DEPARTMENT OF PHYSICAL EDUCATION

Syllabus of Open Course for

Undergraduate Programmes

Under Choice Based Credit System

(Outcome Based Education with Effect from 2022 Admissions)

St Berchmans College
Founded 1922
AUTONOMOUS College with Potential for Excellence | Reaccredited by NAAC with A Grade
CHANGANASSERY, KERALA

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St Berchmans College
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Affiliated to Mahatma Gandhi University, Kottayam, Kerala
Changanassery, Kottayam, Kerala, India-686101

REGULATIONS FOR UNDERGRADUATE PROGRAMMES (BA/BSc/BCom/BCA) UNDER CHOICE BASED CREDIT SYSTEM 2022 (SB - UG - CBCS - 2022)

1. SHORT TITLE

1.1 These Regulations shall be called St. Berchmans College (Autonomous) Regulations governing undergraduate programmes under Choice Based Credit System 2022.

1.2 These Regulations shall come into force with effect from the academic year 2022 - 23 admissions onwards with outcome based education.

2. SCOPE

2.1 The regulation provided herein shall apply to all regular undergraduate programmes, BA/BSc/BCom/BCA, conducted by St. Berchmans College (Autonomous) with effect from 2022 - 23 admissions onwards.

2.2 Medium of instruction is English, except in the case of language courses other than English unless otherwise stated therein.

3. DEFINITIONS

3.1 'University' means Mahatma Gandhi University, Kottayam, Kerala.

3.2 'College' means St. Berchmans College (Autonomous) Changanassery.

3.3 There shall be an Academic Committee nominated by the Principal to look after the matters relating to the SB – UG - CBCS.

3.4 'Academic Council' means the Committee consisting of members as provided under section 107 of the University Laws Bill 2021, Government of Kerala.

3.5 'Parent Department' means the Department, which offers a particular undergraduate programme.

3.6 'Department Council' means the body of all teachers of a Department in the College.

3.7 'Faculty Mentor' is a teacher nominated by a Department Council to coordinate the continuous evaluation and other academic activities of the undergraduate programme undertaken in the Department.

3.8 Outcome-Based Education (OBE) is a student-centric teaching and learning methodology in which the course delivery and assessment are planned to achieve stated objectives and outcomes.

3.9 'Programme Outcome (PO)s' are statements that describe what students are expected to know and be able to do by the time of graduation.

3.10 'Programme Specific Outcome (PSO)s' are statements that describe what the graduates of a specific programme should be able to do.

3.11 'Course Outcome (CO)s' describe what students should be able to do at the end of a course.

3.12 'Programme' means a three-year programme of study and examinations spread over six semesters, the successful completion of which would lead to the award of a degree.

3.13 'Duration of Programme' means the period of time required for the conduct of the programme. The duration of an undergraduate programme shall be six (6) semesters.

3.14 'Semester' means a term consisting of a minimum 90 working days, inclusive of tutorials, examination days and other academic activities within a period of six months.

3.15 'Course' means a portion of a subject to be taught and evaluated in a semester.

3.16 'Course Teacher' means the teacher who is engaging classes on the course.

3.17 'Core Course' means a course in the subject of specialization within a degree programme. It includes a course on environmental studies and human rights.

3.18 'Complementary Course' means a course, which would enrich the study of core courses.

3.19 'Common Course I' means a course that comes under the category of courses of English.

3.20 'Common Course II' means additional language, which can be opted by a student, from among the languages offered by the College.

3.21 The Common Course I and II is compulsory for all students undergoing Model I and Model II programmes.

3.22 'Open Course' means a course offered by the departments other than the parent department outside the field of specialization of the student, which can be opted by a student.

3.23 'Choice Based Core Course' means a course, that enables the students to familiarize the advanced areas of Core Course.

3.24 'Vocational Course' means a course that enables the students to enhance their practical skills and ability to pursue a vocation in their subject of specialization.

3.25 'Frontier course' is a new area of study that introduces the students to an emerging field that is related to the core subject.

3.26 'Extra Credit Course' means a course opted by the students, in addition to the compulsory courses, in order to gain additional credit that would boost the performance level and additional skills.

3.27 Extra credit courses shall be completed by working outside the regular teaching hours.

3.28 There will be two categories of extra credit courses, mandatory and optional. If a candidate fails to complete the mandatory course, he/she shall complete the same within the tenure of the programme. The details of the extra credit courses are given below:

Name	Semesters	Type	Credit
Value Education	I to VI	Compulsory	3
Basic Life Support System and Disaster Management (BLS & DM)	I	Compulsory	1
Social Awareness Course (SAC)	I and II	Compulsory	2
Skill Development Courses (SDC)	II and III	Compulsory	2
Industry Familiarisation Course	IV	Compulsory	2
Finishing School	III and IV	Compulsory	1
Virtual Lab	V	Optional	1
Massive Online Open Courses	I to V	Optional	Variable
Interdisciplinary Research	I to V	Optional	3

3.29 'On the Job Training' means a job training course given to the students to acquaint them with various industrial skills.

3.30 'Project' means a regular project work with stated credits on which the student conducts a project under the supervision of a teacher in the parent department/any appropriate research centre in order to submit a dissertation on the project work as specified.

3.31 'Dissertation' means a minor thesis to be submitted at the end of a research work carried out by each student on a specific area.

3.32 'Plagiarism' is the unreferenced use of other authors' material in dissertations and is a serious academic offence.

3.33 'Seminar' means a lecture expected to train the student in self-study, collection of relevant matter from books and internet resources, editing, document writing, typing and presentation.

3.34 'Improvement Examination' is an examination conducted to improve the performance of a student in the courses of a particular semester as per the examination manual.

