business data<br>**C04:** Create a new presentation, modify presentation themes and add or edit text to slides<br>**CO5:** Design a simple data base, build a new data base with related tables and manage the data in a table |
| **IV SEMESTER** | |
| **COST ACCOUNTING** | **CO1:** Prepare cost sheet to ascertain total cost and cost/ unit in order to prepare quotation<br>**CO2:** To differentiate methods of calculating material consumption<br>**CO3:** Apply various labor control Techniques for cost reduction and smooth functioning of business.<br>**CO4:** Explain meaning of Overheads. Classify, Allocate, Apportion and Reapportion various overheads to calculate cost.<br>**CO5:** Apply costing methods and costing techniques appropriately |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K.DISTRICT TAMILNADU INDIA

Head
Department of Business Administration
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

| | |
|---|---|
| MARKETING MANAGEMENT | **CO1:** Identify the marketing functions, environment and segmentation for effective positioning of the products.<br>**CO2:** Assess the factors influencing consumer behavior and apply recent marketing trends in business<br>**CO3:** Develop new products and services that are consistent with evolving marketing needs.<br>**CO4:** Formulate effective pricing policy and select an appropriate channel of distribution<br>**CO5:** Summarize the nature and functions of the elements of Promotion mix |
| HUMAN RESOURCE MANAGEMENT | **CO1:** Develop an understanding of the human resource functions and environment to manage human resource effectively.<br>**CO2:** Identify the human recourse requirement and select suitable work force.<br>**CO3:** Evaluate the performance of human resource and develop suitable training, development and career planning programs<br>**CO4:** Frame sound compensation policy for high employee retention<br>**CO5:** Develop an effective grievance handling procedure |
| COMPUTER APPLICATIONS IN BUSINESS – II | **CO1:** To help students to work with well- known accounting software i.e. Tally ERP.9.<br>**CO2:** Students will learn to create company, enter accounting voucher entries including advance voucher entries<br>**CO3:** Demonstrate an understanding of various predefined inventory vouchers to suit the various business requirements and flexibility to create unlimited stock items.<br>**CO4:** Demonstrate an understanding of how to maintain a payroll register. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI
629 153
K.K. DISTRICT
TAMILNADU
INDIA

Head
Department of Business Administration
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu

| | |
|---|---|
| | **CO5:** To prepare Accounting, Payroll, Billing, Sales and Profit Analysis, Auditing Banking Inventory, Taxation such as GST, VAT, TDS, TCS etc |
| **V SEMESTER** | |
| **MANAGEMENT ACCOUNTING** | **CO1:** Understand concepts of Management accounting and differentiate between various types of Accounting.<br>**CO2:** Compare common size and comparative financial statements of different periods<br>**CO3:** Discuss importance and limitation of Fund flow and Cash Flow statements and create them for accounting purpose.<br>**CO4:** Apply Standard costing technique for controlling cost.<br>**CO5:** Describe and Analyze relationships between cost, volume and profit for achieving breakeven point and profit maximization. |
| **RESEARCH METHODOLOGY** | **CO1:** Gain the Knowledge & understanding of concept / fundamentals for different types of research.<br>**CO2:** Applying relevant research techniques.<br>**CO3:** Evaluating relevant data collection techniques and displaying of data collected<br>**CO4:** Classifying different techniques of sampling.<br>**CO5:** Applying Interpretation and prepare research report. |
| **PRODUCTION AND OPERATIONS MANAGEMENT** | **CO1:** Develop an understanding of the role of production manager and also select a suitable production system.<br>**CO2:** Analyse and decide a good location for the plant and its layout.<br>**CO3:** Demonstrate efficient planning and control of production activities<br>**CO4:** Analyze and apply skills in operations function to improve plant maintenance. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Business Administration
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

| | |
|---|---|
| | **CO5:** Develop strategies to ensure high quality products are manufactured and distributed. |
| **BANKING AND INSURANCE** | **CO1:** Understand the concept of Indian banking system and its recent trends<br>**CO2:** Understand the functioning of Reserve Bank of India and overall working of commercial banking of India.<br>**CO3:** Utilize effectively the recent trends in banking to run business successfully.<br>**CO4:** Understand various principle provisions that govern the Life insurance Contracts understand various principles, provision that govern the Life General Insurance Contracts.<br>**CO5:** Distinguish between life insurance and general insurance. |
| **RETAIL MANAGEMENT** | **CO1:** Clarify the concept and related terms in retailing.<br>**CO2:** Comprehend the ways retailers use marketing tools and techniques to interact with their customers.<br>**CO3:** Understand various formats of retail in the industry.<br>**CO4:** Recognize and understand the operations-oriented policies, methods, and procedures<br>**CO5:** Understand how to create a shopping experience that builds customer |
| **EFFECTIVE EMPLOYABILITY SKILLS – 1** | **CO1:** To help students explore their values and career choices through individual skill assessments.<br>**CO2:** To make realistic employment choices and to identify the steps necessary to achieve a goal.<br>**CO3:** To explore and practice basic communication skills<br>**CO4:** To learn skills for discussing and resolving problems on the work site<br>**CO5:** To assess and improve personal grooming |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Business Administration
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

| VI SEMESTER | |
|---|---|
| **FINANCIAL MANAGEMENT** | **CO1:** Apply financial data for use in decision making by applying financial theory to problems faced by business enterprises.<br>**CO2:** Develop knowledge on leverage and cost of capital enabling to arrange funds at minimum cost.<br>**CO3:** Determine and maintain optimal working capital.<br>**CO4:** Apply modern techniques in capital budgeting analysis.<br>**CO5:** Assess the capital structure of the organization and evaluate the profitability condition |
| **STRATEGIC MANAGEMENT** | **CO1:** Understand growing importance of strategies in uncertain business environment.<br>**CO2:** Understand the basic concept of business strategy<br>**CO3:** Identify and evaluate different alternative strategies for effective decision making<br>**CO4:** Analyze strategy implementation alternatives for effective decision making<br>**CO5:** Illustrate the strategic requirements and correlation between business plans with strategic plans |
| **ENTREPRENEURSHIP DEVELOPMENT** | **CO1:** List the characteristics of an entrepreneur, entrepreneur as well their role in the economic development of the country<br>**CO2:** Explain the entrepreneurial environmental factors<br>**CO3:** Design business plan<br>**CO4:** Raise funds and avail assistance through various funding and support agencies for their finance<br>**CO5:** Identify the factors influencing rise of small and medium entreprises. |
| **TRAINING AND** | **CO1:** To develop an understanding of the evolution of |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Business Administration
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

| | |
|---|---|
| **DEVELOPMENT** | training & development from a tactical to a strategic function.<br>**CO2:** To provide an insight into what motivates adults to learn and the most appropriate methodologies to impart training<br>**CO3:** To understand the concept of training audit & training evaluation<br>**CO4:** To learn how design a training module and execute it<br>**CO5:** To understand the need for and concept of Performance Management |
| **FINANCIAL SERVICES** | **CO1:** Understand the functioning of the financial system & Financial services<br>**CO2:** Apply critical, analytical and integrative thinking while understanding the functioning for the Leasing<br>**CO3:** Utilise factoring, forfeiting and leasing services for their enterprises.<br>**CO4:** Assess and make wise investments in mutual funds and also get their credit worthiness evaluated for obtaining borrowings/investments.<br>**CO5:** Develop a critical, analytical and integrative thinking of the role played by the regulators in the smooth functioning of the markets. |
| **EFFECTIVE EMPLOYABILITY SKILLS – II** | **CO1:** To help students explore their values and career choices through individual skill assessments<br>**CO2:** To make realistic employment choices and to identify the steps necessary to achieve a goal<br>**CO3:** To explore and practice basic communication skills<br>**CO4:** To learn skills for discussing and resolving problems on the work site<br>**CO5:** To assess and improve personal grooming |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629153 K.K.DISTRICT TAMILNADU INDIA

Head
Department of Business Administration
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.

**Nanjil Catholic College of Arts and Science**

**Kaliyakkavilai**

**Department of Commerce**

**Programme Outcomes and Course Outcomes**

**B.Com**

**Programme Outcomes**

| | **B.Com** |
|---|---|
| **Programme Outcomes:** | **PO1:** Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate Programme of study.<br>**PO2:** Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.<br>**PO3:** Critical thinking: Capability to apply analytic thought to a body of knowledge; analyses and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.<br>**PO4:** Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of nonfamiliar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.<br>**PO5:** Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyze and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples, and addressing opposing viewpoints.<br>**PO6:** Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problem arising, synthesizing and articulating; Ability to 2recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyses, interpret and draw conclusions from data, establish hypotheses, predict cause-andeffect relationships; ability to plan, execute and report the results of an experiment or investigation.<br>**PO7:** Cooperation/Team work: Ability to work effectively and 3 respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.<br>**PO8:** Scientific reasoning: Ability to analyse, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective. |

| | |
|---|---|
| | **PO9:** Reflective thinking: Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.<br>**PO10** Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.<br>**PO 11** Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion.<br>**PO 12** Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.<br>**PO 13:** Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demon starting the ability to identify ethical issues related to one's work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.<br>**PO 14:** Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.<br>**PO 15:** Lifelong learning: Ability to acquire knowledge and skills, including „learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/reskilling. |

## Course Outcomes

| | **B.Com** |
|---|---|
| | **Semester-I** |
| **I B.Com** | |
| **Financial Accounting -I** | ➢ Remember the concept of rectification of errors and Bank reconciliation statements.<br>➢ Apply the knowledge in preparing detailed accounts of sole trading concerns.<br>➢ Analyze the various methods of providing depreciation |

| | |
|---|---|
| | ➢ Evaluate the methods of calculation of profit.<br>➢ Determine the royalty accounting treatment and claims from insurance companies in case of loss of stock. |
| **Principles of Management** | ➢ Demonstrate the importance of principles of management.<br>➢ Paraphrase the importance of planning and decision making in an organization.<br>➢ Comprehend the concept of various authorizes and responsibilities of an organization.<br>➢ Enumerate the various methods of Performance appraisal.<br>➢ Demonstrate the notion of directing, co-coordination and control in the management. |
| **Business Economics** | ➢ Explain the positive and negative approaches in economic analysis.<br>➢ Understood the factors of demand forecasting.<br>➢ Know the assumptions and significance of indifference curve.<br>➢ Outline the internal and external economies of scale.<br>➢ Relate and apply the various methods of pricing. |
| **Digital Banking** | ➢ Explain the need for digital banking products and the usage of cards.<br>➢ Classify the usage of various payment systems.<br>➢ Discuss the profitability, risk management and frauds of mobile and internet banking.<br>➢ Analyze the approval processes of POS terminals.<br>➢ Explain the product features and services of ATM and Cash Deposit Machine. |
| **Fundamental of Business Studies** | ➢ To make the students familiar with the basic concepts of commerce, and Management Fields.<br>➢ To encourage and motivate the students for the commerce Education.<br>➢ To make the students aware towards the various branches of commerce for Example, Accounts, Banking and Auditing. |
| **I B.Com** | **Semester-II** |
| **Financial Accounting-II** | ➢ To evaluate the Hire purchase accounts and Instalment systems.<br>➢ To prepare Branch accounts and Departmental Accounts.<br>➢ To understand the accounting treatment for admission and retirement in partnership.<br>➢ To know Settlement of accounts at the time of dissolution of a firm.<br>➢ To elaborate the role of IFRS. |
| **Business Law** | ➢ Explain the Objectives and significance of Mercantile law.<br>➢ Understand the clauses and exceptions of Indian |

| | |
|---|---|
| | Contract Act.<br>➢ Outline the contract of indemnity and guarantee.<br>➢ Familiar with the provision relating to Bailment and Pledge.<br>➢ Explain the various provisions of Sale of Goods Act 1930. |
| **Insurance and Risk Management** | ➢ Identify the workings of insurance and hedging.<br>➢ Evaluate the types of insurance policies and settlement.<br>➢ Settle claims under various types of general insurance.<br>➢ Know the protection provided for insurance policy holders under IRDA.<br>➢ Evaluate the assessment and retention of risk. |
| **Internet and its Applications** | ➢ This subject seeks to develop the would-be Accounting Executives with knowledge in Internet for the application in the area of accounting. |
| **Stock Market Operations** | ➢ Explain the basic concept of Securities Market.<br>➢ Practice Trading on Stock Market.<br>➢ Analyze the legal Frame work of Securities Market.<br>➢ Explain different segment of Stock Exchange.<br>➢ : Perform Demat Trading. |
| **II B.Com** | **Semester-III** |
| **Advanced Financial Accounting** | ➢ To understand the accounting system of branch and departmental accounts.<br>➢ To know the preliminaries before admitting a person as a partner.<br>➢ To understand the various kinds of goodwill treatment followed in partnership accounts.<br>➢ To understand the dissolution of partnership and partnership firms.<br>➢ To understand the insolvency of a partner or all partners and the Garner Vs Murray rule.<br>➢ To prepare the accounts for amalgamation of firms. |
| **Banking Theory Law And Practice** | ➢ To understand the basic concept used in banking.<br>➢ To know the various kinds of banking and their functions.<br>➢ To know the banking product or services.<br>➢ To know the development of technology in banking company.<br>➢ To know the Reserve Bank of India and their importance in banking industry. |
| **Computer Applications In Business** | ➢ To understand the basic concepts and terminologies use.<br>➢ To familiarize in MS Word.<br>➢ To familiarize in MS PowerPoint.<br>➢ To prepare a document in excel program.<br>➢ To know the internet protocols, to compose and view email etc. |
| **Business Communication** | ➢ To know the barriers of communication and essentials |

| | |
|---|---|
| | of a good business communication.<br>➢ To know the various kinds of business correspondence and to include the important points to be covered.<br>➢ To know the banking, insurance and agency correspondence.<br>➢ To know different secretarial correspondence.<br>➢ To know how to prepare an effective resume and technical developments in the field of communication |
| **II B.Com** | **Semester-IV** |
| **Quantitative Techniques** | ➢ To analyse the practical applications of Analytical Geometry in business field.<br>➢ To know about matrix algebra, scalar multiplication and also to find out the inverse of a matrix.<br>➢ To know the measures of central tendency and to apply to measure averages.<br>➢ To apply the tools on measures of dispersion that are useful for estimating variations.<br>➢ To apply the various methods for calculating correlation coefficient.<br>➢ To apply regression analysis for estimating values for future period.<br>➢ To understand the concepts about indices and time series. |
| **Logistic Management** | ➢ To introduce basic concepts in logistics with special emphasis on maritime shipping.<br>➢ To understand multimodal transport concept and inventory services.<br>➢ To understand the concept of life cycle support and measurement system.<br>➢ To know about electronic data interchange standards.<br>➢ To familiarise with multimodal transport and warehouse resources and strategies. |
| **Application Of Tally In Accounting** | ➢ To develop the computerised knowledge in accounting.<br>➢ To impart the basic principles and concepts of computerized accounting.<br>➢ To gain knowledge on the use and application of tally.<br>➢ To learn about the concept of vouchers.<br>➢ To create company in tally.<br>➢ To create knowledge of inventory accounting.<br>➢ To create knowledge of budgetary control.<br>➢ To make use of cost category and cost centres in vouchers. |
| **Entrepreneurship Development** | ➢ To understand the significance of entrepreneurial skills.<br>➢ To know about the developing ideas and techniques of business.<br>➢ To understand about the procedures of start up. |

| | |
|---|---|
| | ➢ To identify the institutional support provided to entrepreneurs.<br>➢ To analyse the application of various accounting statements. |
| **III B.Com** | **Semester-V** |
| **Corporate Accounting** | ➢ To understand about the issue of shares and debentures.<br>➢ To understand about the redemption of preference shares.<br>➢ To understand the calculation of profit prior to incorporation.<br>➢ To understand the accounting for amalgamation and external reconstruction.<br>➢ To analyse the various schemes for capital reduction.<br>➢ To evaluate the preparation of liquidator's financial statement. |
| **Cost Accounting** | ➢ To explain the elements of cost.<br>➢ To adapt appropriate method for material control.<br>➢ To understand the different types of overheads.<br>➢ To apply the process costing.<br>➢ To debate about the variances of various costing. |
| **Business Law** | ➢ To differentiate the Contracts and Agreements.<br>➢ To validate offer, acceptance and consideration.<br>➢ To identify the frauds misrepresentations unlawful agreements.<br>➢ To know the procedures for entering into the various types of contracts.<br>➢ To analyse the contract of sale. |
| **Research Methodology** | ➢ To know the criteria for good research.<br>➢ To recognise the various research designs.<br>➢ To analyse the different types of sampling designs.<br>➢ To know about the various elements of data collection.<br>➢ To differentiate the questionnaire and schedule.<br>➢ To identify the mechanics of research report writing. |
| **Income Tax Law & Practice** | ➢ To know the residential status and tax exemptions.<br>➢ To compute the taxable salary.<br>➢ To calculate house property income.<br>➢ To identify the income from other sources.<br>➢ To understand the provisions for filing the return of income. |
| **Human Resource Management** | ➢ To know the system of human resource information.<br>➢ To learn the process of selection of human resource.<br>➢ To differentiate the management development and career development.<br>➢ To understand the performance appraisal.<br>➢ To identify the grievance handling and redressal. |
| **III B.Com** | **Semester-VI** |
| **Special Accounts** | ➢ To identify the processes of Holding companies.<br>➢ To recognize the Banking company accounts. |

| | |
|---|---|
| | ➢ To understand the basic principles of Company Insurance.<br>➢ To know the final accounts of public sector undertakings.<br>➢ To equip with different accounting standards knowledge. |
| **Management Accounting** | ➢ To understand the basic concepts of management accounting and types of ratios can be applied for evaluating the performance and financial position of a firm.<br>➢ To evaluate the performance of a firm using fund flow and cash flow statement.<br>➢ To prepare various budgets and understand the features and importance of budgets.<br>➢ To identify the significance of standard costing, use marginal costing techniques for optimizing cost and profit.<br>➢ To Understand the Capital Budgeting Importance and various Appraisal methods for evaluating and performance of firm. |
| **Industrial Law** | ➢ To know the provisions of Factories Act.<br>➢ To know about the welfare, safety and health of workers.<br>➢ To understand the disputes of strike, lock out, retrenchment, lay off and compensation.<br>➢ To understand the Trade Union Act.<br>➢ To know the rights and duties of Employee State Insurance. |
| **Auditing And Corporate Governance** | ➢ To understand Basic Principles of Auditing, Internal Control, Vouching and verification.<br>➢ To understand the Positions and status of Statutory Auditors under the Companies Act 2013.<br>➢ To know about special Areas of Audit and Recent Trends in Auditing.<br>➢ To understand the Conceptual framework of Corporate Governance models, codes and Standards.<br>➢ To know the Concept of CSR and business Ethics under the Companies Act 2013. |
| **Business Taxation** | ➢ To understand basic concept and importance of indirect taxes.<br>➢ To understand the various concept and types of Goods and Service Tax.<br>➢ . To understand and make use of knowledge of GST in taking managerial decision in various tax related matters.<br>➢ To get familiar with the Integrated Goods and Services Tax Act 2017.<br>➢ To know the Customs procedures for import and export. |
| **Retail Management** | ➢ To understand basic concept, importance and |

| | |
|---|---|
| | challenges facing retailers.<br>➢ To identify the types of retailing institutions.<br>➢ To understand Strategic planning process in retailing.<br>➢ To identify the organizational Location and financial decisions.<br>➢ To know the role and functions of Buying and handling of Merchandise Management. |

