

DEPARTMENT OF MALAYALAM

Year of Establishment - 1967

Course Offered - B.A. Malayalam

First Degree Programme in Malayalam : Language, Culture and Literature Course Structure

Semester No	Course Code	Course Title	Instructional hours/ week	Credit/Course
I	EN 1111.1	Lang. Course I (English 1)	5	4
	ML 1111.1	Lang. Course II (Addl. Language 1) ML/HN/SK	4	3
	EN 1121	Foundation Course I	4	2
	ML 1141	Core Course I- Novel : History	6	4
	ML 1131.1	Compl. Course I, Kerala Culture Part I	3	2
	SK 1131.2	Compl. Course II- Sanskrit I Poetry and Grammar I	3	2
		TOTAL	25	17
II	EN 1211.1	Lang. Course III (English II)	5	4
	EN 1212	Lang. Course IV (English III)	4	3
	ML 1211.1	Lang. Course V (Addl. Lang. II) Prose ML/HN/SK	4	3
	ML 1241	Core Course II (Drama, History Lesson Application)	6	4
	ML 1231	Compl. Course III Kerala Culture Part II	3	3
	SK 1231.2	Compl. Course IV - Sanskrit II Poetry and grammar II	3	3
		TOTAL	25	20
III	EN 1311.1	Language Course VI (English IV)	5	4
	ML 1311.1	Language Course VII (Additional III) ML/HN/SK	5	4
	ML 1321	Foundation Course (Informatics)	4	3
	ML 1341	ആധുനിക സാങ്കേതികവിദ്യയും മലയാളഭാഷാ പഠനവും Core Course III സാഹിത്യ സിദ്ധാന്തങ്ങൾ : പൗരസ്ത്യവും പാശ്ചാത്യവും	5	4
	ML 1331	Compl. Course V പരിസ്ഥിതി : സിദ്ധാന്തവും ആവിഷ്കാരവും	3	3
	SK 1331.2	Compl. Course VI Sanskrit II Drama and Grammar	3	3
		TOTAL	25	21
IV	EN 1411	Language Course(English V)	5	4
	ML 1411.1	Language Course IX (Addl. Language IV) ML/HN/SK വിനിമയം, ഭാഷാവഞ്ചനയും, സർഗാത്മക രചന	5	4
	MI 1441	Core Course IV മലയാള കവിത - പൂർവ്വഘട്ടം	5	4
	ML 1442	Core Course V മലയാള സാഹിത്യ നിരൂപണം	4	3
	ML 1431	Compl. Course VII ദേശീയ എഴുത്ത്, പെണ്ണെഴുത്ത് : സിദ്ധാന്തവും ആവിഷ്കാരവും	3	3
	SK 1431.2	Compl. Course VIII Sanskrit Lyrics Poem, Fables & Translation	3	3
		TOTAL	25	21
V	ML 1541	ഭാഷാരംഗം - ഭാഷാചരിത്രം	4	4
	ML 1542	ചെറുകഥാ പഠനം	4	4
	ML 1543	നാടോടി വിജ്ഞാനീയം	3	2
	ML 1544	ജീവചരിത്രം, ആത്മകഥ, യാത്രാനുഭവം	4	4
	ML 1545	ചലച്ചിത്രപഠനം	4	4
	Open Course			
VI	ML1551.3	മലയാള പത്രപ്രവർത്തനം	3	2
	MI 1641	മാദ്ധ്യമലോകം	5	4
	ML 1642	മലയാള വ്യാകരണം	5	4
	ML 1643	മലയാള കവിത - ഉത്തരഘട്ടം	5	4
	ML 1644	വിവർത്തനം - സിദ്ധാന്തവും പ്രയോഗവും	4	3
	Open Course (ELeCtive)			
	ML1551.3	മലയാള പത്രപ്രവർത്തനം Dissertation/Project-Viva-Voce	3	2

POST GRADUATE & RESEARCH DEPARTMENT OF ECONOMICS

Year of Establishment : 1967

Courses Offered : B.A Economics, M.A. Economics, Ph.D Programme

First Degree Programme in Economics :

Course Structure

Semester No	Course Code	Course Title	Instructional hours/ week	Credit/Course
I	EN 1111	Languages Course 1 (English-1)	5	4
	1111	Languages Course II (Addl.Language) ML/HN/SK	4	3
	EN1121	Foundation Course I	4	2
	EC 1141	Core I Methodology and Perspective of Social Sciences	6	4
	1131	Complementary I	3	2
	1131	Complementary II	3	2
		TOTAL	25	17
II	EN 1211	Languages Course III (English II)	5	4
	1212	Languages Course IV (English III)	4	3
	1211	Language Course V (Addl.Language II) ML/HN/SK	4	3
	EC 1241	Core II Methodology of Economics	6	4
	1231	Complementary III	3	3
	1231	Complementary IV	3	3
		TOTAL	25	20
III	EN 1311	Languages Course VI (English - IV)	5	4
	1311	Languages Course VII (Addl. Languages III) ML/HN/SK	5	4
	EC 1321	Foundation Course II Informatics	4	3
	EC 1341	Core III Basic Tools For Economics	5	4
	1331	Complementary V	3	3
	1331	Complementary VI	3	3
		TOTAL	25	21
IV	EN 1411	Languages Course VIII (English - V)	5	4
	1411	Languages Course IX (Addl. Languages - IV)ML/HN/SK	5	4
	EC 1441	Core IV Micro Economics I	5	4
	EC 1442	Core V Macro Economics I	4	3
	1431	Complementary VII	3	3
	1431	Complementary VII	3	3
		TOTAL	25	21
V	EC 1541	Core VI Micro Economics II	4	4
	EC 1542	Core VII Macro Economy II	4	4
	EC 1543	Core VIII Development Economics	3	2
	EC 1544	Core IX Indian Economy	4	4
	EC 1545	Core X Public Economics	4	4
	EC 1551	Open I Human Resources Management	3	2
		Project/Dissertation	3	-
		Total	25	20
VI	EC 1641	Core XI Kerala Economy	5	4
	EC 1642	Core XII Financial Economics	5	4
	EC 1643	Core XIII Basic Tools for Economics-II	5	4
	EC 1644	Core XIV International Economics	4	3
	EC 1655.1	Open II, Agricultural Economics	3	2
	EC 1655.2	Industrial Economics	-	-
	EC 1655.3	Mathematical Economics	-	-
	EC 1655.4	Econometrics	3	4
EC 1645	Project/Dissertation	4	-	
		Total	25	21

**Syllabus for M.A Degree Programme in Economics
Semester Pattern 2013 Admission onwards**

Course Structure & Mark Distribution

Semester	Paper Code	Title of the paper	Distribution of hrs.per Semester	Instructional hours week (Lecture)	Duration of ESA (Hrs)	Maximum Marks		
						CA	ESA	Total
I	I	Micro Economics-I	120	7	3 hrs	25	75	100
		Economics of growth & Development Indian	110	6	3 hrs	25	75	100
		Economic Policy-1	110	6	3 hrs	25	75	100
	I	Quantitative Methods	110	6	3 hrs	25	75	100
II	II	Micro Economics II	120	7	3 hrs	25	75	100.
		Economics of Social Sector & Envnt/Indian Economy Policy-II (Kerala's Economy)	110	6	3 hrs	25	75	100
	II	Research Meth&Eco Econometrics	110	6	3 hrs	25	75	100
	III	Macro Economics I	120	7	3 hrs	25	75	100
III	III	International Economics-1	110	6	3 hrs	25	75	100
	III	Public Economics	110	6	3 hrs	25	75	100
	Optional I	110	6	3 hrs	25	75	100	
	IV	Macro Economics II	120	7	3 hrs	25	75	100
IV	IV	International Economics II	110	6	3 hrs	25	75	100
	IV	Finance and Capital market	110	6	3 hrs	25	75	100
	Optional II	110	6	3 hrs	25	75	100	
		Dissertation Viva-Voce						100
		Total	1800					1800