3.35 'Supplementary Examination' is an examination conducted for students who fail in the courses of a particular semester as per the examination manual.

3.36 The minimum credits, required for completing an undergraduate programme is one hundred and twenty (120).

3.37 'Credit' (C) of a course is a measure of the weekly unit of work assigned for that course in a semester.

3.38 'Course Credit': One credit of the course is defined as a minimum of one (1) hour lecture/minimum of two (2) hours laboratory/field work per week for eighteen (18) weeks in a semester. The course will be considered as completed only by conducting the final examination.

3.39 'Grade' means a letter symbol (A, B, C etc.) which indicates the broad level of performance of a student in a course/semester/programme.

3.40 'Grade Point' (GP) is the numerical indicator of the percentage of marks awarded to a student in a course.

3.41 'Credit Point' (CP) of a course is the value obtained by multiplying the grade point (GP) by the credit (C) of the course.

3.42 'Semester Credit Point Average' (SCPA) of a semester is calculated by dividing total credit points obtained by the student in a semester by total credits of that semester and shall be rounded off to two decimal places.

3.43 'Cumulative Credit Point Average' (CCPA) is the value obtained by dividing the sum of credit points in all the courses obtained by the student for the entire programme by the total credits of the whole programme and shall be rounded off to two decimal places.

3.44 'Institution Average' is the value obtained by dividing the sum of the marks obtained by all students in a particular course by the number of students in the respective course.

3.45 'Grace Marks' means marks awarded to course/courses as per the choice of the student, in recognition of meritorious achievements of a student in NCC/NSS/sports/arts and cultural activities.

3.46 Rank certificate shall be issued to candidates who secure positons from one to three. Position certificate shall be issued on request from fourth position to tenth position. Candidates shall be ranked in the order of merit based on the CCPA scored by them. Grace marks awarded to students shall not be counted for fixing rank/position. The rank and position certificate shall be signed by the Principal and Controller of Examinations.

4. PROGRAMME STRUCTURE

4.1. The programme shall include core courses, vocational courses, frontier course, complementary courses, common courses, open course and choice based core courses. There shall be a project/dissertation to be undertaken by all students. The programme will also include assignments, seminars, practical, viva-voce, OJT, field visit, industry visit, field project etc., if they are specified in the curriculum.

Study tour/field visit/industrial visit/visit to research institutes/visit to historical places/cultural and heritage centres etc. shall be conducted during the fifth or sixth semester as part of the curriculum.

4.2. Total credits for a programme is one hundred and twenty (120). The credit distribution for various UG programmes is shown below.

Model I BA/BSc

i.	Programme duration	6 Semesters
ii.	Total credits required for successful completion of the programme	120
iii.	Minimum credits required from Core + Choice based core course + Project + Complementary courses	79
iv.	Minimum credits required from Common course I	22
v.	Minimum credits required from Common course II	16
vi.	Minimum credits required from Open course	3
vii.	Minimum attendance required	75%

Model II BA

i.	Programme duration	6 Semesters
ii.	Total credits required for successful completion of the programme	120
iii.	Minimum credits required from Core + Vocational courses + Choice based core course + Project + Complementary courses	93
iv.	Minimum credits required from Common course I	16
v.	Minimum credits required from Common course II	8
vi.	Minimum credits required from Open course	3
vii.	Minimum attendance required	75%

Model III BSc/BCA

i.	Programme duration	6 Semesters
ii.	Total credits required for successful completion of the programme	120
iii.	Minimum credits required from Core + Choice based core course + Project + Complementary courses	109
iv.	Minimum credits required from Common course I	8
v.	Minimum credits required from Open course	3
vi.	Minimum attendance required	75%

Model I BCom

i.	Programme duration	6 Semesters
ii.	Total credits required for successful completion of the programme	120
iii.	Minimum credits required from Core + Optional courses + Project	95
iv.	Minimum credits required from Common course I	14
v.	Minimum credits required from Common course II	8
vi.	Minimum credits required from Open course	3
vii.	Minimum attendance required	75%

4.3. **Project/Dissertation of courses other than BCA**

All students shall do a project/research work in the area of core course during the course of the programme. The project/ research work shall be done individually or as a group of maximum five (5) students. The projects/research work shall be identified during the fourth semester of the programme with the help of the supervising teacher. The report of the project/research work shall be submitted to the department during sixth semester and shall be produced before the examiners appointed by the College. The project report/dissertation shall be subject to evaluation followed by a viva-voce/defence in the sixth semester.

4.4. **Project/Dissertation of BCA**

Minor project

All students shall do a minor project in the fourth semester. The project shall be done individually or as a group of maximum five (5) students. The report of the project shall be submitted before the examiners appointed by the College. The project report shall be subject to evaluation followed by a viva-voce.

Major project

All students shall do a major project in the sixth semester. The project shall be done individually. The report of the project shall be submitted to the department during sixth semester and shall be produced before the examiners appointed by the College. The project report shall be subject to evaluation followed by a viva-voce.

4.5 In exceptional circumstances like natural calamities, epidemics, pandemics etc, viva/OJT may be conducted through online mode also. Head of the Department shall make the arrangement for conducting the viva/OJT examinations through online. The entire proceedings shall be recorded and the soft copy shall be submitted to the Controller of Examinations.

4.6 **Evaluations**

The evaluation of each course shall contain two parts.

i In-Semester Assessment (ISA)
ii End-Semester Assessment (ESA)

Both ISA and ESA shall be carried out using indirect grading. The ISA: ESA ratio shall be 1:4, for courses with or without practical. There shall be a maximum of eighty (80) marks for end-semester assessment and twenty (20) marks for in-semester assessment.

4.7 **In-semester assessment**

The components of the in-semester assessment and their marks are given below.

Common Courses and courses without practical

Component	**Marks**
Attendance	2
Exam 1 & Exam 2 *Marks shall be secured from two examinations based on modern tools	2½ + 2½
Exam 3 (written examination)	5
Quiz/Poster/Seminar/Field report/Group Discussion/Work Book/Assignment/Article Review/Viva (Any two from the above)	4 + 4
Total	**20**

Marks for attendance

% of Attendance	Marks
Above 90	2
75 – 90	1

(Decimals shall be rounded off to the next higher whole number)

Courses other than common courses with practical (except BCA & BSc Psychology)

Component	Marks
Attendance	2
Exam 1 & Exam 2 *Marks shall be secured from two examinations based on modern tools	2 + 2
Exam 3 (written examination)	3
Quiz/Poster/Seminar/Field report/Group Discussion/Work Book/Assignment/Article Review/Viva (Any two from the above)	3 + 3
Total	**15**

Marks for attendance

% of Attendance	Marks
Above 90	2
75 – 90	1

(Decimals shall be rounded off to the next higher whole number)

The internal assessment of practical courses shall be conducted either annually or in each semester. The components for internal assessment are given below.

Internal assessment of practical courses evaluated in each semester

Component	Marks
Attendance	1
Lab Test	2
Record*	2
Total	**5**

*Marks awarded for Record shall be related to number of experiments/practicals recorded.

Marks for attendance

% of Attendance	Marks
Above 75	1

(Decimals shall be rounded off to the next higher whole number)

Internal assessment of practical courses evaluated annually

Component	Marks
Attendance	2
Lab involvement	3
Lab Test/Viva/Field report	3
Record*	2
Total	**10**

*Marks awarded for Record shall be related to number of experiments/practicals recorded.

Marks for attendance

% of Attendance	Marks
Above 90	2
75 – 90	1

(Decimals shall be rounded off to the next higher whole number)

Assessment of practical courses of BCA programme

The internal assessment of practical courses shall be conducted in each semester. The ISA:ESA ratio shall be 1:4. There shall be a maximum of eighty (80) marks for end-semester evaluation and twenty (20) marks for in-semester assessment. The components for internal assessment are given below.

Component	Marks
Attendance	2
Viva	4
Record	4
Test (1×10=10) or (2×5=10)	10
Total	20

Marks for attendance

% of Attendance	Marks
Above 90	2
75 – 90	1

(Decimals shall be rounded off to the next higher whole number)

Assessment of practical courses of BSc Psychology programme

The internal assessment of practical courses shall be conducted in each semester. The ISA: ESA ratio shall be 1:4. There shall be a maximum of eighty (80) marks for end-semester evaluation and twenty (20) marks for in-semester assessment. The components for internal assessment are given below.

Component	Marks
Attendance	2
Record	5
Viva	6
Test papers	7
Total	20

Marks for attendance

% of Attendance	Marks
Above 90	2
75-90	1

(Decimals shall be rounded off to the next higher whole number)

4.8 To ensure transparency of the evaluation process, the ISA mark awarded to the students in each course in a semester shall be published on the notice board according to the schedule in the academic calendar published by the College. There shall not be any chance for improvement of ISA. The course teacher and the faculty mentor shall maintain the academic record of each student registered for the course which shall be forwarded to the office of the Controller of Examinations through the Head of the Department and a copy shall be kept in the office of the Head of the Department for at least two years for verification.

4.9 A student who has not secured minimum marks in the in-semester assessment can redo the same before the end semester examination of the semester concerned.

4.10 **End-semester assessment**

The end-semester examination in theory and practical courses shall be conducted by the College.

4.11 The end-semester examinations shall be conducted at the end of each semester. There shall be one end-semester examination of three (3) hours duration in each lecture based course.

4.12 The question paper shall be strictly on the basis of model question paper set by Board of Studies.

4.13 A question paper may contain short answer type/annotation, short essay type questions/problems and long essay type questions. Marks for each type of question can vary from programme to programme, but a general pattern may be followed by the Board of Studies.

4.14 End-semester Examination question paper pattern shall be as given below.

Core Courses and complementary courses in English of BA Programmes in English

Section	Total No. of Questions	No. of Questions to be Answered	Marks	Total Marks for the Section
A	13	10	5	50
B	4	2	15	30
			Maximum	**80**

Courses without practical except core courses of BA Programmes in English

Section	Total No. of Questions	No. of Questions to be Answered	Marks	Total Marks for the Section
A	12	10	2	20
B	9	6	5	30
C	4	2	15	30
			Maximum	**80**

Courses with practical

Section	Total No. of Questions	No. of Questions to be Answered	Marks	Total Marks for the Section
A	12	10	2	20
B	9	6	4	24
C	4	2	8	16
			Maximum	**60**

Courses in BSc Mathematics Programme

Section	Total No. of Questions	No. of Questions to be Answered	Mark for Each Question	Total Marks for the Section
A	12	10	1	10
B	At most 13	Questions with total marks 40 will be given. All questions can be answered.	3, 4, 5 or 6	30
C	Four question sets, one from each module. Each set consists of two questions out of which one is to be answered.	4	10	40
			Maximum	**80**

4.15 Photocopies of the valued answer scripts of the end semester examination shall be made available to the students for scrutiny as per the regulations in the examination manual.

4.16 Practical examination shall be conducted annually or in each semester. The duration and frequency of practical examination shall be decided by the respective Board of Studies.

4.17 Practical examination shall be conducted by the examiners appointed by the Controller of Examinations.

4.18 The marks for end-semester theory and practical examinations are given below

Course	Marks
Courses without practical	80
Course with practical	60
Practical (assessment in each semester)	20
Practical (odd and even semester combined)	40
Course with practical (BCA and BSc Psychology programmes)	80
Practical (BCA and BSc Psychology programmes)	80

4.19 The project report/dissertation shall be subject to in-semester assessment followed by end-semester evaluation at the end of the programme. In-semester assessment is to be done by the supervising teacher and end-semester assessment by an evaluation board consisting of an examiner appointed by the Controller of Examinations and the Head of the Department or his nominee. A viva-voce/defence related to the project work shall be conducted by the end-semester evaluation board and students have to attend the viva-voce/defence individually.

Components of Project Evaluation	**Marks**
In-semester Assessment	20
Dissertation	50
Viva-Voce	30
Total	**100**

4.20 If the student fails in project evaluation, he or she shall submit the project report/dissertation after modifying it on the basis of the recommendations of the examiners.

4.21 For all courses (theory and practical) an indirect grading system based on a ten (10) point scale according to the percentage of marks (ISA + ESA) is used to evaluate the performance of the student in that course. The percentage shall be rounded mathematically to the nearest whole number.

Percentage of Marks	**Grade**	**Performance**	**Grade Point**
95 and above	S	Outstanding	10
85 to below 95	A+	Excellent	9
75 to below 85	A	Very Good	8
65 to below 75	B+	Good	7
55 to below 65	B	Above Average	6
45 to below 55	C	Satisfactory	5
35 to below 45	D	Pass	4
Below 35	F	Failure	0

5 CREDIT POINT AND CREDIT POINT AVERAGE

5.1 **Credit Point**

Credit Point (CP) of a course is calculated using the formula

CP = C × GP

where C is the credit and GP is the grade point

5.2 **Semester Credit Point Average**

Semester Credit Point Average (SCPA) is calculated using the formula

SCPA = TCP/TCS

where TCP is the total credit point of all the courses in the semester and TCS is the total credits in the semester

CPA shall be rounded off to two decimal places.

5.3 **Cumulative Credit Point Average**

Cumulative Credit Point Average (CCPA) is calculated using the formula

CCPA = TCP/TC

where TCP is the total credit point of all the courses in the whole programme and TC is the total credit in the whole programme

CPA shall be rounded off to two decimal places.

5.4 **Credit Point Average (CPA)** of different category of courses viz. Common Course I, Common Course II, Complementary Course I, Complementary Course II, Vocational Course, Core Course etc. are calculated using the formula

CPA = TCP/TC

where TCP is the Total Credit Point of a category of course and TC is the total credit of that category of course

Grades for the different courses, semesters, Semester Credit Point Average (SCPA) and grades for overall programme, Cumulative Credit Point Average (CCPA) are given based on the corresponding Credit Point Average (CPA) as shown below:

CPA	Grade	Performance
9.5 and above	S	Outstanding
8.5 to below 9.5	A+	Excellent
7.5 to below 8.5	A	Very Good
6.5 to below 7.5	B+	Good
5.5 to below 6.5	B	Above Average
4.5 to below 5.5	C	Satisfactory
4 to below 4.5	D	Pass
Below 4	F	Failure

5.5 A separate minimum of 30% marks each for in-semester and end-semester assessment (for both theory and practical) and aggregate minimum of 35% are required for a pass in a course.

5.6 For a pass in a programme, a separate minimum of grade 'D' is required for all the individual courses.

5.7 If a candidate secures F Grade for any one of the courses offered in a semester/programme, only F grade will be awarded for that semester/programme until the student improves this to D grade or above within the permitted period.

5.8 Candidate who secures D grade and above will be eligible for higher studies.

6 SUPPLEMENTARY/IMPROVEMENT EXAMINATION

6.1 There will be supplementary examinations and chance for improvement. Only one chance will be given for improving the marks of a course.

6.2 There shall not be any improvement examination for practical examinations and examinations of the final year.

7 ATTENDANCE

7.1 The minimum requirement of aggregate attendance during a semester for appearing the end semester examination shall be 75%. Condonation of shortage of attendance to a maximum of ten (10) days in a semester subject to a maximum of two times during the whole period of undergraduate programme may be granted by the College. This condonation shall not be counted for internal assessment.

7.2 Benefit of attendance may be granted to students representing the College, University, State or Nation in Sports, NCC, NSS or Cultural or any other officially sponsored activities such as College union/University union activities etc., on production of participation/attendance certificates, within one week from competent authorities, for the actual number of days participated, subject to a maximum of ten (10) days in a semester, on the specific recommendations of the Faculty Mentor and Head of the Department.

7.3 A student who does not satisfy the requirements of attendance shall not be permitted to appear for the end-semester examinations.

7.4 Those students who are not eligible even with condonation of shortage of attendance shall repeat the course along with the next batch after obtaining readmission.

8 BOARD OF STUDIES AND COURSES

8.1 The Board of Studies concerned shall design all the courses offered in the UG programme. The Board shall design and introduce new courses, modify or re-design existing courses and replace any existing courses with new/modified courses to facilitate better exposure and training for the students.

8.2 The syllabus of a programme shall contain vision, mission and Programme Outcomes of the College, Programme Specific Outcomes and Course Outcomes of the Department. It shall also contain course mapping table, programme articulation matrix and model question papers.

8.3 The syllabus of a course shall contain the title of the course, course outcomes, course mapping table, contact hours, the number of credits, and reference materials.

8.4 Each course shall have an alpha numeric code.

8.5 Every programme conducted under Credit Semester System shall be monitored by the Academic Council.

9 REGISTRATION

9.1 A student who registers his/her name for the external examination for a semester will be eligible for promotion to the next semester.

9.2 A student who has completed the entire curriculum requirement, but could not register for the semester examination can register notionally, for getting eligibility for promotion to the next semester.

9.3 A student may be permitted to complete the programme, on valid reasons, within a period of twelve (12) continuous semesters from the date of commencement of the first semester of the programme.

9.4 The minimum strength of students for open courses is 15 and the maximum is 75 per batch.

9.5 Each student shall register for the open courses in the prescribed registration form in consultation with the faculty mentor during fourth semester. Faculty mentor shall permit registration on the basis of the preferences of the student and availability of seats.

10 ADMISSION

10.1 The admission to all UG programmes shall be as per the rules and regulations of the College/University.

10.2 The eligibility criteria for admission shall be as announced by the College/University from time to time.

10.3 Separate rank lists shall be drawn up for seats under reservation quota as per the existing rules.

10.4 There shall be an academic and examination calendar prepared by the College for the conduct of the programmes.

11 MARK CUM GRADE CARD

11.1 The College under its seal shall issue to the students, a Mark cum Grade Card on completion of each semester, which shall contain the following information.

a. Name of the Student
b. Register Number
c. Photo of the student
d. Degree
e. Programme
f. Date of Birth
g. Date of Eligibility
h. Semester and Name of the Examination
i. Month and Year of Examination
j. Stream
k. Course Code, Title and Credits of each course opted in the semester
l. Marks for ISA, ESA, Total Marks (ISA + ESA), Maximum Marks, Letter Grade, Grade Point (GP), Credit Point (CP) and Institution Average in each course opted in the semester
m. Total Credits, Marks Awarded, Credit Point, SCPA and Letter Grade in the semester
n. Result
o. Credits/Grade of Extra Credit Courses

11.2 The final Mark cum Grade Card issued at the end of the final semester shall contain the details of all courses taken during the entire programme including those taken over and above the prescribed minimum credits for obtaining the degree. The final Mark Cum Grade Card shall show the CCPA, the overall letter grade of a student for the entire programme and level of attainment of PO and PSO.

12 AWARD OF DEGREE

The successful completion of all courses other than extra credit courses with ‘D’ grade shall be the minimum requirement for the award of the degree.

13 MONITORING COMMITTEE

There shall be a Monitoring Committee constituted by the Principal to monitor the internal evaluation conducted by the College. The Course Teacher, Faculty Mentor, and the College Coordinator shall keep all the records of the continuous evaluation, for at least a period of two years, for verification.

14 GRIEVANCE REDRESSAL MECHANISM

14.1 In order to address the grievance of students regarding ISA, a two-level grievance redressal mechanism is envisaged.

14.2 A student can approach the upper level only if grievance is not addressed at the lower level.

14.3 Department level: The Principal shall form a Grievance Redress Committee in each Department comprising of course teacher and one senior teacher as members and the Head of the Department as Chairman. The Committee shall address all grievances relating to the internal assessment of the students.

14.4 College level: There shall be a College level Grievance Redress Committee comprising of Faculty Mentor, two senior teachers and two staff council members (one shall be an elected member) and the Principal as Chairman. The Committee shall address all grievances relating to the internal assessment of the students.

15 TRANSITORY PROVISION

Notwithstanding anything contained in these regulations, the Principal shall, for a period of three years from the date of coming into force of these regulations, have the power to provide by order that these regulations shall be applied to any programme with such modifications as may be necessary.

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Affiliated to Mahatma Gandhi University, Kottayam, Kerala
Changanassery, Kottayam, Kerala, India-686101

30-Jan-2021

CONSOLIDATED MARK CUM GRADE CARD

(Common for BA/BSc/BCom/BCA/BVoc Degree programmes)

Name of Candidate :
Permanent Register Number (PRN) :
Degree :
Programme :
Stream :
Date of Birth :
Date of Eligibility for the Degree :

PHOTO

SEMESTER RESULTS

Semester	Marks Awarded	Maximum Marks	Credits	SCPA	Grade	Month and Year of Passing	Results
Semester I							
Semester II							
Semester III							
Semester IV							
Semester V							
Semester VI							
Total							

PROGRAMME PART RESULTS

Programme Part	Marks Awarded	Maximum Marks	Credit Points	Credits	CCPA	Grade
Common Course I:						
Common Course II :						
Core Course:						
Complementary Course :						
Complementary Course:						
Open Course						
Total						

FINAL RESULT

CUMULATIVE CREDIT POINT AVERAGE (CCPA) =	GRADE =	*Grace Mark Awarded

Entered by:

Verified by:

Controller of Examinations

Principal

Permanent Register Number (PRN):

Course Code	Course Title	Credits (C)	Marks						Grade Awarded (G)	Grade Point (GP)	Credit Point (CP)	Institution Average (IA)	Result
			ESA		ISA		Total						
			Awarded	Maximum	Awarded	Maximum	Awarded	Maximum					
SEMESTER I													
SEMESTER II													
SEMESTER III													

SEMESTER IV													
SEMESTER V													
SEMESTER VI													
	End of Statement												

DESCRIPTION OF THE EVALUATION PROCESS

Grade and Grade Point

The evaluation of each course comprises of In-Semester Assessment (ISA) and End-Semester Assessment (ESA) components in the ratio 1:4 for all Courses. Grades and Grade Points are given on a ten (10) point scale based on the percentage of Total Marks (ISA + ESA) as given in Table 1. Decimals are corrected to the nearest whole number.

Credit Point (CP) of a course is calculated using the formula

CP = C × GP

where C is the Credit and GP is the Grade Point.

Credit Point Average (CPA) of a semester/programme is calculated using the formula

CPA = TCP ÷ TC

where TCP is the Total Credit Point and TC is the Total Credit.

CPA shall be rounded off to two decimal places.

Table 1

Percentage of Marks	Grade	Performance	Grade Point
95 and above	S	Outstanding	10
85 to below 95	A+	Excellent	9
75 to below 85	A	Very Good	8
65 to below 75	B+	Good	7
55 to below 65	B	Above Average	6
45 to below 55	C	Satisfactory	5
35 to below 45	D	Pass	4
Below 35	F	Failure	0

Semester Credit Point Average (SCPA) and Cumulative Credit Point Average (CCPA)

Grades for the different Semesters and overall Programme are given based on the corresponding CPA, as shown in Table 2.

Table 2

CPA	Grade	Performance
9.5 and above	S	Outstanding
8.5 to below 9.5	A+	Excellent
7.5 to below 8.5	A	Very Good
6.5 to below 7.5	B+	Good
5.5 to below 6.5	B	Above Average
4.5 to below 5.5	C	Satisfactory
4.0 to below 4.5	D	Pass
Below 4	F	Failure

For conversion of SCPA into percentage, multiply the secured SCPA by 10.

For conversion of CCPA into percentage multiply the secured CCPA by 10.

Note: A separate minimum of 30% marks is required for a pass for both In-Semester Assessment and End-Semester Assessment in each course. An aggregate minimum of 35% marks is required for a pass in each course. For a pass in a programme, a minimum CPA of 4 is required.

SHORT TERM COURSES

The main objective of the short term courses offered by the college is to supplement the students with various skills and technical know-how outside the structured academic curriculum, to produce quality citizens who are academically proficient, self-reliant and socially committed. The courses have compulsory components and optional components that equip the students to attain various programme objectives envisaged by the Vision and Mission statements of the college.

All Short-Term Courses (STCs) are coordinated by the Department of Short Term Courses, headed by a Director and is supervised by a Vice Principal nominated by the Principal. Each component of the STC is coordinated and managed by a Faculty Convener. The Advisory Board of the Department consists of the Vice-Principals, Director of the Short Term Courses and the various Conveners.

In case of any grievances, students can approach the Grievance Redressal Cell of the STC which consists of the Vice-Principal in Charge, Director and the concerned Convener. If the student feels that the issue was not adequately addressed, he/she can approach the Grievance Redressal Cell of the college. The grading pattern for all courses except the MOOCs will be the same as in the UG regulations 2022. The courses offered by the department are given in the following table.

	Name	Semesters	Type	Credit
1	Value Education	I to VI	Compulsory	3
2	Basic Life Support System and Disaster Management (BLS & DM)	I	Compulsory	1
3	Social Awareness Course (SAC)	I and II	Compulsory	2
4	Skill Development Courses (SDC)	II and III	Compulsory	2
5	Industry Familiarisation Course	IV	Compulsory	2
6	Finishing School	III and IV	Compulsory	1
7	Virtual Lab	V	Optional	1
8	Massive Online Open Courses	I to V	Optional	Variable Credit
9	Inter disciplinary Research	I to V	Optional	3

REGULATIONS FOR SHORT TERM COURSES

VALUE EDUCATION

Value Education is a compulsory extra credit course with three (3) credits for all the students admitted to the undergraduate programmes.

Duration

The duration of the course shall be three academic years (six semesters). There shall be minimum 60 hours spread over three years with 20 hours every academic year.

Evaluation

The evaluation of each course shall contain two parts.

i. Continuous evaluation (every year)
ii. Final evaluation (every year)

There shall be a maximum of 50 marks comprising of forty (40) marks for final evaluation and ten (10) marks for continuous evaluation.

Continuous Evaluation

Component	Marks
Assignment	5
Attendance	5
Total	10

1. **Assignment**
   The students shall submit at least one assignment in every year. The marks for assignment is five (5).
2. **Attendance**
   The minimum requirement of aggregate attendance during a year for appearing the final examination shall be 75%.

Marks for attendance

Maximum of five (5) marks will be given for attendance as follows.

% of Attendance	Marks
90 and above	5
85-89	4
80-84	3
76-79	2
75	1

(Decimals shall be rounded off to the next higher whole number)

Final evaluation

Final evaluation shall be conducted by the course coordinator at the end of every year.

There shall be an annual written examination of one and a half hours (1½) duration with a maximum forty marks (40), every year.

The question paper shall be strictly on the basis of model question paper set by the Expert Committee.

A question paper consists of short answer type, short essay type and long essay type questions.

The total marks of the course (three years combined) shall be one hundred and fifty (150).

Award of certificate

A separate minimum 30% marks each for continuous evaluation and final evaluation and an aggregate minimum of 35% are required for a pass in the course.

If a student does not acquire minimum marks in first and second years, he/she can continue the course.

The student shall be eligible to get certificate only after completing the course with D Grade. On successful completion of the course, the grade awarded will be indicated in the Mark cum Grade Card.

The grading pattern will be the same as in UG Regulations 2022.

The course shall be completed during the tenure of the programme.

BASIC LIFE SUPPORT SYSTEM AND DISASTER MANAGEMENT (BLS & DM)

- The main objective of this course is to provide intensive training on Basic Life Support System and Disaster Management with the help of professional trainers and adequate numbers of mannequins and kits for imparting the training to students.
- This course is compulsory for all the undergraduate students of this college and has one (1) credit.
- The course on BLS & DM shall be conducted by a nodal centre created in the College.
- Each student shall undergo five (5) hours of hands-on training in BLS & DM organised by the Centre for BLS & DM.
- After the completion of the training, the skills acquired shall be evaluated using an offline/online test and grades shall be awarded.
- Nodal Centre for BLS & DM shall conduct an online test and publish the results.
- Students who could not complete the requirements of the BLS & DM training shall appear for the same along with the next batch.
- The grading of the course is as per the grading pattern in UG Regulations 2022.

SOCIAL AWARENESS COURSE (SAC)

- The aim of SAC is to make students aware of the problems that different societies and communities face on a day-to-day basis and to be conscious of the difficulties and hardships of society.
- This is a compulsory course with two (2) credits.
- Social Awareness Course shall be conducted by a nodal centre consisting of the convenor, other faculty members nominated by the Principal.
- The centre shall identify the areas where the students can serve the society through the course.
- During the first semester itself, the centre shall organise activities to sensitize the students about the significance and relevance of Social Awareness and publish a list of different areas where they can work as volunteers.
- The centre shall allot students to various areas based on their preference.
- Students shall carry out the voluntary work allotted to them after the regular class hours/weekends/holidays falling in the first and second semesters and the summer vacation following the second semester.
- Evaluation of the SAC activity shall be based on the hours of work put in by a student. A minimum of 50 hours of social work (corresponding to 50 marks) is required for the successful completion of the course. Every additional work beyond the minimum 50 hours shall fetch five (5) marks per hour. Maximum marks shall be 100.
- Students who donate blood during the first year shall be given 10 marks on production of the certificate from the medical officer. However, marks earned through blood donation shall not be counted for a pass in the course. Mark for blood donation shall be awarded only once during the SAC.
- Two credits shall be awarded to students who complete the requirements of SAC.
- The grading will be as per the grading pattern in the UG Regulations 2022.
- Students who could not complete the requirements of the SAC shall appear for the same with the next batch.
- The Director of Short-Term Courses and Convenor of SAC has the right to exclude students who are physically challenged from SAC, if requested.

SKILL DEVELOPMENT COURSES (SDC)

- This is a compulsory component of STC with two (2) credits.
- SDC's shall be completed within the first four semesters of the programme.
- Depending on the nature of the course, there will be a theory component and a skill development component.
- The credit will be awarded only if the student gets a D grade (35% marks) and above.
- A student can do a maximum of three skill Development Courses according to his/her choice, but pass in at least one course is compulsory.
- The Convenor of SDC will coordinate the course.
- The Head of the Department concerned in consultation with the faculty members may prepare a syllabus for the SDC, which will be approved by the Board of Studies concerned.

Evaluation of SDC

The evaluation the course shall be done internally and contain two parts.

i. Continuous evaluation
ii. Final evaluation

Both continuous evaluation and final evaluation shall be carried out using indirect grading. The marks for continuous evaluation is twenty (20) and that of the final evaluation is eighty (80).

Continuous evaluation

The components of the continuous evaluation and their marks are as below.

For all courses, without practical

There are two components for continuous evaluation, which include attendance and assignment. All the components of the continuous evaluation are mandatory.

Component	Marks
Attendance	5
Assignments	15
Total	**20**

Marks for attendance

Minimum 75% attendance is compulsory for attending the final examination.

% of Attendance	Marks
90 and above	5
85 - 89	4
80 – 84	3
76 – 79	2
75	1

(Decimals shall be rounded mathematically to the nearest whole number)

For all courses with practical

The components for continuous evaluation of courses with practical are given below.

Component	Marks
Attendance	5
Lab/skill work involvement	15
Total	**20**

Assignments

At least one assignment shall be submitted for the course.

Final evaluation

The final evaluation of theory and practical courses shall be conducted by the office of the Controller of Examinations. It can be in the form of 80 marks written examination or 80 marks project/practical examination or 80 marks written and project/practical examination combined, as decided by the Board of Studies concerned.

INDUSTRY FAMILIARIZATION COURSE

- It is a compulsory course with two (2) credits.
- Every UG student shall undergo a compulsory industry familiarization course for a minimum period of five days (25 hours) at a centre identified by the concerned department.
- Head of the Department and the Mentor of the class shall monitor the progress of the course.
- Industry familiarization course shall be carried out preferably during the summer vacation following the fourth semester or during the Christmas vacation falling in the fourth semester or holidays falling in the semester.
- At the end of the stipulated period, each student shall produce a course completion cum attendance certificate and an illustrated report of the training he/she has underwent, duly certified by the supervisor and Head of the institution where the industry familiarization course has been undertaken.
- On receipt of the course completion cum attendance certificate and the report, the Mentor shall prepare a list of students who have completed the course and a list of students who failed to complete the course. The Head of the department shall verify the lists and forward to the Convenor.
- Students who could not complete the requirements of the course shall appear for the same along with the next batch.
- Grade will be awarded as per the grading pattern in UG Regulations 2022.

FINISHING SCHOOL

- It is a compulsory course with one (1) credit.
- The course provides compulsory training for all under graduate students of this college.
- The training is to help students develop their soft skills and interview skills.
- The training shall impart soft skills comprising of language skills, personal presentation and grooming, table manners, resume preparation, group discussion techniques, and interview skills among the undergraduate students.
- This course shall be conducted during the third and fourth semesters for all the undergraduate students.
- There will be a total of 20 contact hours which shall be handled by a team of professional members/faculty. In addition, a one-day outbound training session by a team of professional trainers that touches on the aspects of creativity, problem solving and team building shall also be organized.
- The students shall be assessed on the basis of the components given below.

Component	Marks
Attendance	5
Aptitude Test	10
Assignments	10
Group discussion	10
Interview	15
Total	**50**

Marks for attendance

Maximum of five (5) marks will be given for attendance as follows.

% of Attendance	Marks
90 and above	5
85-89	4
80-84	3
76-79	2
75	1

(Decimals shall be rounded off to the next higher whole number)

Grades will be awarded as per grading pattern in UG Regulations 2022.

VIRTUAL LAB EXPERIMENTS

- This is an optional course with one (1) credit.
- The main aim of the Virtual Lab Experiments is to provide remote-access to simulation-based Labs in various disciplines of Sciences which enthuse students to conduct experiments by arousing their curiosity.
- The Convenor will coordinate the Virtual Lab component and he may use the services available in different virtual lab platforms after the approval of the advisory body.
- Students have to do at least 36 hours of experiments and they get a maximum of one credit for this.
- Convenor and the mentor of the student shall oversee the progress and assign grades as per the grading pattern in UG Regulations 2022 after the completion of the programme.

MASSIVE OPEN ONLINE COURSE (MOOC)

- MOOCs are an integral part of today's education.
- Those students who participate in MOOC courses conducted by the Government (SWAYAM) and other reputed agencies earn additional credits on production of course certificates.
- The students shall approach the Convener of the component to verify whether the agency is approved or not before registering for such courses and claiming credits.
- SB College Local Chapter of SWAYAM/NPTEL may be consulted for assistance.
- A student can take maximum of 5 courses during Semester I to Semester V of their UG programme.
- The selected course need not be in the same discipline of the study of the student.
- This is an optional course with variable credits for each course.
- Number of credits awarded to each course depends on the duration of the course.
- A course of 4 to 6 weeks or 18 hours fetch one (1) credit, 6 - 10 weeks; two (2) credits and more than 10 weeks, three (3) credits.
- In case of any dispute, students may approach the Grievance Redressal Cell of the STC.

INTERDISCIPLINARY RESEARCH

- To enhance the research aptitude of students, College offers a platform to conduct interdisciplinary research for its UG students with the help of the Centre of Interdisciplinary Research (CIDR).
- First year UG students interested in interdisciplinary research may approach the Convener of this component.
- He will find a supervisor from the home department and a co-supervisor from another discipline/department.
- Students will be given training in basic research methodology with the help of lectures/MOOCs/tutorials after which the student may select a research problem under the supervision of the supervisor and co-supervisor.
- Students are expected to finish their research before the beginning of the sixth semester.
- After that, they shall write their project report, communicate the research findings to UGC approved journals, and submit the report to the Convenor in the prescribed format, who will arrange the oral/poster presentation of the findings and evaluate the thesis with the help of a Board of Examiners approved by the Director of the STC and will be graded.
- On successful completion of all the procedures, students will be awarded three credits.
- The same project report may not be used as such for the final year project work of the student.
- This is an optional course with three (3) credits.

OPEN COURSES

Course Code	Course Title	Hours /Week	Total Hours	Credit	ISA	ESA	Total
COMM501	Applicable Mathematics	3	54	3	20	80	100
COMM502	Mathematics for Data Analysis	3	54	3	20	80	100
COPH501	Physics in Daily Life	3	54	3	20	80	100
COCH501	Forensic Science	3	54	3	20	80	100
COBO501	Horticulture and Nursery Management	3	54	3	20	80	100
COZO501	Health and Wellness	3	54	3	20	80	100
COPY501	Psychology and Personal Growth	3	54	3	20	80	100
COEN501	Translation Studies	3	54	3	20	80	100
COEV501	Introduction to Print, Mobile and Cultural Journalism	3	54	3	20	80	100
COML501	മാധ്യമപഠനം	3	54	3	20	80	100
COML502	ചലച്ചിത്രപഠനം	3	54	3	20	80	100
COML503	മലയാള സിനിമ	3	54	3	20	80	100
COEC501	Population Studies	3	54	3	20	80	100
COCM501	Fundamentals of Accounting	3	54	3	20	80	100
COBT501	Biotechnology: Concepts and Applications	3	54	3	20	80	100
COMB501	Microbiology in Daily Life	3	54	3	20	80	100
COCS501	Internet Concepts and Web Designing	3	54	3	20	80	100
COPE501	Physical, Health and Life Skills Education	3	54	3	20	80	100

COMM501: APPLICABLE MATHEMATICS

Credit: 3 **Total Hours: 54**

Course Outcomes

CO1: Explain types of numbers and improve arithmetic skills.

CO2: Apply quantitative techniques to solve Mathematical problems.

CO3: Analyze and solve Mathematical models of real life problems.

CO4: Apply Mathematical language and notation to explain the reasoning underlying their conclusions when solving problems using Mathematical or statistical techniques.

CO5: Use Mathematical analysis methodologies to understand and solve problems.

Module 1: Number System and Trigonometry (13 Hours)

Types of numbers, Quadratic equations (Solution of quadratic equations with real roots only), Logarithms – All rules without proof, Multiplication and division of numbers, evaluating expressions of the form $x^{p/q}$, x any real number, p & q are integers, Permutations and combinations – simple applications, Trigonometry introduction, Values of trigonometric ratios of 0^0, 30^0, 45^0, 60^0 & 90^0, Heights and distances – Simple cases - (application of sinx, cosx, tanx, and their reciprocals only). Two dimensional geometry- Introduction, plotting points and drawing graph of the lines of the form ax + by + c = 0.

Module 2: Probability and Reasoning (13 Hours)

Probability – Introduction – Sample spaces and events, Simple examples like tossing coin, tossing die etc.., Logical Reasoning- Number series, Letter series, Distance and directions, Odd man out, Number puzzles, Blood relations, Logical and analytical reasoning.

Module 3: Ratio, Proportion and Average (14 Hours)

HCF and LCM of numbers, Fractions, Squares and square roots, cube and cube roots, simplifications, Ratio and Proportion, Percentage, Profit and loss, Simple average (No Weighed average)

Module 4: Elementary Mathematical Techniques (14 Hours)

Simple interest, Compound interest, Time and work, Work and wages, (Exclude Pipes and Systems from the core reference), