

Govt. College Chittur

FYUGP 2024

MINOR & MDC

Course Description

Arabic

Basic of Translation,

Basic of Arabic writing

എന്നിവയാണ് അറബിക് മൈനറുകൾ.

ഈ വിഷയങ്ങൾ പഠിച്ചാലുള്ള തൊഴിൽ സാധ്യതകൾ:

1. ആകാശവാണി, ദൂരദർശൻ എന്നീ വാർത്താ മാധ്യമങ്ങളിലും കേന്ദ്രസർക്കാരിന്റെ (ഹ്യൂമൻ റിസോഴ്സ് ഡവലപ്മെന്റ്) സാംസ്കാരിക വകുപ്പ് തുടങ്ങിയവയവയിലും അറബിക് ട്രാൻസലേറ്ററാവാം.
2. വിവിധ രാഷ്ട്രങ്ങൾ തമ്മിലുള്ള നയതന്ത്രചർച്ചകളിലും അന്താരാഷ്ട്ര കൂടിയായലോചനകളിലും ഭാഷാ വിവർത്തകന്മാരുടെ തസ്തികയുണ്ട്.
3. ഇന്ത്യയുടെ തലസ്ഥാന നഗരിയിൽ 25 ഓളം അറബ് രാഷ്ട്രങ്ങളുടെ എംബസികളുണ്ട്. വിദേശ രാഷ്ട്രങ്ങളിൽ ഇന്ത്യയുടെ വിദേശ എംബസികളും സ്ഥിതിചെയ്യുന്നു. ഇത്തരം സ്ഥാപനങ്ങളിൽ തൊഴിൽ നേടാം.
4. കമ്പ്യൂട്ടറിലെ അറബിക് ഓപ്പറേറ്റിംഗ് സിസ്റ്റത്തിൽ ഡി.ടി.പി.അറബിക് ടൈപ്പിങ്ങിലും യോഗ്യതയും ഭാഷാപരിജ്ഞാനവും നേടിയാൽ വിവിധ കമ്പനികളിൽ നല്ല ശമ്പളത്തോടെ ജോലി ചെയ്യാനുള്ള അവസരങ്ങളുണ്ട്.
5. അറബി-ഇംഗ്ലീഷ് ഭാഷാ പരിജ്ഞാനവും, കമ്പ്യൂട്ടർ യോഗ്യതയും ഉള്ളവർക്ക് ആശയ വിനിമയ പാടവമനുസരിച്ച് വാർത്താമാധ്യമങ്ങളിൽ അവതാരകരായും കമ്പ്യൂട്ടർ സോഫ്റ്റ്‌വെയർ രംഗത്തും സാധ്യതകളേറെയാണ്.
6. അറബിക് ഡി.ടി.പി, ടൈപ്പ് റൈറ്റിംഗ്, സ്റ്റേനോഗ്രാഫർ, ട്രാൻസ്ലേഷൻ, വിസ ട്രാൻസ്ലേഷൻ തുടങ്ങിയ സ്വയം തൊഴിൽ സംരംഭങ്ങൾ തുടങ്ങാനും അവസരങ്ങളുണ്ട്.
7. ഓഫീസുകളിലും സ്ഥാപനങ്ങളിലും അക്കൗണ്ടന്റ്, സെക്രട്ടറി എന്നീ തസ്തികകളിലും സാധ്യതകളുണ്ട്.
8. സ്വദേശത്തും വിദേശത്തുമുള്ള പത്രമാസികകളിലും ഇന്റർനെറ്റ്, ഓൺലൈൻ എഡിഷനുകളിലും ലേഖകന്മാരായും വിവർത്തകരായും ജോലി ചെയ്യാം.

Botany

Minor and MDC Courses

Minor Course

Minor Course: **Botanical Diversity**

In this minor course, there are three courses covered in three semesters, and all the courses have both theory and practical sessions.

Semester 1: In the first semester the student has to cover the course **Plant Ecology, Conservation and Plant Interactions** course code **BOT1MN101**. This course offers basic knowledge related to the relationship between plants and their environment, the importance of conservation efforts and the interactions between different plant species.

Semester 2: The course covered in the second semester is **Plant Morphology, Physiology & Plant Resources** (Course Code: **BOT2MN101**)

This course offers a comprehensive study of the structure, function, and utilization of plants. Students will explore the morphology of plants and the physiological processes that occur within plants. Furthermore, students will learn about the diverse uses of plants as valuable resources for food, medicine, and more.

Semester 3: **Plant Diversity & Angiosperm Taxonomy** (Course Code: **BOT3MN201**) is the course covered in the third semester

This course covers a wide range of topics related to the classification and identification of plants. Students will learn about the diversity of plant species and the characteristics that define different plant groups. The course will also cover the Taxonomy of Angiosperms and the methods and techniques used in it, helping students to identify the wide range of plant species based on their morphological characteristics.

(MDC).

Semester1: MDC

Multi-Disciplinary Course: **Plant propagation**

The MDC offered in the first semester is **Plant Propagation -Course Code: BOT1FM 105(2)**

This course covers techniques for plant propagation and the utilization of plant resources. The course helps the students to learn about various methods of plant propagation including seed propagation, cutting, grafting, layering, budding and tissue culture. No practical sessions for this course

Chemistry

At the end of the BSc Chemistry Honours programme at Calicut University, a student would get A solid foundation for understanding the physical world, developing critical skills, contributing to societal advancements, and pursuing a wide range of fulfilling careers. Chemistry explains the composition, structure, properties, and reactions of matter. It helps us understand the world around us, from the composition of everyday materials to complex biological processes. Chemistry requires logical thinking, analysis, and problem-solving skills, **interdisciplinary connections** with other sciences such as biology, physics, environmental science, and medicine. Chemistry drives technological advancements across pharmaceuticals, materials science, agriculture, and energy. Understanding chemical principles is essential for making informed decisions on issues like food safety, energy sources, and public health. Chemistry opens doors to diverse career paths. Graduates can pursue careers in research, education, healthcare, industry, environmental management, and many other fields.

Minor Courses

MINOR 1: BASIC INORGANIC AND BIO-INORGANIC CHEMISTRY

Inorganic chemistry focuses on the properties and behaviour of inorganic compounds, including metals and their complexes, whereas bioinorganic chemistry explores the role of metal ions in biological systems and their applications in biochemical processes. Basic principles of analytical chemistry are included. To master the laboratory skills acid-base titration, and redox titration experiments are incorporated into the practical.

MINOR 2: INORGANIC CHEMISTRY I

This course provides a broad foundation in chemical principles and applications, preparing individuals for careers in industry, research, academia, and various interdisciplinary fields. A few basic topics in the emerging area of Nanochemistry are also introduced in this course. The basic laboratory safety, concepts in volumetric analysis and related practical experiments are also covered.

MINOR 3: BASIC INORGANIC AND GREEN CHEMISTRY

Provides basic knowledge in inorganic chemistry and green chemistry. Basic principles of analytical chemistry are included. Green chemistry, also known as sustainable chemistry is an emerging area that focuses on designing chemical processes and products that minimize the use and generation of hazardous substances. It aims to promote environmental sustainability by reducing pollution, conserving resources, and improving the overall efficiency of chemical processes. To

master the laboratory skills acid-base titration, and redox titration experiments are incorporated into the practical.

Commerce

Minor courses in the Commerce Department

In the ever-changing economic environment of today, entrepreneurship stands as a key driver of innovation, economic expansion, and the creation of job opportunities. Understanding the significance of instilling an entrepreneurial mindset in students, a comprehensive minor program in entrepreneurship is structured into two streams: A1, Entrepreneurial Finance, and A2, Entrepreneurial Leadership. This program provides students with vital knowledge and skills essential for success in the realm of entrepreneurship. Highly relevant in the context of the modern economy, where innovation and agility are key drivers of success, the minor in entrepreneurship equips students with a solid understanding of entrepreneurship fundamentals, accounting and finance principles, financial strategies for start-ups, entrepreneurial marketing, leadership, and project management. Emphasizing practical application, the program offers projects and case studies that provide valuable insights into the challenges and opportunities associated with starting and managing a business venture. This practical exposure enhances students' problem-solving skills and instils confidence in their ability to apply theoretical concepts in real-life scenarios. Upon completion of the program, students are prepared to embark on their entrepreneurial journey, equipped with the necessary tools and knowledge to launch their start-up or join an existing entrepreneurial venture. The entrepreneurship minor program also serves as a stepping stone for students interested in pursuing further studies in the field of entrepreneurship. Graduates can opt for specialized master's programs such as M.Com in Entrepreneurship or MBA in Entrepreneurship to deepen their understanding and expertise. Moreover, the program opens up avenues for research in the field of entrepreneurship, enabling students to explore emerging trends, innovative business models, and best practices.

GROUPING OF MINOR COURSES IN COMMERCE

Group No.	Sl. No.	Course Code	Title	Semester	Total Hrs	Hrs/Week	Credits	Marks		
								Internal	External	Total
1		TITLE OF THE MINOR: (GROUP A) ENTREPRENEURSHIP (for students across all disciplines, including commerce) A1: ENTREPRENEURIAL FINANCE								

	1	COM1MN101	Fundamentals of Entrepreneurship	1	75	5	4	30	70	100
	2	COM2MN101	Accounting and Finance for Entrepreneurs	2	75	5	4	30	70	100
	3	COM3MN201	Financial Strategy for Start-ups	3	75	5	4	30	70	100
	4	COM8MN301	Business Model Development	8	60	4	4	30	70	100
2		A2: ENTREPRENEURIAL LEADERSHIP								
	1	COM1MN102	Entrepreneurial Marketing	1	75	5	4	30	70	100
	2	COM2MN102	Leadership and Team Building	2	75	5	4	30	70	100
	3	COM3MN202	Social Entrepreneurship	3	75	5	4	30	70	100
	4	COM8MN302	Project Management	8	60	4	4	30	70	100

Computer Science

Minor & MDC Details

The Computer Science department is offering a single Minor Course and a Multi-Disciplinary Course(MDC). Minor Courses contain Practical Sessions & Theory hours but MDC have only theory sessions.

Minor Course

Semester 1

CSC1MN101 Exploring Computer Basics & Computational Thinking

Semester 2 CSC2MN101 Foundations of C Programming

Semester 3

CSC3MN201 Python Programming

The Syllabus of the First-semester minor course mainly Focuses on Computer Fundamentals such as Hardware, Software, Number systems and Conversions, Computer codes, Memory, I/O devices, Algorithms & Flowcharts etc. Second & Third sem syllabus focuses on Programming Languages such as C & Python respectively.