## M.Com
## Programme Outcomes

| | M.Com |
|---|---|
| **Programme Outcomes** | **PO1:** Problem Solving Skill Apply knowledge of Management theories and Human Resource practices to solve business problems through research in Global context.<br>**PO2:** Decision Making Skill Foster analytical and critical thinking abilities for data-based decisionmaking.<br>**PO3:** Ethical Value Ability to incorporate quality, ethical and legal value-based perspectives to all organizational activities.<br>**PO4:** Communication Skill Ability to develop communication, managerial and interpersonal skills.<br>**PO5:** Individual and Team Leadership Skill 4 \| P a g e Capability to lead themselves and the team to achieve organizational goals.<br>**PO6:** Employability Skill Inculcate contemporary business practices to enhance employability skills in the competitive environment.<br>**PO7:** Entrepreneurial Skill Equip with skills and competencies to become an entrepreneur.<br>**PO8:** Contribution to Society Succeed in career endeavours and contributes significantly to society.<br>**PO 9** Multicultural competence Possess knowledge of the values and beliefs of multiple cultures and a global perspective.<br>**PO 10:** Moral and ethical awareness/reasoning Ability to embrace moral/ethical values in conducting one's life |

## Course Outcomes

| CO | M.Com |
|---|---|
| **I M.Com** | **Semester-I** |
| **Business Finance** | ➢ Explain the important finance concepts.<br>➢ Estimate risk and determine its impact on return.<br>➢ Examine leasing and other sources of finance for start-ups.<br>➢ Summarise cash, receivable and inventory management techniques.<br>➢ Evaluate techniques of long term investment decision incorporating risk factor |
| **Digital Marketing** | ➢ Explain the dynamics of digital marketing. |

| | |
|---|---|
| | ➢ Examine online marketing mix.<br>➢ Compare digital media channels.<br>➢ Explain online consumer behaviour.<br>➢ Analyse social media data |
| **Banking and Insurance** | ➢ Relate the transformation in banking from traditional to new age.<br>➢ Apply modern techniques of digital banking.<br>➢ Evaluate the role of insurance sector.<br>➢ Examine the regulatory mechanism.<br>➢ Assess risk mitigation strategies. |
| **Security Analysis and Portfolio Management** | ➢ Examine investment options and structure a portfolio.<br>➢ Assess the value of Equity Shares, Preference Shares and Bonds.<br>➢ Examine stock performance through fundamental and technical analysis.<br>➢ Examine the various Portfolio Theories.<br>➢ Evaluate the portfolio performance. |
| **Export Import procedures and documentation** | ➢ Explain Preliminaries for Exports and Imports.<br>➢ Choose the appropriate technique for Export Import Documentation.<br>➢ Make use of Export Import Documentation.<br>➢ Choose Polices and Institutional Framework for Exports and Imports Foreign Trade Policy.<br>➢ Construct Pre-Import Procedure |
| **Strategic Cost Management** | ➢ Explain strategic cost management and QC.<br>➢ Choose the appropriate technique for cost control.<br>➢ Make use of activity based costing in practice.<br>➢ Choose transfer pricing methods to solve problems.<br>➢ Construct cost structure for Agriculture and IT sector. |
| **I M.COm** | **Semester-II** |
| **Corporate Accounting** | ➢ Determine profit and financial position by preparing financial statements of companies as per schedule III of Companies Act, 2013.<br>➢ Apply the provisions of IRDA Regulations in the preparation of final accounts of Life Insurance and General Insurance Companies.<br>➢ Determine the overall profitability and financial position by preparing consolidated financial statements of holding companies in accordance with AS21.<br>➢ Analyze contemporary accounting methods.<br>➢ Examine Financial Reporting based on appropriate AccountingStandardsandprovisionsofCompaniesAct2013withre spec t to Corporate Social Responsibility. |
| **Setting up of Business Entities** | ➢ Compare the various avenues of acquiring finance to setup a business entity.<br>➢ Recall the legal requirements for Section 8 Company.<br>➢ Examine the provisions for LLP and joint venture.<br>➢ Analyze the registration and licensing procedure.<br>➢ Examine the compliance of regulatory framework regarding environment. |
| **Digital Banking** | ➢ Compare Banking Technology tools. |

| | |
|---|---|
| | ➢ Assess the provisions relating to Online Banking.<br>➢ Recall the basics of Data Communication Network and EFT System.<br>➢ Explain the Role of Technology Up gradation and its impact on Banks.<br>➢ Examine Security Considerations Risk Concern Areas. |
| **Forensic Accounting** | ➢ To understand the conceptual framework of Forensic accounting.<br>➢ To identify, analyze and interpret indicators of financial fraudulent Activity.<br>➢ To identify, analyze and interpret indicators of investigation process and identify situations for their application.<br>➢ To understand the significance of forensic audit, stages of forensic audit and tools for forensic audit.<br>➢ To know the categories of cyber law, Information Technology Act-2000 and global issues of cyber space. |
| **Advanced Excel** | ➢ Explain Managing the Work book.<br>➢ Select the Advanced Tables.<br>➢ Make use of Working with Macros.<br>➢ Select Functional Formulas.<br>➢ Select Functional Formulas. |
| **II M.Com** | **Semester-III** |
| **Advanced Corporate Accounting** | ➢ On the successful completion of this course the student will be able to gain knowledge and understand the concepts and practices of company accounts.<br>➢ The students shall have a comprehensive understanding on the advanced issues in accounting.<br>➢ The students shall acquire a thorough knowledge in banking accounts. It helps them even to appear for competitive bank examinations.<br>➢ The students shall get an exposure on the accounts of electricity companies. |
| **Taxation and Tax Planning** | ➢ Thorough with the concepts of Taxation.<br>➢ Prepare accounts under different heads of incomes.<br>➢ Prepare taxable statements.<br>➢ File Income Tax returns.<br>➢ Gain knowledge of tax deductions |
| **Computerized Accounting with Tally** | ➢ Prepare the accounts with accounting software.<br>➢ Prepare the vouchers and insert into the system.<br>➢ File GST returns and prepare GST reports.<br>➢ Prepare the financial reports.<br>➢ Gain knowledge of interest calculation. |
| **Human Resource Management** | ➢ Know the basics present trend in Human Resource Management.<br>➢ Help furnish the various job related aspects.<br>➢ Know various aspects of Human development related issues.<br>➢ Evaluate the quality aspects of human resources.<br>➢ Gain an understanding about the safety aspects of Human Resource. |
| **Business Research** | ➢ Understand the Concepts Relating to Business Research, Types |

| | |
|---|---|
| **Methods** | and Process.<br>➢ Identify the Research Problem and Draw the Design.<br>➢ Prepare Questionnaire and Interview Schedule and Formulate & Test the Hypothesis.<br>➢ Adopt Appropriate Statistical Tools for the Inferences.<br>➢ . Write a Research Report. |
| **Consumer Rights and Education** | ➢ Understand the various terms related to Consumers.<br>➢ Know the Consumers rights and duties and how to enforce their rights.<br>➢ Gain knowledge of the provisions and procedures under Consumer Protection Act.<br>➢ Familiar with Consumer related Legislations and Organisations.<br>➢ know the methods of creating awareness and education |
| **II M.Com** | **Semester-IV** |
| **Applied Costing** | ➢ Gain familiarity with the various cost concepts, and elements of cost.<br>➢ Prepare cost sheets.<br>➢ Apply different methods and techniques of cost control.<br>➢ . Gain knowledge of different methods of payment of wages and incentives.<br>➢ Get acquaintance with the application of Marginal costing for Business decision making. |
| **Indirect Taxation** | ➢ Students will get an understanding on indirect taxation system in India.<br>➢ Students will get working knowledge on GST.<br>➢ Students will be able to compute GST.<br>➢ . Students will prepare and submit returns for GST.<br>➢ Students will gain knowledge about customs procedure |
| **E-Commerce** | ➢ Students shall understand the fundamental principles of e-business and e-commerce.<br>➢ The learners shall understand the impact of information and communication technologies on business.<br>➢ Students shall understand the tools and services used by virtual e-commerce sites |
| **Financial Markets and Institutions** | ➢ Understand the basic concepts of financial markets.<br>➢ Gain knowledge on the working of commercial paper market, including bill market.<br>➢ Describe the evolution of capital market.<br>➢ Understand the functioning of various financial institutions such as NABARD, EXIM bank, etc.<br>➢ Know the working of various credit rating agencies such as CRISIL, etc |

Head
Department of Commerce
Nanjil Catholic College of Arts & Science,
Kaliyakkavilai 629 153, Tamil Nadu.

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153

**NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE, KALIYAKKAVILAI**

**DEPARTMENT OF SOCIAL WORK**

**PO & CO of 2023-2024**

**MASTER OF SOCIAL WORK**

| | |
|---|---|
| **Programme Outcome:** | • Professional Knowledge: Facilitate the students to learn the concepts, history, philosophy, methods, fields of Social Work, and Social Work education.<br>• Ethical and Professional values: Inculcate Social Work knowledge, Professional Ethics, Principles and methods to guide professional practice.<br>• Technical and Operating Skills: Provide training in applying skills in social work practice and social work research in different fields for achieving desirable changes and development.<br>• Competencies and Professional Behaviour - Equip to practice personal reflection and self-correction to assure continual professional development.<br>• Entrepreneurial Skills: Enhance competencies and skills for the continuous professional development to become an entrepreneur.<br>• Critical Thinking: Apply Critical thinking to inform and communicate professional judgement in Social Work Practice.<br>• Problem Solving: Apply knowledge of social systems and human behaviour to promote social change, problem solving in human relationships.<br>• Communication and Implications - Competence to communicate to stakeholders and policymakers the implications of policies and policy changes.<br>• Lifelong Learning and Development: Train professional social worker to be independent and lifelong learning in |

| | |
|---|---|
| | the broadest context of socio-cultural, economic, environmental, political and psychological changes in the society.<br>• Leadership Skills: Demonstrate Leadership Skill to advocate and formulate policy for the social and economic wellbeing and social change.<br>• Analytical Skills and Intervention: Engage, assess, intervene and evaluate individuals, families, groups, organizations, and communities. |
| **Specific outcomes:** | • Gain knowledge on the utilization of Social Work practice theories and methods with individuals, families and groups.<br>• Apply ethics, values, methods, professional skills, approaches and techniques in Social Work Practice with diverse and vulnerable populations.<br>• Acquire specialization-based proficiency and will suitably translate the Principles and Methods of Social Work in their respective settings.<br>• Impart professional training through Field Work in order to provide manpower in various fields and capable of working at various levels of micro, meso and macro systems.<br>• Understand the forms and mechanisms of oppression and discrimination and advocate for human rights and social and economic justice. |

## Course Outcomes

**SEMESTER I**

| Course | Outcomes |
|---|---|
| **SOCIAL WORK PROFESSION Ist Yr** | • To aware an in-depth knowledge on the basic concepts of Social Work. |

| | |
|---|---|
| | • To understand the historical background of Social Work in west and India.<br>• To articulate the student to be familiar with Philosophies, Ethics and Values of Social Work.<br>• To analyse the significance of Models in Social Work.<br>• To evaluate implication of Social Work Education and Field Work.<br>• To develop the Social Workers to apply the methods and techniques of Social Work in various settings. |
| **SOCIAL CASE WORK - Ist Yr** | • To get knowledge about the different problems faced by the Individuals<br>• To enhance knowledge on social case work skills in social case work practice.<br>• To understand the process of casework intervention with client.<br>• To enhance the ability towards problem solving process.<br>• To create the ability to critically analyse problem of individuals and factors affecting them.<br>• To develop the competencies and skills for Practice with different settings |
| **SOCIAL GROUP WORK - Ist Yr** | • To be aware about the concept, characteristics, values and principles of Social Group Work<br>• To apply suitable theories and models to resolve the problems of Groups.<br>• To Critically choose and implement interventions to achieve social group work goals. |

| | |
|---|---|
| | • To analyse competencies and skills for working with different groups in various practice settings.<br>• To analyse and implement empirically-based group interventions and evaluating group effectiveness.<br>• To demonstrate the process of group experience and professional development |
| **FIELD WORK – I - Ist Yr** | • To integrate the classroom learning with field practice - the knowledge related to different field settings- establishment of NGO'S and its work with the beneficiaries.<br>• To understand the application of different skills related to case work, Group work and other methods of Social Work<br>• To realise one's development of self and conduct oneself professionally in the field<br>• To apply and practice skills acquired in the process of learning in handling various types of clienteles<br>• To assess the concept of field learning and learn about working in different settings<br>• To apply social work competencies to resolve social problems. |
| **SOCIOLOGICAL AND PSYCHOLOGICAL FOUNDATIONS FOR SOCIAL WORK - Ist Yr** | • To get an in-depth knowledge on the basic concepts of Psychology.<br>• To understand the basic principles of Human growth and Development<br>• To develop understanding on the basic concepts of society and social change<br>• To analyse the basics of Social Interaction and Social processes |

| | |
|---|---|
| | • To analyse the social Institutions and critically evaluate modern trends in social institutions<br>• To understand major social problems in India. |
| **SOCIETY AND HUMAN BEHAVIOUR - Ist Yr** | • To be aware of the concepts related to Sociology and Social Work<br>• To understand various patterns of Social Interaction, social processes and its dimensions<br>• To understand the basic concepts in Psychology and Human Behaviour<br>• To Understand Social Stratification and the impact of changing Societies<br>• To understand various social issues and existing agencies of social control.<br>• To apply social work competencies to resolve social problems |
| **COMMUNICATION FOR SOCIAL WORK - Ist Yr** | • To identify the significance of public speaking<br>• To demonstrate the skills of group discussion<br>• To apply the knowledge and skills of facing interviews<br>• To analyse and develop writing skills required for social work practice<br>• To evaluate the impact of body language on communication<br>• To develop the communication skills as a whole |
| **RURAL CAMP – Ist Yr** | • To understand the key features of rural life and its realities<br>• To illustrate skills for group living and interpret its dynamics. |

| | |
|---|---|
| | • To demonstrate skills for organizing, planning, execution of tasks, identifying and mobilizing resources.<br>• To be sensitive to the socio-political and cultural implications in rural life, more specifically, among the marginalized and vulnerable groups.<br>• To design and create contextual programmes to address rural concerns affecting the locality.<br>• To develop Professional Skills and utilised it in the field. |

**SEMESTER II**

| Course | Outcomes |
|---|---|
| **COMMUNITY ORGANIZATION AND SOCIAL ACTION - Ist Yr** | • To be aware of the concepts related to Community Organization<br>• To apply community Organization as a method of social work in various settings.<br>• To understand and apply various Models of Community Organization<br>• To understand the role of social work in social Action and social Reform for social development<br>• To critically analyse Social Movements from various dimensions.<br>• To apply Social Action as a method of Social Work |

| | |
|---|---|
| **SOCIAL WORK RESEARCH AND STATISTICS - Ist Yr** | • To aware an in-depth knowledge on Social Work Research.<br>• To understand the clarity on the research methods and processes.<br>• To articulate the student to Identify and Formulate the Research problem and Literature review and usage of Methodology.<br>• To analyse and apply Statistics applications and Software packages, make data entry and interpret the results.<br>• To evaluate implications of Research in various settings of Social Work.<br>• To develop the Research Projects in Social Work. |
| **SOCIAL WELFARE ADMINISTRATION, SOCIAL POLICIES AND SOCIAL LEGISLATIONS - Ist Yr** | • To acquire knowledge about social welfare administration and structure of social welfare administration in India.<br>• To acquire application knowledge of the basic process of registering, managing and administrating Welfare Agencies in the context of social work profession<br>• To describe the structure of social welfare administration in India and social welfare programmes and policies.<br>• To describe the understanding of the nature of social policy, planning and development in India |

| | |
|---|---|
| | • To critical analysis social legislation enforcement and challenges<br>• To enhance the knowledge on the government department and NGOs function for development of the people |
| **FIELD WORK – II - Ist Yr** | • To integrate the classroom learning with field practice - the knowledge related to different field settings-establishment of NGO'S and its work with the beneficiaries<br>• To understand the nature of the NGO'S functioning and funding resources<br>• To apply, evaluate and follow up appropriate methods of Social Work in the field<br>• To apply and practice skills acquired in the process of dealing with clients and establish rapport<br>• To assess the concept of field learning and learn about working in different settings<br>• To learn the process of documentation and recording |
| **ENTREPRENEURSHIP DEVELOPMENT - IsYr** | • To be aware about the concept, Entrepreneur and Entrepreneurship development in India.<br>• To bring a change in the society by applying entrepreneurial tool.<br>• To relate to theories of entrepreneurship development. |

| | |
|---|---|
| | • To apply the competencies and skills of an entrepreneur in the field.<br>• To demonstrate the use of different schemes and policies related to entrepreneurship for personal and professional development<br>• To create an enterprise to solve a social problem |
| **GREEN SOCIAL WORK - Ist Yr** | • To be aware of the concepts of Ecology, Environment and Green Social Work<br>• To understand the causes of environmental issues and its adverse effects.<br>• To apply the appropriate measures to control and reduce the issues.<br>• To analyse the Environmental management systems and justice.<br>• To implement the roles and responsibilities to preserve and protect our environment<br>• To deal with environmental issues and apply suitable interventions |
| **LIFE SKILLS FOR SOCIAL WORK - Ist Yr** | • To understand their strengths and weaknesses.<br>• To be a socially competent person.<br>• To apply life skills to handle situation effectively<br>• To set Goals and achieve them successfully<br>• To accomplish Self Competency and Confidence |

| | |
|---|---|
| | • To identify, analyse and health the situations using core life skills |

**SEMESTER III**

| | |
|---|---|
| **RURAL COMMUNITY DEVELOPMENT – IInd Yr** | • To define the rural areas, rural economy and development and issues or Rural Development in general and address them through various development strategies.<br>• To acquaint the knowledge on social political structure, economic structure, economic<br>• To explain the rural local self-governance namely Panchayat Raj Institutions and its role in planning and development of rural areas<br>• To elucidate the role of government, non-government and role of social workers in rural development.<br>• To understand the suitable intervention for rural development.<br>• To apply the various application of social work methods in solving the rural problems. |
| **HUMAN RESOURCE MANAGEMENT - IInd Yr** | • To aware an in-depth knowledge on the process of Human Resource Management.<br>• To understand the suitable interventions on Human Resource Management practice. |

| | |
|---|---|
| | • To articulate the budding HR Professionals to meet the challenges in the industries in the modern era.<br>• To analyse the appropriate methods for the human capital development and retention of employees.<br>• To evaluate the recent trends and advances in Human Resource Management.<br>• To adapt the future perspectives of Human Resource Management in Global business world. |
| **MEDICAL SOCIAL WORK - IInd Yr** | • To be aware about the concept, history, scope and trends in Medical Social Work.<br>• To Identify, analyse, and implement evidence-based interventions for patients and care givers.<br>• To Critically choose and implement health care models in the practice setting to achieve the goals of medical social work<br>• To analyse competencies and skills required for medical social worker in different setting.<br>• To create and implement empirically-based interventions in a multidisciplinary setting.<br>• To demonstrate ethical values and able to articulate patients' rights in health care setting |
| **TRIBAL DEVELOPMENT IN INDIA - IInd Yr** | • Understanding of tribal communities and its organisation. |

| | |
|---|---|
| | • Discuss about the problems primitive communities' various problems.<br>• Helps to understand the contribution of tribal activists and reformers and impact of tribal movements on tribal policy.<br>• It will help students to prepare with required skills as a tribal development facilitator<br>• To analyses the role of multimedia for the development of the people<br>• To adopt the future perspective of Tribal development in India |
| **LABOUR LEGISLATIONS - IInd Yr** | • To identify the significance of labour legislations in human resource management<br>• To apply the knowledge of labour legislations to regulate the working conditions in the industrial sector<br>• To apply the knowledge and skills of implementing the wage legislations<br>• To implement the knowledge of social security legislations<br>• To analyse and apply the legislations pertaining to Industrial Relations<br>• To evaluate the working of the legislations in the State of Tamil Nadu |
| **MENTAL HEALTH AND PSYCHIATRIC DISORDERS - IInd Yr** | • To understand the concept of Mental Health<br>• To evaluate the client using psychiatric assessment tools |

| | |
|---|---|
| | • To know the various mental health issues in the community<br>• To apply the phenomenology, symptomatology, and treatment of common mental disorders.<br>• To use legislation, appropriate to Mental Health related issues.<br>• To effectively identify Mental Disorders |
| **FIELD WORK – III**<br>**COMMUNITY DEVELOPMENT SPECIALIZATION - IInd Yr** | • To understanding the different types communities and their issues.<br>• To knowing the different kinds of NGOs working for the different kinds of communities in solving the problem in the person environment context.<br>• To interrupt the theoretical knowledge with the activities of social work agencies.<br>• To discuss the roles, characteristics and skills of a student trainee in field work agencies.<br>• To develop expertise in proposal writing, research and evaluation.<br>• To help the students to identify various avenues of job placement and equip themselves with the right employability competency.<br>• To understanding the corporates' role in the development of the communities. |
| **FIELD WORK - III**<br>**HUMAN RESOURCE MANAGEMENT (Manufacturing Sector) - IInd Yr** | • To integrate the classroom learning with field work practice - the |

| | |
|---|---|
| | knowledge related to types of employees, recruitment, selection, induction and placement, time office, bio- metric etc. in the industry<br>• To understand the application of the different types of labour welfare measure and the current trends in HR practices<br>• To demonstrate the knowledge and the skills of HRM, IR, and work as a HR professional in interdisciplinary teams<br>• To apply and practice in projects of the organization on employees' motivation, employees' absenteeism, collective bargaining and the role of trade unions<br>• To assess the concept of industrial relations and familiarize with labour legislation towards supportive business environment<br>• To develop the competencies required for the practice of Human Resource Management |

**SEMESTER III**

| Course | Outcomes |
|---|---|
| **FIELD WORK FOR MEDICAL SOCIAL WORK - IInd Yr** | • To understanding the different types of health issues.<br>• knowing the different kinds of NGOs working for the different kinds of |

| | |
|---|---|
| | communities in solving the problem in the personal environment context.<br>• To be able to understand the role of social worker in health setting.<br>• Evaluate the role, characteristics and skills of a social work and critically evaluate the same.<br>• Develop theoretical expertise and knowledge in health setting.<br>• Understanding the role of multidisciplinary team in a hospital. |
| **DISASTER MANAGEMENT - IInd Yr** | • Elucidate types of disasters and plan the preparedness for the disaster.<br>• Describe Disaster preparedness and responses various stakeholders of the community<br>• Describe the NGO Registration procedure and identify how to run the NGOs effectively<br>• critically analyse Recovery, Rehabilitation and Reconstruction technique<br>• Apply Community Linkage in Disaster Management in safeguarding environment<br>• Apply Professional social worker skills Disaster Management in safeguarding environment |
| **CORPORATE SOCIAL RESPONSIBILITY - IInd Yr** | • To learn the concept and Model of Corporate Social Responsibility<br>• To understand steps and strategies in attaining CSR. |

| | |
|---|---|
| | • To examine the various norms and Standards on CSR (National and International).<br>• To appraise the various CSR Programmes in an Organization<br>• To Reflect on various Ethical standards on consumer, Environmental and Social aspects of CSR.<br>• To Facilitate in the process of Community Participation and Community Need Analysis |
| **COUNSELLING IN SOCIAL WORK - IInd Yr** | • To demonstrate ethics in Counselling.<br>• To use various Counselling skills required and Counselling process.<br>• To design Counselling techniques based on the social background of the client.<br>• To use Counselling as a tool for managing changes and situations.<br>• To apply Counselling skills at different settings.<br>• To apply Counselling in emergency situations |
| **PUBLIC HEALTH IN INDIA - IInd Yr** | • To aware an in-depth knowledge of the health in the community.<br>• To formulate health care programs with Human Rights perspective<br>• To understand the health related to vulnerable group<br>• To compare the administration of various health care systems in the country. |

| | |
|---|---|
| | • To utilize the National Health Programmed and Health Policies while working among communities<br>• To plan appropriate Preventive, Primitive and Rehabilitative health care programs. |
| **SKILLS FOR COMPETITIVE EXAMINATIONS - IInd Yr** | • To acquire Skills and knowledge for successful completion for competitive exam<br>• To enhance the attitudinal and aptitude skills<br>• To enhance the student to improve their emotional intelligence and interpersonal skills.<br>• To motivate them for successful Goal setting and effective planning<br>• To impart skills for students about building logical reasoning and self-esteem.<br>• To strength their general knowledge and relevant knowledge for successful face their competitive examination |
| **EMPLOYABILITY SKILLS OF SOCIAL WORKERS - IInd Yr** | • To Enhance the Behavioural Skills of the students.<br>• To equip the student's person's ability to interact effectively with co-workers and customers<br>• To enhance the student to improve English Literacy & Communication<br>• To motivate them to become a successful Entrepreneur in the world |

| | |
|---|---|
| | • To provide an in-depth view to the students about Essential skills for success.<br>• To prepare them to the world of work. |
| **SUMMER INTERNSHIP TRAINING - IInd Yr** | • To acquire professional social work skills in their respective social work setting.<br>• To analyse the need and importance the role of Social Workers in professional practice.<br>• To practice and demonstrate the Social Work methods in their respective settings.<br>• To associate and integrate the Social Work theory in to practice in their field work organization.<br>• To understand the application of Social Work approaches to handle the challenges in the field.<br>• To utilise the professional knowledge and skills in their respective field. |

**SEMESTER IV**

| | |
|---|---|
| **URBAN COMMUNITY DEVELOPMENT - IInd Yr** | • To know various theories on urbanization, urban life, problems and development<br>• To enable the students to practice the values and principles of urban community development<br>• To learn urban local administrative structure and programmes for urban development and evaluate solutions for issues in Urban Community |

| | |
|---|---|
| | • To critically analyze the growth and development of urban areas, the related problems and the challenges<br>• To acquire the skills to work with the urban community, and develop and implement programmes with them.<br>• Enable to practice Social Work Method in Urban Community |
| **INDUSTRIAL RELATIONS AND EMPLOYEE WELFARE - IInd Yr** | • To be aware of the concept and evolution of Industrial Relations<br>• To understand the mechanisms behind IR scenario in India.<br>• To understand the role of various stakeholders in maintaining peaceful Industrial Relations in India.<br>• To analyse various statutory and non-statutory employee welfare measures.<br>• To evaluate various approaches to Employee welfare<br>• To apply social work methods in delivering Employee welfare services |
| **PSYCHIATRIC SOCIAL WORK - IInd Yr** | • To compare international Psychiatric Social Work standards and adopt suitable standards.<br>• To apply methods of social work among psychiatric patients, family and people with mental illness.<br>• To understand Psychiatric Hospital<br>• To identify the role of social worker in clinical practice and help accordingly |

| | |
|---|---|
| | • To demonstrate high knowledge and skill as a Psychiatric Social Worker.<br>• To formulate and design community mental health programs to address issues of mental health among communities |
| **NGO MANAGEMENT - IInd Yr** | • Classify the fundamentals of Management and distinguish between Profit and Non-Profit organisations.<br>• Explain the different legislations for Non-profit organisation.<br>• Describe the NGO Registration procedure and identify how to run the NGOs effectively.<br>• Prepare the fund-raising techniques and develop proposal writing skills.<br>• Critically analyse and understand the key issues and challenges facing NGOs.<br>• Apply a variety of tools to the development of NGO structure, personnel management, and other key areas in NGO management. |
| **ORGANISATIONAL BEHAVIOUR - IInd Yr** | • To be aware of the relation between various disciplines and Organizational Behaviour<br>• To be aware of the concept of Individual and group behaviour in Organizations<br>• To apply suitable theories and models of Motivation to enhance the |

| | |
|---|---|
| | work motivation of People in Organizations<br>• To analyses the competencies and skills required for overcoming resistance to change in Organizations<br>• To identify the skills required for Interventions in Organizational Development<br>• To understand latest trends in Organizational Development |
| **CLINICAL SOCIAL WORK - IInd Yr** | • To be aware about the concept, history, scope and trends in clinical Social Work.<br>• To articulate skills to conceptualize, undertake evidence-based practice in different clinical settings.<br>• To Critically analyse the problematic situations and to find workable means to resolve them<br>• To analyse competencies and skills required for clinical social worker in different setting.<br>• To create and implement empirically-based interventions in a multidisciplinary setting.<br>• To demonstrate ethical values and clinical standards as per NASW in all clinical settings |
| **SOCIAL WORK PRACTICE IN PROJECT MANAGEMENT - IInd Yr** | • To understanding of Project proposal writing and its process of implementation. |

| | |
|---|---|
| | • To acquire project proposal writing skills to work effectively implement various programmes to community.<br>• To develop the ability to understand Project and its implications.<br>• To have an appropriate knowledge towards effective Donor Management and NGO Management.<br>• To strengthen the monitoring and evaluation skills.<br>• To demonstrate the skills for the management of Project |
| **STRATEGIC HUMAN RESOURCE MANAGEMENT - IInd Yr** | • To understand Globalization and Global Impact on Indian Economy across Sectors<br>• To describe the features of the International Business Environment<br>• To apply the Models of International Human Resource Management<br>• To analyse the strategies required for the Human Resource Management<br>• To evaluate various strategic management tools in industries to gain a competitive advantage<br>• To implement strategic practices in Human Resource Management |
| **THERAPEUTIC INTERVENTION IN SOCIAL WORK - IInd Yr** | • To gain knowledge on the concept of Therapeutic Intervention in Social Work.<br>• To Identify the role of social workers in clinical practice and help accordingly. |

| | |
|---|---|
| | • To apply the therapeutic approach during intervention.<br>• To Integrate indigenous and holistic therapeutic practices<br>• To adapt to current trends in healing<br>• To plan the Psychosocial interventions |
| **FIELD WORK - IV**<br>**COMMUNITY DEVELOPMENT (CSR SETTING) - IInd Yr** | • To demonstrate an understanding of the nature, structure and role of organisations.<br>• To analyse the CSR functions of different kind of organisations<br>• To Identify the strategic CSR Functions of different kinds of industries.<br>• To demonstrate knowledge, skills, attitude and values required for working in the CSR sector.<br>• To undertake projects unique to the communities.<br>• To evaluate the CSR regulation act applicable to the industries. |
| **FIELD WORK - IV**<br>**HUMAN RESOURCE MANAGEMENT (Service Sector) - IInd Yr** | • To demonstrate an understanding of the nature, structure and role of organisations of the service sector<br>• To analyse the business operations and functions of organisations of the service sector<br>• To Identify the strategic Human Resource functions of the service sector<br>• To demonstrate knowledge, skills, attitude and values required for |

| | |
|---|---|
| | working in service sector in the areas of personnel management, labour welfare, industrial relations<br>• To undertake projects unique to the service sector<br>• To evaluate the labour legislations applicable to service sector |
| **SEMESTER IV**<br>**FIELD WORK FOR PSYCHIATRIC SOCIAL WORK - IInd Yr** | • Understanding the different types of health issues.<br>• knowing the different kinds of NGOs working for the different kinds of communities in solving the problem in the personal environment context.<br>• To be able to understand the role of social worker in health setting.<br>• Evaluate the role, characteristics and skills of a social work and critically evaluate the same.<br>• Develop theoretical expertise and knowledge in health setting.<br>• Understanding the role of multidisciplinary team in a hospital. |
| **RESEARCH PROJECT - IInd Yr** | • To students will be able to conceptualize, formulate and conduct research project.<br>• To enable to see the linkages between practice, research, theory and their roles<br>• To apply skills for use of library and documentation services for research.<br>• To acquire analytical skills within the field of Social Work research |

| | |
|---|---|
| | • To understand the application of Statistics in Social Work Research<br>• To enhance abilities to prepare project report. |
| **BLOCK FIELD WORK TRAINING - IInd Yr** | • To explain the competencies required for practicing social work methods<br>• To evaluate challenges faced by clients and formulate social work intervention strategies based on specialization settings<br>• To demonstrate professional skills during on-the-job training<br>• To develop professional competence by adhering to professional standards<br>• To take initiative in the Block Field for the development of the Institution / Organization.<br>• To prepare a module and report for the Block Field Work. |

PRINCIPAL
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153

NANJIL CATHOLIC COLLEGE OF ARTS & SCIENCE
KALIYAKKAVILAI 629 153 K.K. DISTRICT TAMILNADU INDIA

Head
Department of Social Work
Nanjil Catholic College of Arts & Science
Kaliyakkavilai - 629 153, Tamil Nadu.