CA: Continous Assessment; ESE : End Semester Examination

Optional

1. Welfare Economics

DEPARTMENT OF HISTORY

Year of Establishment - 1998
 Course Offered - B.A. History
First Degree Programme in History :
Course Structure

Semester No	Course Code	Course Title	Instructional hours/ week	Credit/Course
I	EN 1111.1	Language Course I (English 1)	5	4
	ML 1111.1	Language Course II (Addl. Language) ML/HN/SK	4	3
	EN 1121	Foundation Course I	4	2
	HY 1141	Core I Methodology and Perspectives of Social Sciences	6	4
	HY 1131	Complementary I History of Modern India (1857 -1900) For Eco., Islamic Hist & Sociology)	3	2
	Hy 1132 (EN/PL)	Complementary II History of Modern World (1789-1900) For English and Political Science	3	2
		TOTAL	25	17
II	EN 1211.1	Language Course III (English II)	5	4
	EN 1212	Language Course IV (English III)	4	3
	MH 1211.1	Language Course V (Adl Language II) ML/HN/SK	4	3
	HY 1241	Core II Cultural Formation of the Pre Modern World	6	4
	HY 1231 (EC/IHSG)	Complementary III-History of Modern India (1901-1920) For Eco., Islamic History and Sociology)	3	3
	Hy 1231.2	Complimentary IV Hist. of Modern World (1901-1920 for Eng. & Pol.Sci.	3	3
		TOTAL	25	20
III	EN 1311.1	Language Course VI (English -IV)	5	4
	1311.1	Language Course VII (Addl. Lang. III) ML/HN/SK	5	4
	HY 1321	Foundation Course II (Informatics)	4	3
	HY 1341	Core III - Evolution of the Early Indian Society & Culture	5	4
	HY 1331 (EC/IH/SG)	Complementary V - History of Modern India (1921-1947) For Economics, Islamic History and Sociology	3	3
	HY 1331.2 EN/PL	Complementary VI History of Modern World (1921 - 1945) For English and Political Science	3	3
		TOTAL	25	21
IV	EN 1411.1	Language Course VIII (English V)	5	4
	M/H 1411.1	Language Course IX (Addl. Lan IV) ML/HN/SK	5	4
	HY 1441	Core IV - Medieval India Socio-Cultural Processes	5	4
	HY 1442	Core V-History of Modern World. Part I	4	3
	HY 1431 (EC/IH/SG)	Complementary VII - History of Modern India India (After 1948) for Economics, Islamic History and Sociology	3	3
	HY 1431.2 (EN/PL)	Complementary VIII History of Modern World (After 1946) for English and Political - Science	3	3
		TOTAL	25	21
V	HY 1541	Core VI Major Trends in Historical Thought and Writings	4	4
	HY 1542	Core VII Colonialism and Resistance Movements in India	4	4
	HY 1543	Core VIII- History of Modern World Part II	3	2
	HY 1544	Core IX-History of Pre-Modern Kerala	4	4
	HY 1545	Core X- Making of Indian Nation	3	2

		OPEN COURSE		
	HY 1551.1	Empowerment of Women in Modern World	3	2
	HY 1551.2	Introduction to Archaeology		
	HY 1551.3	History of Human Rights Movement	3	0
		Project/Dissertation / Historical Method - Mechanics - Project writing, Study tour		
		Total	25	20
VI	HY 1641	Core XI- Making of Modern Kerala	5	4
	HY 1642	Core XII-Major Trends in Indian Historical Thought and writings	5	4
	HY 1643	Core XIII- Contemporary India	5	4
	HY 1644	Core XIV- Twentieth Century Revolutions	4	3
		Electives		
	HY 1661.1	Historical tourism	3	2
	HY 1661.2	Heritage studies		
	Hy 1661.3	Contemporary world		
	HY 1661.4	Empowerment of Women with special reference to India		
	HY 1661.5	An introduction to Archaeology		
	Hy 1661.6	History of Human Rights Movement		
	HY 1661.7	Environmental History of Modern India		
	HY 1645	Project / Dissertation	3	4
		Total	25	21
		Grand Total	150	120

DEPARTMENT OF MATHEMATICS

Year of Establishment - 1967

Course Offered - B.Sc MATHEMATICS

First Degree Programme in Mathematics : Course Structure

Semester No	Course Code	Course Title	Instructional hours/ week	Credit/ Course	Uty. Exam duration	Evaluation		Total Credit
						CE.	ESE.	
I	EN 1111.1	English I	5	4	3 hrs	20%	80%	17
	1111.1	Add. Language IML/HN/SK	4	3				
	EN 1121	Foundation Course I	4	2				
	MM 1141	Methods of Mathematics	4	4				
	ST 1131.1	I Complementary Course I	2+2	2				
PY 1131.1	II Complementary Course I	2+2	2					
II	EN 1211.1	English 2	4	3	3 hrs	20%	80%	17
	EN 1212	English 3	5	4				
	1211	Add. Language 2 ML/HN/SK	4	3				
	MM 1221	Foundations of Mathematics	4	3				
	ST 1231.1	I Complementary Course 2	2+2	2				
PY 1231.1	II Complementary Course 2	2+2	2					
III	EN 1311.1	English 4	5	4	3Hrs.	20%	80%	18
	1311.1	Add. Language 3 ML/HN/SK	5	4				
	MM 1341	Core Course 2	5	4				
	ST 1331.1	I Complementary Course 3	5	3				
	PY 1331.1	II Complementary Course 3	3+2	3				
IV	EN 1411.1	English 5	5	4	3Hrs.	20%	80%	26
	1411.1	Add. Language 4 ML/HN/SK	5	4				
	MM 1441	Core Course 3	5	4				
	ST 1431.1	Complementary Course 4	3+2	3+4				
	PY 1331.1	II Complementary Course 4	3+2	3+4				

V	MM 1541	Real Analysis-I	5	4	3hrs	20%	80%	19
	MM 1542	Complex Analysis - I	4	3	3hrs			
	MM 1543	Abstract Algebra Grouptheory	5	4	3hrs			
	MM 1544	Differential equation	3	3	3hrs			
	MM 1545	Mathematic software Latex and Sage Math (Practical examination only)	4	3	3hrs			
	MM1551	Operations Research (open Course)	3	2	3hrs			
VI	MM 1641	Real Analysis-II	5	4	3hrs			
	MM1642	Complex Analysis - II	4	3	3hrs			
	MM 1643	Abstract Algebra Ringtheory	4	3	3hrs			
	MM 1644	Linear Algebra	5	4	3hrs			
	MM 1645	Integral transform	4	3	3hrs			
	MM 1651	Graph theory (elective)	3	2				
	MM 1646	Project		4				

POST GRADUATE DEPARTMENT OF PHYSICS

Year of Establishment : 1967

Courses Offered : B.Sc Physics & M.Sc. Physics

First Degree Programme in Physics

Course Structure

Semester No	Course Code	Course Title	Instructional hours/ week		Cred/ Course	Uty.Exam duration	Evaluation		Total Credit
			L	P			Internal	Uty. Exam	
I	EN 1111.1	English Language 1 Listening & Speaking Skills	5		4	3 hrs	20%	80%	16
	ML 1111.1	Addl Lang I - Malayala Kavitha	4		3	3 Hrs			
	HN 1111.1	Addl Lang I - Prose & Grammar							
	SK 1111.1	Addl Lang I - Kavya, Nataka, Alankara, Vritta							
	EN 1121.1	Foun Course I - Writing on Contemporary Issues	4		2	3 Hrs			
	PY 1141	Core Course I - Basic Mechanics & Properties of Matter	2		2	3 Hrs			
	PY 1442	Core Practical I	-	2	-	-			
	MM 1131.1	Compl Course -Differentiation & Analytic Geometry	4		3	3Hrs			
CH 1131.1	Compl Course II - Principles of Chemistry	2	2	2	3Hrs				
II	EN 1211.1	English Lang. III-Reading Skills	5		4	3 Hrs			17
	EN 1212.1	English Lang III-Modern English Grammar & Usage	4		3	3 Hrs			
	ML 1211.1	Addl Lang II - Malayala Gradhyasahityam	4		3	3 Hrs			
	HN 1211.1	Addl Lang II - Story Novel & Creative Writing							
	SK 1211.1	Addl Lang II _ Communication Skills in Sanskrit							
	PY 1241	Core Course II-Heat & Thermodynamics	2	2	2	3 Hrs			
	MM 1231.1	Compl Course III - Mathematics II Integration & Vectors	4		3	3 Hrs			
	CH 1231.1	Compl Course IV-Principles of Chemistry	2	2	2	3 Hrs			

MSc Degree Programme in Physics (effective from 2001-2002)

Course Structure & Mark Distribution

Se me ster	Paper Code	Title of the paper	Instructional hours per week			UE Dur	Maximum Marks		
			L	T	P		IA	UE	Total
1	PH 211	Classical Mechanics	6	1	-	3	25	75	100
	PH 212	Mathematical Physics	6	1	-	3	25	75	100
	PH 213	Basic Electronics	6	1	-	3	25	75	100
	PH 251	General Physics Practicals	-	1	3	-	-	-	-
	PH 252	Electronics & Computer Science Practicals	-	1	4	-	-	-	-
		TOTAL FOR S1	18	5	7	-	75	225	300
II	PH 221	Modern optics & Electromagnetic Theory	6	1	-	3	25	75	100
	PH 222	Thermodynamics Statistical Physics and Basic Quantum Mechanics	6	1	-	3	25	75	100
	PH 223	Computer Science & Numerical Techniques	6	1	-	3	25	75	100
	PH 251	General Physics Practicals	-	1	3	6	25	75*	100
	PH 252	Electronics & Computer Science Practicals	-	1	4	6	25	75*	100
		TOTAL FOR S2	18	5	7	-	125	375	500
III	PH 231	Advanced Quantum Mechanics	6	1	-	3	25	75	100
	PH 232	Advanced Spectroscopy	6	1	-	3	25	75	100
	PH 233 X	(Special Sub: Paper - I) Electronics	6	1	-	3	25	75	100
	PH 261	Advanced Physics Practical	-	1	4	-	-	-	-
	PH 262	Special Subject Practical		1	3	-	-	-	-
		TOTAL FOR S3	18	5	7	-	75	225	300
IV	PH 241	Condensed Matter Physics	6	1	-	3	25	75	100
	PH 242	Nuclear and Particle Physics	6	1	-	3	25	75	100
	PH 243 X	Special Sub: Paper -II Electronics	6	1	-	3	25	75*	100
	PH 261	Advanced Physics - Practical	-	1	3	6	25	75*	100
	PH 262	Advanced electronics - practical	-	1	4	6	25	75	100
	PH 201	Project	-	-	-	-	25	75	100
	PH 202	Viva voce	-	-	-	-	-	100	100
		TOTAL FOR S4	18	5	7	-	125	575	700
		GRAND TOTAL	72	20	28	-	425	1375	1800

X: E for Electronics, C for Computer Science

L: Lecturer.....T: Tutorial.....IA: Internal Assessment.....UE: University Exam

POST GRADUATE DEPARTMENT OF CHEMISTRY

Year of Establishment - 1967
 Course Offered - B.Sc, Chemistry &
 - M.Sc. Analytical Chemistry

First Degree Programme in Chemistry Course Structure

	Course Code	Course Title	Instructional hours/ week		Credit/ Course	Uty.Exam duration	Evaluation		Total Credit
			T	P			CE	ESE	
I	EN III.1	English 1	5		4	3 hrs	20%	80%	18
	III.1	Additional Language I ML/HN/SK	4		3	3 hrs	20%	80%	
	EN 1121	Foundation Course I	4		2	3 hrs	20%	80%	
	MM 1131.2	Differentiation and matrices	4		3	3 hrs	20%	80%	
	PY 1131.2	Complementary Course II	2		2	3 hrs	20%	80%	
		Complementary Course Practical of PY 1131.2	2						
	CH1141	Core Course I Core Course Practical I of CH 1141	2	2	4	3 hrs	20%	80%	
II	EN 1211.1	English II	4		3	3 hrs	20%	80%	18
	EN 1212	English III	5		4	3 hrs	20%	80%	
	1211.1	Additional Language II ML/HN/SK	4		3	3 hrs	20%	80%	
	CH 1221	Foundation Course II	2	2	3	3 hrs	20%	80%	
	MM1231.2	Integration, Differential Equations and theory of equations	4	2	3	3 hrs	20%	80%	
	PY1231.2	Complementary Course IV	2		2	3 hrs	20%	80%	
		Complementary Course Practical of PY1231.2		2	-	-			
III	EN 1311.1	English IV	5		4	3 hrs.	20%	80%	18
	1311	Addl. Language III ML/HN/SK	5		4	3 hrs.	20%	80%	
	MM 1331.2	Complementary Course V	5		4	3 hrs.	20%	80%	
	PY 1331.2	Complementary Course VI	3		3	3 hrs.	20%	80%	
		Complementary Course Practical of PY 1331.2		2	-	-	-	-	
	CH 1341	Core Course II Core Course Practical of CH 1341	3	2	3	3 hrs.	20%	80%	
IV	EN 1411.1	English V	5		4	3 hrs.	20%	80%	24
	1411.1	Additional Language IV ML/HN/SK	5		4	3 hrs.	20%	80%	
	MM 1431.2	Complementary Course VII	5		4	3 hrs.	20%	80%	
	PY 1431.2	Complementary Course VIII	3		3	3 hrs.	20%	80%	
	PY 1432.2	Complementary Course Practical of Py 1131.2, PY 1231.2, PY 1331.2 & PY 1431.2		2	4	3 hrs.	20%	80%	
	CH 1441	Core Course III	3		3	3 hrs.	20%	80%	
	CH 1442	Core Course IV - Practical - I of CH 1141, CH1341 & CH 1441		2	2	3 hrs.	20%	80%	

V	CH 1541	Core Course V	3	4	3hrs	20%	80%	18
	CH 1542	Core Course VI	4	4	3hrs	20%	80%	
	CH 1543	Core Course VII	4	4	3hrs	20%	80%	
	CH 1544	Core Course VIII Practical II		5	2			
	CH 1545	Core Course IX Practical III		4	2			
	1551	Open Course	3		2	3hrs	20%	
		Project		2				
VI	CH 1641	Core Course X		4	3hrs	20%	80%	24
	CH1642	Core Course XI	3	4	3hrs	20%	80%	
	CH1643	Core Course XII	4	4	3hrs	20%	80%	
	CH 1644	Core Course XIII Practical II	4	3	3hrs	20%	80%	
	CH 1645	Core Course XIV Practical III	4	3	3hrs	20%	80%	
	CH 1651.1/ CH 1651.2/ CH 1651.3/ CH 1651.4	Elective Course	3	2	3hrs	20%	80%	
	CH 1646	Project and Factory Visit		3	4	viva voce	100%	

1. Language Course =9 2. Foundation Course =2
 3. Complementary Courses=9 4. Core Courses=14 5. Open Course=1
 6. Elective Course=1 7. Project=1 Total courses=9+2+9+14+1+1+1=37
 Total Credits=18+18+18+24+18+24=120

M.Sc Programme in Branch IV Analytical Chemistry
 (Under Semester System with effect from 2001 admission)
SYLLABUS AND SCHEME OF EXAMINATION

Sem	Course Code	Course Title	Hours per week		Duration of ESA in hrs	Marks for CA	Marks for ESA	Total Marks
			L	P				
I	CL 211	Inorganic Chemistry I	5		3	25	75	100
	CL 212	Organic Chemistry I	5		3	25	75	100
	CL 213	Physical Chemistry I	5		3	25	75	100
	CL 214	Inorganic Practicals I	3		(To be continued in Semester II)			
	CL 215	Organic Practicals I	3		(To be continued in Semester II)			
	CL 216	Physical Practicals I	4					
Total Marks								300

* Distribution of teaching hours/week: Theory 15 hours, Practicals 10 hours (1hour for Seminar)

II	CL 221	Inorganic Chemistry I	5		3	25	75	100
	CL 222	Organic Chemistry I	5		3	25	75	100
	CL 223	Physical Chemistry I	5		3	25	75	100
	CL 214	Inorganic Practicals I		3	6	25	75	100
	CL 215	Organic Practicals I		3	6	25	75	100
	CL 216	Physical Practicals I		4	6	25	75	100
Total Marks								600

* Distribution of teaching hours/week: Theory 15 hours, Practicals 10 hours (1hour for Seminar)

III	CL 231	Inorganic Chemistry III	5	3	25	75	100	
	CL 232	Organic Chemistry III	5	3	25	75	100	
	CL 233	Physical Chemistry III	5	3	25	75	100	
	CL 234	Inorganic Practicals II	3	(To be continued in Semester IV)				
	CL 235	Organic Practicals II	3	(To be continued in Semester IV)				
	CL 236	Physical Practicals II	4	(To be continued in Semester IV)				

Total Marks for Semester III 300

* Distribution of teaching hours/week: Theory 15 hours, Practicals 10 hours (1 hour for Seminar)

IV	CL 241	Chemistry of Advanced Materials					
	CL 242	Applied Analytical Chemistry	15	3	25	75	100
	CL 234	Inorganic Practicals II	3	6	25	75	100
	CL 235	Organic Practicals II	3	6	25	75	100
	CL 236	Physical Practicals II	4	6	25	75	100
	CL 242	Dissertation Comprehensive				100	100
CL 243	Viva voice				100	100	

Total Marks for Semester IV 600

Grand Total Marks (for Semester I to IV) 1800

* Distribution of teaching hours/week: Theory 15 hours, Practicals 10 hours (10 hour for Discussion on Project) Practicals 20 hours (1 hour for Seminar) ** Each student has to choose either (a), (b), (c) as selective in accordance with the Dissertation chosen

DEPARTMENT OF BOTANY

Year of Establishment - 1967

Course Offered - BSc Botany

First Degree Programme in Botany

Course Structure

Semester No	Course Code	Course Title	Instructional hours/ week		Credits	Uty.Exam duration	Evaluation		Total Credits
			L	P			CE	ESE	
I	EN III.1	English Language I	5	-	4	3 hrs			16
	III.1	Additional Language I ML/HN/SK	4	-	3	"			
	EN 1121	Foundation Course I	4	-	2	"	20%	80%	
	BO 1141	Core Course I	2	2	3	"			
	CH/BC/1131	Compl. Course I (CH/BC)	2	2	2	"			
	ZO 1131	Compl. course II (ZO)	2	2	2	"			
II	EN 1211	English Language II	5	-	4	"			17
	EN 1212	English Language III	4	-	3	"			
	1211.1	Additional Language II MI/HN/SK	4	-	3	"			
	BO 1221	Foundation Course II	2	2	3	"	20%	80%	
	CH/BC 1231	Compl. course III (CH/BC)	2	2	2	"			
	ZO 1231	Compl. Course IV (ZO)	2	2	2	"			

DEPARTMENT OF ZOOLOGY

Year of Establishment - 1967

Course Offered - BS.c Zoology

First Degree Programme in Zoology Course Structure

Semester No	Course Code	Study Component	Instructional Hrs/Week		Credit	Duration of uty. exam	Evaluation		Total Credit
			T	P			CE	ESE	
I	EN 1111	English I	5		4	3hrs	20%	80%	16
	1111.1	Additional Language I ML/HN/SK	4		3	3hrs	20%	80%	
	EN 1121	Foundation Course I	4		2	3hrs	20%	80%	
	CH1131.4	Complementary Course	2		2	3hrs	20%	80%	
		Complementary Course Practical of CH1131.4		2	-	-	-	-	
	BO1131	Complementary Course II	2		2	3hrs	20%	80%	
		Complementary Course Practical of BO1131		2	-	-	-	-	
	Zo1141	Core Course I	3		3	3hrs	25%	80%	
		Core Course Practical I of ZO1141		1	-	-	-	-	
II	EN1211	English II	4		3	3hrs	20%	80%	17
	En1212	English III	5		4	3hrs	20%	80%	
	1211.1	Additional Language II ML/HN/SK	4		3	3hrs	20%	80%	
	Z01221	Core Course II Practical of Z01221	3	1	3	3hrs	20%	80%	
	CH1231.4	Complementary Course III	2		2	3hrs	20%	80%	
		Complementary Course Practical of CH1231.1		2	-	-	-	-	
	BO1231	Complementary Course IV	2		2	3hrs	20%	80%	
		Complementary Course Practical of BO1231		2	-	-	-	-	
III	EN1311	English IV	5		4	3hrs	20%	80%	
	1311.1	Additional Language III ML/HN/SK	5		4	3hrs	20%	80%	
	CH1331.4	Complementary Course V	3		3	3hrs	20%	80%	
		Complementary Course Practical of CH1331.4		2	-	-	-	-	
	BO 1331	Complementary Course VI	3		3	3hrs	20%	80%	
		Complementary Course		2	-	-	-	-	

		Practical of BO1331								
	ZO1341	Core Course II	3		3	3hrs	20%	80%		
		Core Course Practical of ZO1341		2	-	-	-	-		17
IV	EN1411	English V	5		4	3hrs	20%	80%		
	1411.1	Additional Language IV ML/HN/SK	5		4	3hrs	20%	80%		
	CH1431.4	Complementary Course VII	3		3	3hrs	20%	80%		
	CH1432.4	Complementary Course Practical of CH1131.4, CH1231.4, CH1331.4 & CH 1431.4		2	4	3hrs	20%	80%		
	BO1431	Complementary Course VIII	3		3	3hrs	20%	80%		
	BO1432	Complementary Course Practical of BO1131, BO1231, BO1331 & BO 1431		2	4	3hrs	20%	80%		25
	Zo1441	Core Course III	3		3	3hrs	20%	80%		
		Core Course-Practical I of ZO1441		2	-	-	-	-		
V	ZO1541	Core Course IV Practical I of ZO1141, ZO1341&ZO1441	-	-	4	3hrs	20%	80%		
	ZO1542	Core Course V	5		4	3hrs	20%	80%		
	ZO1543	Core Course VI	4		4	3hrs	20%	80%		
	ZO1544	Core Course VII	4		4	3hrs	20%	80%		
	1551	Open Course I Project	3		2	3hrs	20%	80%		22
		Field Study		3	-	-	-	-		
				1	-	-	-	-		
VI	ZO1641	Core Course IX	5		4	3hrs	20%	80%		
	ZO1642	Core Course X	4		4	3hrs	20%	80%		
	ZO1643	Core Course XI Core Course VIII Practical II of ZO1542, 1543 & 1544	4	5	3	3hrs	20%	80%		
	ZO1644	Core Course XII Practical III of ZO1642 & ZO1643		3	3	3hrs	20%	80%		
	ZO1645	Core Course XIII Practical IV of ZO1642 & ZO1643		3	3	3hrs	20%	80%		23
	ZO1651.1/ ZO1651.2/ ZO1651.3	Open Course II	3		2	3hrs	20%	80%		
	ZO1646	Project and Field Study		3	4	Viva voce	-	100%		
T-Theory, P-Practical, CE-Continuous Evaluation, ESE-End Semester Evaluation										120

POST GRADUATE DEPARTMENT OF GEOLOGY

Year of Establishment - 1981
 Course Offered - BSc Geology &
 MSc Geology

First Degree Programme in Geology Course Structure

Sem	Course Code	Course Title	Instructional hours/week		Credits	Exam Hours	Evaluation		Total Credit
							CE	ESE	
I	EN 1111	English I	5		4	3	20%	80%	17
	1111.1	Addl. Language I ML/HN/SK	4		3				
	EN1121	Foundation Course	4		2				
	GLICO1	General Perspective of Geology	2	2	4				
	MM1131.3	Differentiation and Theory of Equation	4	2	3				
	Compl. Course II	2	2	2					
			25	17					
II	EN 1211	English II	5		4	3	20%	80%	17
	EN1212	English III	4		3				
	1211.1	Addl. Language ML/HM/SK	4		3				
	GL1CO2	Information Technology & Methodology in earth Science	2	2	3				
	MM1231.3	Integration, Differential Equation and Matrices	2	2	2				
	Compl. Course IV	2	2	2					
			25	17					
III	EN 1311	Language Course VI (English IV)	5		4	"	"	"	
	1311	Language Course VII							
		Addl. Language III ML/HM/SK	5		4	"	"	"	
	MM1331.3	Complementary Course V	5		4	"	"	"	
	Py								
	1331.1/CH	Complementary Course VI	3	2	3	"	"	"	
1331.2									
GL 1341	Core Course III Crystallography	3	2	3	"	"	"		

**M.Sc. Degree Course in Geology : Structure and Mark Distribution
(2013 Admission onwards)**

Sem	Paper Code	Title of the paper	Distribution of hours		Marks		
			Lecture	Practical	CA	ESA	Total
I	GL 211	Physical Geology and Geomorphology	6		25	75	100
	GL 212	Structural Geology and Engineering Geology	4		25	75	100
	GL 213	Crystallography and Mineralogy	5		25	75	100
	GL 224	Practical I : Geomorphology, Structural Geology, Crystallography and Mineralogy		10	25	75	100
II	GL 221	Environmental Geology	6		25	75	100
	GL 222	Sedimentology and Geochemistry	4		25	75	100
	GL 223	Remote Sensing and Geographic Information System Applications	5		25	75	100
		Dissertation/Field work or Field Visit *		2 (Dissertation)			
	GL 225	Practical II : Sedimentology, Remote Sensing and Survey		6 (Sed. & Rs) 2 (Survey)	25	75	100
III	GL 231	Stratigraphy and Palaeontology	7		25	75	100
	GL 232	Igneous and Metamorphic Petrology	4		25	75	100
	GL 233	Hydrogeology	6		25	75	100
	GL 244	Practical III : Igneous and Metamorphic Petrology and Hydrogeology		8	25	75	100
IV	GL 241	Economic Geology	4		25	75	100
	GL 242	Exploration Geology	5		25	75	100
	GL 243	Applied Geology and Geostatistics	6		25	75	100
		Dissertation / Field work/Group Mapping #		2 (Dissertation)			
	GL 245	Practical IV : Economic Geology, Exploration Geology and Applied Geology		8	25	75	100
	GL 246	Dissertation					100
		Comprehensive Viva Voce (Includes 10 marks for Group Mapping)					100
Grand Total Marks							1800

Note:* Dissertation work commences in 2nd Semester with 2 hours per week. Field visit or field work in the 2nd Semester refers to a period of maximum 10 days duration (10 x 5 = 50 Hours) and is a compulsory part of the curriculum

Dissertation work continues in 4th Semester with 2 hours per week and an additional Field work component for a period of maximum 10 days duration (10 x 5 = 50 Hours). Group Mapping includes field training in geological mapping for a period of maximum 10 days duration (10x5 = 50 hours) and is a compulsory part of the curriculum to be carried out prior to the Dissertation Field work.

DEPARTMENT OF COMMERCE

Year of Establishment - 1980
 Course Offered - B.Com (finance stream)
 - B.Com (With Hotel Management)-1999

First Degree Programme in Commerce Course Structure

sem	Courses	Course Code	Course Title	Instructional Hrs/week	Uty.Exam duration	Credits
I	Language Course I	EN IIII	English I	5	3	4
	Language Course II	IIII.2	Additional Language I ML/HN	4	3	4
	Foundation Course I	CO 1121	Environmental Studies	4	3	2
	Core Course I	CO 1141	Methodology & Perspective of Business Education	4	3	3
	Core Course II	CO1142	Functional Application of Management	4	3	3
	Compl.Course I	CO 1131	Managerial Economics	4	3	3
				TOTAL	25	
II	Language Course III	EN 1211	English II	5	3	4
	Language Course IV	1211	Additional Language II ML/HN	4	3	4
	Foundation Course II	CO 1221	Informatics and cyber laws	4	3	3
	Core Course III	CO 1241	Business Communication and office management	4	3	3
	Core Course IV	CO1242	Financial Accounting	4	3	3
	Complementary Course II	CO1231	Business Regulatory frame works	4	3	3
				TOTAL	25	
III	Language Course V	EN 1311	English III	3	3	3
	Core Course V	CO 1341	Business Environment and Entrepreneurship Development	4	3	3
	Core Course VI	CO 1342	Company Administration	4	3	3
	Core Course VII	CO 1343	Advanced Financial Accounting	5	3	4
	Complementary Course III	CO 1331	Information Technology in Business	4	3	3

V	Core VII	HM 1541	Entrepreneurship Development	4	-	3	3
	Core VIII	HM 1542	Indian Financial Markets	4	-	3	3
	Core IX	HM1543	Cost Accounting	4		3	4
	Vocational VII	HM 1571	Facility Planning and Basic Hotel Engineering	4		3	4
	Vocational VIII	HM 1572	Hotel Law	3		3	3
	Open I	HM 1581	Open Course-1/2/3	3		3	2
	Project		Project	3			
TOTAL				25			19
VI	Core X	HM 1641	Auditing	4		3	3
	Core XI	HM 1642	Applied Costing	4		3	3
	Core XII	HM 1643	Management Accounting	4		3	4
		HM 1671	Bakery and Patisserie Theory and Practice	2	2	3	4
	Vocational X	HM 1672	Nutrition and Food Preservation	3		3	3
	Open II	HM 1681	Open Course 1/2/3	3		3	2
	Project	HM 1644	Project	3			4
TOTAL				23	2		23

Grand Total (SEM I+II+III+IV+V+VI)

120

ഇന്ത്യൻ ജ്യാതതിലല്ലാമാ-
വസിക്കുന്നതുകൊണ്ടു നീ
ചരിക മുക്തനാവാരി-
കരുതാരുടെയും ധനം

ശ്രീനാരായണ ഗുരു

അരുളൻപന്നുകമ്പമുന്നിനും
പൊരുളൊന്നാണിതു ജീവതാരകം
'അരുളുള്ളവനാണുജീവി' ചെ-
ന്നുരുവിട്ടീടുകഴിനവാക്ഷരി

ശ്രീനാരായണ ഗുരു

SREE NARAYANA COLLEGE , SIVAGIRI VARKALA

OPEN COURSES 2019-2020

1. MALAYALAM

മലയാള പത്രപ്രവർത്തനം

പഠനോദ്ദേശ്യം

മലയാള പത്രപ്രവർത്തന മേഖല ഭാഷയ്ക്കും സംസ്കാരത്തിനും സാഹിത്യത്തിനും നൽകിയിട്ടുള്ള സംഭാവന നിസ്സീമമാണ്. ജനതയുടെ ഭാഷയേയും സംസ്കാരത്തേയും സർഗ്ഗചോദനകളേയും പരിപോഷിപ്പിക്കുന്നതിൽ പത്രമാധ്യമങ്ങൾ വലിയ പങ്ക് വഹിച്ചിട്ടുണ്ട്. കേരളത്തിൽ ഒരു പൊതു ഭാഷ സൃഷ്ടിക്കുകയും വളർത്തിയെടുക്കുകയും ഭാഷയുടെ പ്രാദേശിക ഭാവങ്ങൾക്കപ്പുറത്ത് കേരളത്തെ ഒരുമിപ്പിച്ചു നിർത്തുകയും ചെയ്യുന്നതിൽ ഈ മാധ്യമം വഹിക്കുന്ന പങ്ക് വളരെ വലുതാണ്. ഈ പശ്ചാത്തലത്തിൽ, ഭാഷയുടേയും സാഹിത്യത്തിന്റേയും പഠനത്തിൽ ഒഴിച്ചുകൂടാനാവാത്തതാണ് പത്രമാധ്യമപഠനം.

പാഠ്യപദ്ധതി

മൊഡ്യൂൾ : ഒന്ന്

(8 മണിക്കൂർ)

ജനസമ്പർക്കത്തിന് ഒരാമുഖം - ആശയവിനിമയവും ജനസമ്പർക്ക മാധ്യമവും - ജനസമ്പർക്ക മാധ്യമങ്ങളുടെ വൈവിധ്യം - അച്ചടി, റേഡിയോ, ടെലിവിഷൻ, സിനിമ, ഇന്റർനെറ്റ് - വാർത്താവിനിമയ പ്രക്രിയ - ആധുനിക വാർത്താവിനിമയ മാർഗ്ഗങ്ങൾ.

മൊഡ്യൂൾ : രണ്ട്

(10 മണിക്കൂർ)

പത്രമാധ്യമത്തിന്റെ സവിശേഷപ്രാധാന്യം - മലയാള പത്രപ്രവർത്തനത്തിന്റെ ഉത്ഭവവും വളർച്ചയും - ആദ്യകാല മലയാള പത്രങ്ങൾ - മാസികകൾ - ഒരു നൂറ്റാണ്ടിലേറെയായി നിലനിൽക്കുന്നതും നൂറ്റാണ്ടുകൾക്കുപുറം പോകുന്നതുമായ പ്രമുഖ പത്രങ്ങൾ - ആനുകാലിക പ്രസിദ്ധീകരണങ്ങൾ - സവിശേഷതകൾ.

മൊഡ്യൂൾ : മൂന്ന്

(18 മണിക്കൂർ)

വാർത്ത - വാർത്തയുടെ നിർവചനം - വാർത്തയുടെ മുഖ്യം - വാർത്താസ്രോതസ്സുകൾ - വാർത്താ ബന്ധങ്ങൾ - വാർത്താ വൈവിധ്യങ്ങൾ - വാർത്തവരുന്ന വഴി - വാർത്താ ഏജൻസികൾ - വാർത്താ ശേഖരണം - ആധുനിക സങ്കേതങ്ങൾ - റിപ്പോർട്ടിംഗ് രീതികൾ - ശൈലികൾ - പത്രഭാഷ - ഫീച്ചർ രചന, അഭിമുഖങ്ങൾ എന്നിവയുടെ രീതികൾ.

മൊഡ്യൂൾ : നാല്

(18 മണിക്കൂർ)

പത്രത്തിന്റെ നിർമ്മാണ രീതികൾ - വിവിധഘട്ടങ്ങൾ - എഡിറ്റിങ്ങും രൂപകൽപനയും - ലേ-ഔട്ടിന്റെ പ്രാധാന്യം - പ്രധാന വാർത്തകൾ - തലക്കെട്ടുകൾ - വിവിധപത്രങ്ങളുടെ ഒന്നാം പേജ് ഡിസ്പ്ലേ താരതമ്യം ചെയ്ത് പഠിക്കുക.

2. BOTANY

HORTICULTURE

MODULE I

Introduction

.Division of horticulture . Importance and scope of Horticulture

Principles of garden Making

- > Type of Post and Containers > Potting mixture and potting media – soil, sand, peat, sphagnum moss, vermiculite > Soil types, Soil preparation > Irrigation methods
- > Hydroponics

MODULE II

Propagation methods

- > Cuttings > Layering – Air Layering (Tip, Trench and Compound)
- > Budding – T-budding > Grafting – Approach grafting, whip and tongue grafting
- > garden tools and implements Manures and fertilizers
- > farmyard manure, compost, vermicompost and biofertilizers. > Chemical fertilizers – NPK
- Time and application of manures and fertilizers > Foliar sprays

MODULE III

Components of Garden

- > Lawns and landscaping > Trees, shrubs and shrubberies, climbers and creepers
- > Flower beds and borders, ornamental hedges, edges > Drives roads, walks and paths
- Carpets beds topiary , trophy, rockery > Conservatory or green house
- Indoor garden, Roof garden > Bonsai

MODULE IV (10 hrs)

Flower Arrangement

- > Container and requirements for flower arrangement > Free style, Shallow and mass arrangement
- > Japanese – Ikebana > Bouquet and garland making > Dry flower arrangement

Harvesting

- > Methods, Storage Marketing of fruits, Vegetables and flowers > Preservation and processing of fruits and vegetables

MODULE V (10 hrs)

Growth regulators in horticulture

- >Rooting hormones > Growth promoters > Flowe Induction > Parthenocary

Plant Protection

- >Common diseases of fruits and vegetables crops > Weedicides > Fungicides > Pesticides

Field study

Visit to Botanical garden under the guidance of the teacher is encouraged.

3. GEOLOGY

DISASTER MANAGEMENT

Unit I

Introduction – Hazard and Disaster : Definition and terminologies – Classifications

Concept of Disaster management – Comprehensive disaster Management Plan, Elements of Disaster Management Plan.

Unit II

Natural Disaster – Earth quake, Land slide, Avalanches, Volcanic eruptions – Their case Studies Heat and Cold waves. Coastal Disasters. Coastal Regulation Zone. Cyclone, Flood, Drought, Tsunami.

Unit III

Environmental Disasters – Dam collapse and mitigation measures, Nuclear disaster, Chemical Disasters, Biological Disasters, Forest fire and Oil fire.

Unit IV

Climate change: global warming, sea level rise ozone depletion, carbon sink and sources and effects. (10 hrs)

Unit V

Disaster management , Prevention, Preparedness and Mitigation; Disaster Preparedness Plan. Application of Information Technology in Disaster Preparation. Application of GIS in disaster management . Emergency procedures and warming Systems

MATHEMATICS

OPERATION RESEARCH

No. of credits 2

MODULE I

Linear Programming: Formulation of linear programming module, Graphical solution of Linear Programs in Two variables. Linear programs in standard form basic variable – basic solution – feasible solution, Solution of Linear Programming problem using simplex method – Big – M simplex method

MODULE II

Transportation Problems: Linear Programming formulation – Initial basic feasible solution – Modified distribution method optimality test Assignment problems: Standard Assignment problems – Hungarian method for solving an assignment problem

Project Management : Activity- dummy activity event-project network, CPM (Solution by network analysis only), PERT

MODULE III

Queuing modules: Example of queue-queue discipline – Kendall's notation analysis of steady state distribution and performance evaluation of M/M/1, M/M/c/N- Erlang's loss formula.

Text: Ravindran – Philips – Solberg: Operations Research – Principles and Practice Reference:

Hamdy A Taha: Operation Research

Distribution of instructional hours

Module 1: 12 hours; Module 2: 12 hours; Modules 3 : 12 hours

PHYSICS

ENERGY PHYSICS

Unit (7hrs)

Various forms of energy – renewable and conventional energy systems- comparison – coal, oil natural gas – availability – applications – merits and demerits.

Unit 2 (10 hrs)

Solar energy – Solar heaters, space cooling, solar ponds, solar cookers, solar distillation, solar furnace, solar green houses, photovoltaic generation basis, merits and demerits of solar energy

Unit 3 (9rs)

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Wind energy: Basic Principle of wind energy conversion, basic components of wind energy conversion system, wind energy collectors. Energy storage, application of wind energy.

Unit 4 (9 hrs)

Biomass energy, classification, photosynthesis, biomass conversion process, gobar gas plants, wood gasification, ethanol from wood, merits and demerits of biomass as energy source

Unit 5 (9hrs)

Energy from oceans and chemical energy sources: Ocean thermal energy conversion, energy from waves and tides – basic ideas, nature, application merits and demerits

Unit 6 (10 hrs)

Pattern of energy consumption in domestic, industrial, transportation and agriculture sector – energy crisis and possible solutions – energy options for the developing countries – energy storage and hydrogen as a fuel (basics)- impact due to non conventional energy sources – global warming.

PHYSICAL EDUCATION

HEALTH AND PHYSICAL EDUCATION (PE 1551)

Module I: Introduction to Health and Physical Education

Concept of Health & Physical Education
Definition and Meaning of Health
Dimension of Health (Physical, Mental, Social, Spiritual and Emotional)
Definition, Meaning, Objectives and Importance of Physical Education
Factors affecting Health (Biological, Personal, Environmental & Socio cultural factors)
Nutrition, Balanced Diet, Malnutrition and food Adulteration
Hypo kinetic Diseases and their common Causes (Diabetes, Obesity & Hypertension)
Impact of Alcohol, Tobacco and Drugs
Overuse of Television, Computer and Mobile Phone

Module II : Scientific Basis of Physical Activity

Heart Rates, Blood Pressure and Body Mass Index.
Type of Exercises – Aerobic and Anaerobic Exercises
Benefits of Exercises
Type of Fitness
Health related fitness (Muscular Endurance, Strength , Flexibility and Body Composition)
Skill / Performance related Fitness (Speed, Strength, Coordinate abilities, Power Endurance & Agility)
Warm-up, cool down, Oxygen Debt & Second wind
Effects of Exercises on Circulatory and respiratory System.

Module –III: Wellness and Lifestyle Management

Meaning of wellness & Methods of Improving Wellness
Hygiene (Personal, Environmental, and Occupational Hygiene)
Need & Importance of Recreation for healthy living

Module-IV Body Posture and First Aid

Biomass energy, classification, photosynthesis, biomass conversion process, gobar gas plants, wood gasification, ethanol from wood, merits and demerits of biomass as energy source

Module-V: Introduction to Sports and Games

Olympic games, Asian game and National games
Major National Tournaments (Sathosh Trophy and Ranji Trophy)
National Sports Awards (Dronacharya, Khel Ratna & Arjuna Awards)
Media & Sports
Women & Sports
Doping in Sports

COMMERCE

Functional Management

No. of instructional hours per week: 3

No. of credits: 2

Aim of the courses: To provide a theoretical base so as to enable the students to acquire practical knowledge of the functional areas of management. 77

Course objectives:

1. To provide basic knowledge on the functions of management
2. To acquaint the students with the functional areas of Management

Module I

Functions of Management- Management –meaning-definition-functions of management –planning-organizing –staffing-directing-controlling (a brief study) 10 hrs

organizing –staffing-directing-controlling (a brief study) 10 hrs

Module III

Marketing Management – meaning and objectives- difference between marketing and selling – marketing functions – functions of exchange, buying and assembly – selling – functions of physical distribution – standardisation – grading and branding – packaging –transportation – marketing mix(12hrs)

Module IV

Human Resource Management—meaning and nature—role and responsibility of HR managers – Man power planning—recruitment – selection –training and development—placement compensation – methods of wage payment – incentives – monetary and non monetary. (12hrs)

Module V

Financial management – Meaning—definition – objectives – profit maximization vs wealth maximization—scope of financial management – investment decisions – financing decisions – dividend decisions – Working Capital (a brief study) (10hrs)

CHEMISTRY

ESSENTIALS OF CHEMISTRY

Module 1: Atomic structure and Periodic Classification of Elements (9hrs)

Structure of atom—Fundamental particles, atomic mass, atomic number, isotopes. Bohr theory of atom. Orbitals – Quantum numbers, aufbau principle, Hund's rule; Pauli's exclusion principle.

Electronic configuration of atoms—half and completely filled orbitals. Modern periodic table: Periods, Groups, Periodicity -- valency, atomic radius, electro negativity, Ionisation potential, Electron affinity.

Module 2 : Nuclear Chemistry (9hrs)

Natural radioactivity, Nature and types of radiations, Properties. Group displacement law. Radio active decay series. Decay rate. Half life period, Average lifeperiod, Unit of radioactivity. Radiation dose, artificial radioactivity, nuclear structure. Nuclear fission and Nuclear fusion. Rock dating – Radio carbon dating. (elementary idea only)

Module 3 polymer chemistry(9hrs)

Classification of polymer : Origen,structure , synthesis , Molecular forces. Commercially important polymers: Application of polyethylene , polystyrene, polyhaloolefines ,Nylon-6 ,nylon -66, Melamine, Terylene, Bakelite , natural and synthetic rubber vulcanization inorganic polymer :(examples only).

Module 4: Chemistry in biological Process (9hrs)

Vitamins : Vitamin-A, Vitamin-B2, Vitamin-C, Vitamin-D, Vitamin-E and vitamin-K, Name Source Function and deficiency diseases, Enzymes Classifications, characteristics, role examples. Hormones – Androgens, Oestrogens, progesterone, Example, function, Cortical hormones – a few example with function. Nucleic acid –RNA, DNA: Introduction –role in the life process (No structure of chemical reactions needed)

Module 5: Chemistry in Action (9 hrs)

Dyes: Classification based on constitution, application, examples, uses, Drugs: Antipyretic, analgesic, antiseptic, disinfectants tranquilisers, antibiotic structure, name and uses only. Soaps and detergents: Hard and soft soaps, anionic, cationic and non-ionic detergents, cleansing action of soaps, Explosives: TNT, TNG, RDX, Gun cotton; name, structure and action. (No structure or chemical reactions needed)

Module 6: Environmental Chemistry (9hrs)

Air Pollution: Types of pollutant in air carbon-monoxide, carbon dioxide, Nitrogen oxides, sulphur dioxides, hydrogen sulphide, C12, CFC, particulate matter, metals, fly ash, asbestos, hydrocarbons- source and influence. Acid rain green house effect, ozone layer and its depletion.

Water Pollution: Various factors affecting purity of 71 water, sewage water, industrial waste, agriculture pollution such as pesticides, fertilizers detergents. Hard and soft water, Removal or hardness, dis advantages of hard water soil pollution : Due to pesticides, herbicide, long term use of fertilizers, plastic waste.

HOTEL MANAGEMENT & CATERING

Nutrition and food preservation

MODULE I

1. Nutrition

Definition, importance, classification of Nutrients and foods, Function of Food to man.

2. Carbohydrates

Composition, Classification, Functions, Food source, Daily requirements, Excess and Deficiency.

3. Proteins

Composition, Classification, Functions, Food source, Daily requirements, Excess and Deficiency.

4. Fats

Composition, Classification, Functions, Food source, Daily requirements, Excess and Deficiency.

MODULE II

Minerals

Classification, Functions, Food source, Excess and Deficiency, Daily Requirements for calcium, Iron, Sodium, Iodine and Fluorine

Vitamins

Composition, Classification, Functions, Food source, Daily requirements, Water-Soluble Vitamin classification

B-Complex (functions Food Source, Deficiency Daily Requirements)

Ascorbic Acid (Functions Food Source, Deficiency Daily requirements)

Nutritional Losses Upon Cooking and ways to prevent it.

MODULE II

Minerals

Classification, Functions, Food source, Excess and Deficiency, Daily Requirements for calcium, Iron, Sodium, Iodine and Fluorine

Vitamins

Composition, Classification, Functions, Food source, Daily requirements, Water-Soluble Vitamin classification

B-Complex (functions Food Source, Deficiency Daily Requirements)

Ascorbic Acid (Functions Food Source, Deficiency Daily requirements)

Nutritional Losses Upon Cooking and ways to prevent it.

Module III

Water

importance, Water Balance, Deficiency and Oral Rehydration

Digestion and absorption

Mechanical and chemical breakdown of nutrient (CHO,FATS,PROTIEN)and its Absorption

Food Groups

Nutritive value of Foods(Cereals,Pulses,Vegetables,Fruits Milk and Milk products,Meats,Poultry, Fish,Eggs,Condiments,Spices,Sugar and Alcoholic beverages)

Module IV

Disinfectant

Definition

Common disinfectants

Use on Work areas, Kitchen equipments,dish washing,hand washing.Sterilization of Kitchen and service equipments.sanitizing catering equipments

Preservation of food

Principles of food preservation

Different and effectivemethods of food preservation and canning,high and low temp,dehydration, smoking etc)

Module V

Food Adultration

Definition and public health hazards

Prevalling food standards in India FPO,PFA,AGMARK,ISI)

Safe Food Handling and Garbage Disposal

Personal Hygienic (uniform,medical check - up, good handling habits and training)control and Eradication of pets and rodents collection,storage and proper disposal of garbage from the premises

10.ECONOMICS

HUMAN RESOURCE MANAGEMENT

Module I Natural and scope of HRM

Meaning And Definition:- Difference between personnel Management and Human Resources Management-Objectives,Scope and Functions of Human Resource Management- Role of Human Resource Management

Module II HR Planning Recruitment and Training

Definition of HR Planing:- Need and Importance . Method of Recruitment, Recruitment practices in India-Selection-Placement-Concept of Training-Steps in training programme-Methods of Training - Types of Training

Module III Measures of Controlling Human Resources

Promotion-Transfer-Demotion Separation- Employee Discipline-Procedures of Disciplinary action, Industrial relation and collective Bargaining in India

HISTORY

HISTORY OF HUMAN RIGHTS MOVEMENTS

Module I

Definition- Human Rights and Violation - UN proclamation

Module II

Movement against Racial Discrimination

Antislavery Movement - Question of Slavery and the Civil war in America -(1848)Activities of William Wilber Force

Movements led by Mahathma Gandhi-Martin Luther King- Nelson Mandela- Desmond Tutu-Vangai Mathai.

Module III

Indian experiments of Human Rights - Human rights in the current scenario

Constitutional Safeguards and Laws- Dr.B.R. Ambedkar - Movements Against - Violation- Ideological Background - Dalit Panthers- Tribal Movements - Women Movements - Environmental movements

12. ZOOLOGY

Human Diseases and Their Management Course Code - Z01551.3

No.of credits - 2

Aim of the course

To install in the students the need to manage communciabile diseases thereby creating a healthy society

Objectives of the course

>To learn the various modes and agents of diseases transmission

> To learn the causative factors of non communicable diseases

Module I

Introduction : Health - WHO definition , individual and community health.Lifestyle choice for healthier life: Dict and health, exerice and health , alcohol,tobacco and drugs,sex and health, computers and health,mobile phone and health,psychological health

Module II

Module II

Viral Infections: Brief account of virus, chickenpox, polio, rabies, yellow fever, dengue fever, mumps, influenza, measles, encephalitis, hepatitis, HIV infection and AIDS -causes, symptoms, prevention and cure

Module III

Bacterial Infections: Brief account of Bacteria, dysentery, cholera, tuberculosis, tetanus, diphtheria, septicemia, scarlet fever, typhoid, plague; STD and leprosy - causes, symptoms, prevention and cure

Module IV

Protozoan Infections: Brief account of protozoans- amoebiasis, leishmaniasis, trichomoniasis, malaria- causes, symptoms, prevention and cure.

Module V

worm Infections: Brief account of platyhelminthes and nematodes, cysticercosis, taeniasis, ascariasis, ancylostomiasis, encephalitis, enterobiasis and dracunculosis - causes, symptoms, prevention and cure

module VI

vector borne diseases: Vector - identification of vectors - dengue, filaria, kala azar, Japanese encephalitis, chikungunya - causes, symptoms, prevention and cure.

Module VII

Mental health: Meaning, definition, history, characteristics of a mentally healthy person. Type of mental illnesses - causes, symptoms and prevention - major mental illness (schizophrenia, paranoia) minor mental illnesses (anxiety, phobia, obsessive compulsive neuroses)