MDC

Semester 1

CSC1FM105 Data Analysis and Visualisation Through Spreadsheets

This course provides a comprehensive introduction to Spreadsheets, focusing on understanding formulas, functions, data organization, analysis techniques, and data visualization. Participants will gain skills in spreadsheet management, data cleansing, analysis, and visualization using Excel's various tools and features.

Economics

MINORS OFFERED BY THE DEPARTMENT OF ECONOMIS

- 1. MONETARY POLICY IN PRACTICE**
- 2. SECTORAL DYNAMICS IN INDIAN ECONOMY**

- 1. MONETARY POLICY IN PRACTICE**

SEMESTER 1- ECOIMN 102 Monetary Tools for Policy Formulation

SEMESTER 2- ECO2MN102 Monetary Policy and Stabilisation

SEMESTER 3- ECO3MN202 Monetary policy in India

This paper mainly concentrates about the various monetary policy tools introduced by the central bank to control the instability in the economy. Some of the most popular career fields in studying monetary economics are:

- **Economist:** An economist analyzes and interprets economic data to forecast market trends, estimate demand, and identify potential risks.
- **Financial Analyst:** A financial analyst helps businesses and organizations make informed investment decisions by analyzing financial data and providing recommendations on stocks, bonds, and other financial instruments.
- **Market Research Analyst:** A market research analyst gathers and analyzes data on consumer behavior, preferences, and demographic trends to help businesses develop effective marketing strategies.

2. **SECTORAL DYNAMICS IN INDIAN ECONOMY**

SEMESTER 1- ECOIMN 103 Sectoral contributions in Indian economy

SEMESTER 2- ECO2MN103 Industrial policies in India

SEMESTER 3- ECO3MN203 Agricultural development in India

This paper concentrates on various current issues in the Indian economy. This paper is highly useful to UPSC aspirants as well as job seekers in various government sectors

Electronics

Minor Course

ELE1MN 101 Electronic Fundamentals (P)

Description

- Paper deals with basic concepts of Electronic components, test and measuring instruments and basic circuits.
- Course is designed in such a way that a student with 10th level basic knowledge in science can easily understand the concepts.
- Topics in the syllabus are distributed in both theoretical and practical aspects of fundamentals.

MDC

ELE1FM 105 Clean Energy Solution

- Open to all students irrespective of their pre knowledge.
- This course serves as an introduction to the fundamental concepts of clean energy, emphasizing its role in sustainable development.
- Participants will explore a wide range of energy sources, with a particular focus on renewable technologies, and gain insights into the solar power generation, components of solar system and their functions.

English

Department of English

Minor:

ENG1MN 102 - *The Language of Digital Space: English and New Media*

The course is designed for the new-age generation, allowing students to use popular media platforms and create collaborative spaces with empathy and social responsibility. It is an analytical syllabus, enriched by student participation and exploring digital media content as cultural texts for analysis.

MDC

ENG1FM105 Introducing Print and Digital Narratives

COURSE DESCRIPTION

The course aims to generate an aesthetic and humane sensibility that will equip learners to appreciate and accept various forms of life and art. It offers a chance to enhance English language proficiency and sensibility for personal and professional growth.

Geography

MINOR COURSES

1. Climate Science	<ul style="list-style-type: none">- GEOIMN 101 Weather and Climate Change - GEO2MN 101 Climate Change and Sustainable Development - GEO3MN 201 Mitigation and Adaptation to Climate Change
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Course Summary: The Weather and Climate Change course delves into the dynamics of Earth's atmosphere, examining meteorological phenomena, climate patterns, and their interconnections. Students analyse the drivers of weather events and explore the long-term trends shaping global climates. Emphasis is placed on understanding human-induced alterations to the climate system and strategies for adaptation and mitigation. Through a combination of theory and practical applications, learners gain insight into the complexities of weather and climate dynamics in a changing world

2- Disaster Management	<ul style="list-style-type: none">- GEOIMN 102 Introduction to Disaster Management - GEO2MN 102 Disaster Management Processes GEO3MN 202 Disaster Mitigation and Management
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Course Summary: Introduction to Disaster Management provides a foundational understanding of disaster risk reduction, response, and recovery. Topics include disaster types, risk assessment, emergency planning, and community resilience. Through case studies and practical exercises, students learn to analyze disaster impacts and implement effective

management strategies. This course equips learners with essential skills to mitigate risks and support communities in times of crisis.

3-Geoinformatics

- GEOIMN 103 Introduction to Remote Sensing

- GEO2MN 103 Fundamentals of GIS

- GEO3MN 203 Spatial Analysis

Course Summary: Introduction Geoinformatics covers the integration of geospatial data and technologies for analysis and decision-making. It explores Geographic Information Systems (GIS), Remote Sensing (RS), Aerial Photogrammetry, and their applications in mapping, environmental monitoring, urban planning, and natural resource management. Students learn data acquisition, manipulation, visualization, and spatial analysis techniques. The course emphasizes geospatial database management, metadata standards, and ethical considerations in geoinformatics. Practical exercises and projects enable students to develop skills in geospatial data handling, interpretation, and communication. Geoinformatics plays a crucial role in addressing contemporary challenges related to sustainable development and spatial planning.

4- Digital Surveying

- GEOIMN 104 Fundamentals of Surveying

- GEO2MN 104 Conventional Surveying

- GEO3MN 204 Digital Surveying

Course Summary: The course outcome of Fundamentals of Surveying aims to provide students with a foundational understanding of surveying principles and techniques. Students will learn basic concepts such as measurement, data collection, and mapping. They will develop skills in using surveying instruments and applying mathematical computations to analyse survey data. By the end of the course, students should be equipped with the knowledge and abilities necessary for entry-level surveying tasks and further study in the field.

MULTI-DISCIPLINARY COURSE

GEO1FM105

Natural Resource Management

Natural Resource Management encompasses the sustainable utilization and conservation of Earth's resources, including water, soil, forests, and minerals. This interdisciplinary field integrates scientific, economic, and social perspectives to address environmental challenges while balancing human needs and ecological integrity. Topics include biodiversity conservation, land use planning, renewable energy, and sustainable development practices.

Hindi

DEPARTMENT OF HINDI MINOR COURSES

These courses are designed to qualify the students to do their Post Graduation in Functional Hindi and also in Translation Studies offered by the Universities and Higher Education Institutions and also to equip them to get jobs in the field of translation and interpretation. They have the opportunities to get job in Central Government Offices, Official Language Commission, Indian Parliament, Bank , LIC, Railway, Media Institutions, Educational Institutions, other Public and Private Institutions. They have more chances to get appointment as Translators, Interpreters, Hindi Officers/ Official Language Officers etc.

The students who choose these minor courses, if they wish to pursue their Post Graduation in Functional Hindi and in Translation Studies in the National Universities which offers Post Graduation Programmes in Functional Hindi and also in Translation Studies, such as Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya, Wardha, JNU Delhi, Banaras Hindu University Varanasi ,Aligarh Muslim University, Sant Gahira Guru University,Sarguja,Chattisgarh,VisvaBharatiUniversity,Santiniketan, University of Calicut .

MINOR -1

PRAYOJANMOOLAK HINDI I (FUNCTIONAL HINDI I)

		TITLE				CREDITS	MARKS		
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S L N O.	COURSE CODE		SEMESTE R	TOTA L HRS	HRS/ WEEK		INTERNA L	EXTERNA L	TOTAL
1	HIN1MN 101	PRAYOJANMOOLA K HINDI (FUNCTIONAL HINDI)	1	60	4	4	30	70	100
2	HIN2MN 101	ANUVAD- PRAKRIYA AUR PRAVIDHI (TRANSLATION – PROCESS AND TECHNIQUES)	2	60	4	4	30	70	100
3	HIN3MN 201	HINDI MEIN PATRACHAR AUR SACHIVIYA ABHYAS (CORRESPONDEN CE AND SECRETARIAL PRACTICE IN HINDI)	3	60	4	4	30	70	100

MINOR -2

PRAYOJANMOOLAK HINDI II (FUNCTION HINDI II)

S L N O.	COURSE CODE	TITLE	SEMESTE R	TOTA L HRS	HRS/ WEEK	CREDITS	MARKS		
							INTERNA L	EXTERNA L	TOTAL
1	HIN1MN 102	E HINDI	1	60	4	4	30	70	100

2	HIN2MN 102	HINDI BHASHA MEIN COMPANY PATRACHAR (CORPORATE CORRESPONDENC E IN HINDI LANGUAGE)	2	60	4	4	30	70	100
3	HIN3MN 202	BHARTIYA PRASHASANIK PRANALI AUR RAJBHASHA HINDI (INDIAN ADMINISTRATIVE SYSTEM AND OFFICIAL LANGUAGE HINDI)	3	60	4	4	30	70	100

History

DEPT OF HISTORY - FYUGP 2024-24

MINOR, MDC COURSE DETAILS.

MDC

HIS1FM105-2 Kerala Towards Modernity 1766 –
1889

Course Overview

This course explores the transformation of Kerala towards modernity. It will focus on the influence of modern values, colonial interventions, the role of reformers, the legacy of the Indian national movement, and recent trends.

MINOR

MINOR 1

HIS1MN115 Modern Indian History: 1757-Early Twentieth Century.

Course Overview:

This course is designed to make awareness among the students on history of British colonialism in India and how the colonial rule paved the way for the process of impoverisation and skewed modernisation and the growth of national movement. This course also provides the students an idea of different ideological dimensions of national movement.

MINOR 2

HIS1MN105 History of Modern World-I

Course Overview

This course examines the Renaissance and Reformation, exploring the transformative changes in art, literature, religion, politics, and science, along with the rise of absolutism and Enlightenment ideas that shaped modern Western society.

Malayalam

മൈനർ - സെറ്റ് - 01 -

ക്ലാസിക്കൽ മലയാളം

MAL1 ML 102 - കഥാസാഹിത്യം

മലയാളത്തിലെ നോവൽ, ചെറുകഥാസാഹിത്യ രൂപങ്ങൾ ആസ്വദിക്കാനും വിലയിരുത്താനും ഉതകുന്ന രീതിയിലാണ് ഈ കോഴ്സ് രൂപപ്പെടുത്തിയിട്ടുള്ളത്. കേരളസമൂഹത്തിലെ പരിണാമങ്ങൾക്കനുസൃതമായി ഉണ്ടായ സാഹിത്യരൂപങ്ങളാണ് നോവലും ചെറുകഥയും. അതുകൊണ്ടുതന്നെ സാമൂഹികതലത്തിൽ നിന്നുകൊണ്ട് ഈ സാഹിത്യരൂപങ്ങളെ സമീപിക്കേണ്ടതാണ്. യു. പി. എസ്. സി. സിവിൽ സർവീസ് പരീക്ഷകളിൽ മലയാളം തിരഞ്ഞെടുത്ത് പഠിക്കുന്ന വിദ്യാർത്ഥികൾക്ക് സഹായകമാകുന്ന വിധത്തിലാണ് ഈ കോഴ്സിന്റെ രൂപരേഖ തയ്യാറാക്കിയിരിക്കുന്നത്.

മൈനർ - സെറ്റ് - 02

വിമർശനാത്മക പഠനങ്ങൾ

MAL1MN103 ജെൻഡർ പഠനങ്ങൾ

ലിംഗപദവിയുടെ അടിസ്ഥാനത്തിൽ കേരളീയസമൂഹത്തെ വിമർശനാത്മകമായി സമീപിക്കാനും പൊതുജനങ്ങളിൽ ലിംഗപദവി സംബന്ധിച്ചിടങ്ങളിൽക്കൂന്നി വിവേചനങ്ങളെയും സ്ത്രീ- ലിംഗ ലൈംഗിക സ്വത്വനിർമ്മിതികളെയും ആണത്തക്കൊഴുക്കളെയും അപഗ്രഥനാത്മകമായി വിലയിരുത്താനും വിദ്യാർത്ഥികളെ പ്രാപ്തരാക്കുക എന്നതാണ് ഈ കോഴ്സിന്റെ ലക്ഷ്യം. ലിംഗസമത്വത്തിലൂന്നിയ കേരളീയസമൂഹം രൂപപ്പെടുത്താൻ പ്രേരിപ്പിക്കുന്നതായിരിക്കണം ഇതിന്റെ വിനിയമം.

മൾട്ടിഡിസിപ്ലിനറി കോഴ്സ് - മലയാളം

സർഗ്ഗാത്മകതയും സാഹിത്യവും

സാഹിത്യ രചനക്ക് പിറകിലെ സർഗ്ഗാത്മകമായ വ്യാപാരങ്ങൾ വിദ്യാർത്ഥികൾ അറിയുക എന്നതാണ് ഈ കോഴ്സിന്റെ ലക്ഷ്യം. സാഹിത്യ കൃതികൾ വായിക്കാനും ആസ്വദിക്കാനും വിലയിരുത്താനും പരിശീലനം ആവശ്യമുണ്ടെന്ന് വിദ്യാർത്ഥികൾ മനസ്സിലാക്കേണ്ടതുണ്ട്. സാഹിത്യ രചനയുടെ ഗൗരവവും അതിന്റെ പിന്നിലുള്ള സാഹിത്യകാരരുടെ പ്രയത്നവും വിദ്യാർത്ഥികളെ ബോധ്യപ്പെടുത്താനുതകുന്ന സിലബസാണ് ഈ കോഴ്സിൽ ഉൾപ്പെടുത്തിയിട്ടുള്ളത്.

Mathematics

Description of Minors, Vocational Minors, and Multidisciplinary course offered by Mathematics department

Minor 1: Foundations for Mathematical Applications

Semester 1: Differential Calculus

Semester 2: Calculus and Matrix Algebra

Semester 3: Differential Equations and Fourier Series

Offering courses such as Differential and Integral Calculus, Calculus and Matrix Algebra, and Differential Equations and Fourier Series as a minor to Physics, Chemistry, and Electronics major undergraduate students provides essential mathematical tools, crucial for mastering complex concepts in their primary fields of study. For instance, physics students need a strong grasp of calculus and differential equations to understand topics like mechanics, electromagnetism, quantum mechanics, and thermodynamics. Electronics students rely on calculus and matrix algebra for analyzing and designing circuits, signal processing, and control systems. Chemistry majors benefit from these courses in areas such as physical chemistry, chemical kinetics, and quantum chemistry. Furthermore, integrating these mathematics courses into the curriculum facilitates interdisciplinary learning and professional development.

Minor 2: Mathematical Economics

Semester 1: Principles of Micro Economics

Semester 2: Optimization Techniques in Economics

Semester 3: Applied Mathematics for Economic Analysis

Microeconomics provides insights into individual economic behavior, market dynamics (like supply and demand), and welfare economics, crucial for informed business decisions and policy recommendations. Optimization techniques such as linear programming, calculus of variations, and dynamic programming are essential in economics for maximizing or minimizing objectives under constraints, applied extensively in resource allocation, production planning, and portfolio management. Mathematics for Economic Analysis teaches advanced tools like calculus, linear algebra, and differential equations, vital for modeling economic phenomena, solving complex problems, and proving theories rigorously in economics.

Vocational Minor courses are offered in 1st semester, 2nd semester, 3rd semester and 8th semester. In all the semesters, there will be 5 hours allocated to these courses of which 3 are theory and 2 are practicals.

Vocational Minor 1: Introduction to AI

Semester 1: PYTHON PROGRAMMING

Semester 2: LINEAR ALGEBRA FOR MACHINE LEARNING

Semester 3: INTRODUCTION TO MACHINE LEARNING

Semester 8: INTRODUCTION TO ARTIFICIAL INTELLIGENCE

Python programming is a de facto programming language for Artificial intelligence because of its simplicity, vast libraries, community support, and free software. Python has applications in Machine Learning, the study of neural networks, Natural Language Processing, and data handling because of its easy handling. One of the fundamental areas of Mathematics is Linear Algebra, which is important for learning, and implementing AI algorithms. Linear Algebra can represent the Data, Reduction of dimensions, neural networks, etc. Understanding and applying linear algebra concepts is crucial for developing AI models and algorithms. Python, with its rich set of libraries, provides robust tools for implementing these mathematical foundations and building sophisticated AI systems. Being a part of Artificial Intelligence Machine Learning (ML) is a subject that focuses on developing algorithms that allow computers to learn from and make predictions or decisions based on data. In contrast to traditional programming, where explicit instructions are coded, machine learning models try to identify patterns and make decisions with minimal human intervention.

Vocational Minor 2: Introduction to Data Science

Semester 1: Statistics for Data Science

Semester 2: R Programming

Semester 3: Data Mining

Semester 8: Data Visualization

Data science is an interdisciplinary field that combines statistics, computer science, and domain knowledge to extract insights and knowledge from data. For undergraduate students, it involves learning how to collect, clean, and analyze large datasets using various tools and techniques. Core topics typically include programming (often in Python or R), statistical analysis, machine learning, data visualization, and data management. The goal is to turn raw data into actionable information, which can be used in diverse areas such as business, healthcare, finance, and more. This field emphasizes practical skills alongside theoretical understanding, preparing students for a variety of careers in technology and analytics.

MDC

Multi-disciplinary course : MATHEMATICS FOR COMPETITIVE EXAMINATIONS

Semester 1: MATHEMATICS FOR COMPETITIVE EXAMINATIONS- PART I

Semester 2: MATHEMATICS FOR COMPETITIVE EXAMINATIONS- PART II

“Mathematics for Competitive Examinations” generally refers to a course or preparation focused on mathematical topics commonly tested in various competitive exams. It covers a range of topics including basic arithmetic, different types of reasonings, and roots to more advanced concepts like financial mathematics, time-speed-distance calculations, and problem-solving techniques. Preparing for mathematics in competitive exams require a systematic approach focusing on fundamental concepts, problem-solving skills, and exam-specific strategies. This course tailored for these exams aim to equip students with the knowledge and confidence needed to excel in mathematics and achieve their academic or professional goals.

Music

Minor

Description

Minor group 1-PRELIMINARY LESSONS OF MUSIC

MUS1MN 101 Preliminary Lessons-1 (Practical)

കർണ്ണാടക സംഗീതത്തിന്റെ അടിസ്ഥാന പാഠങ്ങൾ മുതൽ പഠിപ്പിക്കുന്നു

Minor group 2- MUSICAL FORMS AND OTHER TECHNICALITIES

MUS1MN 102 Introduction to Musical Forms

കർണ്ണാടക സംഗീതത്തിലെ വിവിധ സംഗീത രൂപങ്ങളെ പരിചയപ്പെടുത്തുന്നു

Minor group 3- ETHNOMUSIC STUDIES

(preferable for Music students & students of other Major disciplines)

MUS1MN103 Life and Contributions of

Prominent Vocalists of Carnatic Music

കർണ്ണാടക സംഗീതകച്ചേരി, പ്രഗത്ഭരായ സംഗീതജ്ഞർ, അവരുടെ സംഭാവനകൾ എന്നിവയെക്കുറിച്ച് പഠിക്കാം, വിലയിരുത്താം

MDC

MUS1FM 105-2 Popular Songs

(Practical)

ദേശഭക്തിഗാനങ്ങൾ, ലഘു ശാസ്ത്രീയ ഗാനങ്ങൾ, നാടൻ പാട്ടുകൾ, സിനിമാ ഗാനങ്ങൾ തുടങ്ങിയ ജനപ്രിയ ഗാനങ്ങൾ പഠിക്കാം.

സംഗീതത്തിലുള്ള അഭിരുചി പരിശോധിച്ചതിനു ശേഷമായിരിക്കും എല്ലാ കോഴ്സുകളിലേക്കും പ്രവേശനം നൽകുക.

Philosophy

MINOR COURSE

Philosophy 1 (Ethics)

PHLMN101 Fundamentals of Ethics

Course Description

This course offers philosophical instruction in ethics, aiming to integrate diverse conceptual frameworks for analyzing ethical problems. It delves into the nature of ethical dilemmas and the process of ethical reasoning.

1. Critically assess prevalent ethical theories.
2. Comprehend and assess the application of rational argumentation in moral discourse.
3. Analyse, discuss and critique ethical problems.
4. To compare the theories of ethics and present human life
5. To develop moral personality
6. To improve life skill
7. To develop character
8. Helpful to the profession like Lawyer, Social Worker
9. Study PG in MA Ethics or Moral Science

MDC

PHL1FM105 Philosophy of Education

Course Description

This course helps the students to familiarize themselves with multidiscipline education and its relation to the philosophy of education. The educational philosophy of Western as well as Indian thinkers and their important concepts are included in this course. The course contains views about the education of various thinkers like Aurobindo, Gandhiji, J Krishnamoorthi, Paulo Freire, etc. The

importance of Value Education is also discussed with special reference to Swami Vivekananda and Gandhi.

1. Identify the fundamental characteristics of the philosophy of Education.
2. Evaluates the different concepts and theories of educational philosophy at different times.
3. Analyze and compare both Indian and Western philosophies of education.
4. Create a new method to express the knowledge through the micro-teaching practices in the course.
5. Apply the suitable method of communication in the light of micro-teaching
6. To Improve Communication Skills, Familiar with Effective Teaching Methods
7. Develop concept the Education Plan
8. Help to design Aims of Education a) Knowledge Aim, b) Vocational Aim, c) Character Aim etc.

Physical Education

MDC

PEN1FM105(2) Lifestyle Disease and Physical Activity.

Course Description:

In this dynamic and interactive course, we'll explore the intricate relationship between physical activity and lifestyle diseases, such as diabetes, heart disease, and obesity. Through a combination of lectures, discussions, and hands-on activities, you'll learn how regular physical activity can be a potent tool in preventing and managing these diseases.

Course Objectives:

- Understand the epidemiology and pathophysiology of lifestyle diseases
- Examine the role of physical activity in preventing and managing lifestyle diseases
- Analyze the impact of sedentary behavior on overall health
- Design and implement personalized physical activity plans to mitigate lifestyle disease risk
- Apply evidence-based strategies to promote sustainable behavior change.

This course aims to empower students with knowledge and skills needed to promote healthy living and prevent lifestyle diseases through informed choices in nutrition and Physical Activity.

Physics

Department of Physics

Description of Minor and Vocational Minor

Minor 1 : MATERIALS PHYSICS

Semester 1 : Properties of Matter and Thermodynamics (PHY1MN102)

Semester 2 : Modern Physics and Nuclear Physics (PHY2MN102)

Semester 3: Solid-State Physics and Spectroscopy (PHY3MN202)

This minor course for Chemistry, Mathematics, Electronics major undergraduate students provides an idea regarding key concepts like heat, work and energy, thermodynamic processes and laws of thermodynamics. The course envisages how matter and energy interact in physical and chemical processes. Modern Physics deals with technology and engineering, medical physics. Highlights research and development in energy sector. Nuclear physics puts light into nuclear energy, National security, medical applications and Environmental science. Solid-state physics deals with electronics and semiconductors, Material science, Renewable energy, Telecommunications and Nano technology. Spectroscopy guides into the areas of chemical analysis, medical diagnostics, material science and forensic science. The course is designed in such a way that a student with +2 level knowledge can easily understand the concepts and its relevance

Vocational Minor – Data Analysis in Physics using Python

Semester 1 : Python Basics (PHY1VN102)

Semester 2: Data Analysis in Physics with Python (PHY2VN102)

Semester 3: Data Analysis in Physics using Machine Learning (PHY3VN202)

Semester 4 : Applications of Advanced Machine Learning and Artificial Intelligence in
Physics (PHY8VN302)

Python is a popular high level programming language with a wide variety of applications. Python is easy to learn and is suitable for beginners and people with prior programming experience. This course lays the foundation necessary for upcoming courses in this basket. We focus on modules like numpy and matplotlib. We build on the knowledge acquired in the first semester, modules for data analysis and data visualization (pandas and seaborn). Statistics necessary for data analysis is introduced as well. We learn the fundamentals of machine learning in this course. Various models of machine learning and techniques to train these models are introduced. Scikit-learn is introduced. Neural Networks and Deep Learning are introduced. TensorFlow / Keras frameworks are introduced. Anyone with an interest in programming can choose this basket of minor courses. Since we start from the basics, prior programming experience is not necessary. Contents of the courses have wide applicability and will be suitable for careers in programming, data science and artificial intelligence. Students who wish to pursue research will be able to acquire necessary scientific computing skills as well.

Political Science

MINOR COURSES IN POLITICAL SCIENCE

Minor I SET 2: INDIAN CONSTITUTION AND POLITICAL SYSTEM

Course Title: INDIAN CONSTITUTION

Course Code: POL1MN102

Semester: 1

Course Summary

This course provides a comprehensive exploration of the Indian Constitution, offering a detailed analysis of its historical evolution, key principles, and fundamental rights.

Minor II (Set 5): HUMAN RIGHTS

Course Title: HUMAN RIGHTS

Course Code: POL1MN105

Semester: 1

Course Summary

The course explores the principles, laws, and historical contexts that define and protect the fundamental rights and freedoms of individuals globally.

Psychology

MINOR COURSES IN PSYCHOLOGY

GROUP 1: FOUNDATIONS OF BEHAVIOUR

The course Gateways to Mind and Behaviour provides insights to understand the meaning of behaviour, and various perspectives of psychology. The students can have a comprehensive understanding of various aspects influencing human behaviour. The course titled Understanding Psychological Disorders aims to provide students with a comprehensive understanding of abnormal behaviour and various psychological disorders. Psychology in Society course aims at Understanding the fundamentals of social psychology, exploring the concept of social perception and influence, group behaviour, and learning social experiments.

GROU P NO:	SL NO :	COURSE CODE	TITLE	SEMESTE R	TOTAL HOUR S	HRS/WEE K	CREDIT S
1.	1	PSY1MN10 1	Gateways to Mind and Behaviour	1	60	4	4
	2	PSY2MN10 1	Understandin g Psychological Disorders	2	60	4	4
	3	PSY3MN20 1	Psychology in Society	3	60	4	4

GROUP 2: DEVELOPMENT & WELLBEING

The course Growth and Development provides insights to understand the details of developmental psychology the course help the students to explore the different aspects of development throughout the lifespan. The course titled

Life span Development outlines the characteristic of lifespan perspective and nature of development. It analyses various theories of development, stages of prenatal period, birth processes etc. The course titled Psychology of well-being deals with Understanding the basics of wellbeing, happiness, gratitude, humour, its resilience aspects and how to enhance wellbeing through mindfulness, stress management, and emotional regulation.

GROU P NO:	SL N O	COURSE CODE	TITLE	SEMESTE R	HRS/WEE K	CREDIT S	TOTAL HOUR S
2.	1	PSY1MN10 2	Growth and Developmen t	1	4	4	60
	2	PSY2MN10 2	Life Span Developmen t	2	4	4	60
	3	PSY3MN20 2	Psychology of Wellbeing	3	4	4	60

Sanskrit

1. Title of the minor -SANSKRIT

MINOR 1- BASIC SANSKRIT

SAN1MN107

2. Title of the minor SANSKRIT

MINOR 2-INDIAN PHILOSOPHY

SAN1MN101

Medium of Question paper is in English

Answer may be written in English or Malayalam for the two minor courses

Statistics

2 Minor Courses

MINOR 1 : DESCRIPTIVE AND INFERENCE STATISTICS

SEMESTER 1 : STA1MN101 : Descriptive Statistics for Data Science

SEMESTER 2 : STA2MN101: Probability Theory I

SEMESTER 3 : STA3MN201 : Statistical Inference using **R**

Descriptive and inferential statistics are two key branches of statistical analysis used to understand data and draw conclusions. Descriptive statistics involve methods for summarizing and describing data sets. This branch focuses on providing a clear and concise summary of the main features of a data set. Common descriptive measures include Measures of Central Tendency, Measures of Dispersion and Graphical representations like histograms, box plots, and scatter plots to visualize the distribution and patterns in the data. Inferential statistics involve techniques for making inferences or predictions about a population based on sample data. This branch of statistics allows researchers to generalize findings from a sample to a larger population. Inferential statistics play a crucial role in decision-making, forecasting, and concluding populations based on limited sample data.

MINOR 2 : STATISTICAL TOOLS FOR GEOSPATIAL DATA ANALYSIS

SEMESTER 1 :STA1MN109 : Elementary Statistics

SEMESTER 2: STA2MN109 : Theory of Probability

SEMESTER 3: STA3MN209 : Statistical Inference

Statistical tools for geospatial data analysis encompass a range of techniques tailored to handle spatially referenced data. These tools are essential for extracting meaningful insights, detecting patterns, and making informed decisions in fields such as geography, environmental science, urban planning, and beyond. Some key statistical tools commonly used in geospatial

data analysis: are Spatial Descriptive Statistics, Spatial Regression, Spatial Interpolation Spatial Clustering and Hotspot Analysis, Spatial Data Visualization and Mapping etc.

These tools and techniques enable analysts and researchers to explore, analyse, and visualize spatial data effectively, uncovering hidden relationships and spatial patterns that can inform decision-making and policy development across various domains.

JOB OPPORTUNITIES:

- Indian Statistical Service (ISS)
- Junior Statistical Officer under Ministry of Statistics and Programme Implementation.
- Statistical Investigator/ Assistant under Department of Economics and Statistics
- Statistician
- Data analyst
- Biostatistician
- Geographic Information System (GIS) Analyst

Tamil

FYUGP Minor

Minor Course I TRANSLATION

TML1MN101 MOZHIPEYARPPIYAL

Course Description

Translation serves as a pivotal tool in bridging cultural divides both within nations and across the globe, offering recognition to countries, societies, and cultures worldwide. It not only facilitates communication but also opens doors to diverse job opportunities on a global scale. Objectives of the Course Translation are as follows:

1. **Develop Language Skills**

The primary goal of the course is to enhance proficiency in languages, both source and target, enabling students to effectively convey meaning and nuances across different linguistic contexts.

2. Expand Knowledge of Translation

Students will delve into various theories, methodologies, and practices of translation, gaining a comprehensive understanding of the discipline and its applications.

3. Acquire Translation Strategies

The course emphasizes the acquisition of practical translation strategies, equipping students with the skills to handle different types of texts and translation challenges effectively.

4. Identify Various Cultures , inventions, style of literature and its contents of other Nations

Through translation, students will explore and appreciate the diversity of cultures around the world, understanding how language reflects and shapes cultural identities.

5. Create Efficient Translators:**

The aim is to cultivate competent and efficient translators who can navigate the complexities of cross-cultural communication with accuracy and sensitivity.

6. Prepare for Higher Studies in Translation:**

The course prepares students who wish to pursue advanced studies or research in the field of translation, providing them with a solid foundation of knowledge and skills.

7. Career Opportunities

Translation offers a gateway to a wide array of career opportunities globally, including roles in international organizations, diplomatic services, publishing houses, localization firms, and freelance translation. In conclusion, the course in Translation not only enhances linguistic abilities and cultural awareness but also empowers individuals to play a crucial role in promoting

understanding and cooperation across borders, making it a valuable pursuit in today's interconnected world.

Minor course – 2 Comparative literature

TML1MN102- Oppilakkiya kolkaikal

Comparative literature is a branch of literature that compares works, authors and creative trends of two or more languages and also study the texts across cultures. Through this comparison we can find out the specific platform occupied by the particular literature.

MDC – 1

TML1FM105 Adippadaith Thamizhilakkanam

This course is designed to teach the basic elements of grammar to enable students to learn Tamil easily and to be able to write and speak fluently in Tamil.

Zoology

Objectives of Minor Course

Course Name . General Zoology

In semester one the student develops understanding in the organisation and functioning of ecosystem , the concept of population, its interactions, biogeochemical cycle, behavioural patterns of animals, their social organisation etc.

Objectives of MDC

Course Name. Reproductive Health and Sex Education

The course is designed to develop awareness in the need of sex education, sexual hygiene, causes of infertility, different assisted reproductive technologies, prenatal diagnostic techniques, fertility control methods etc.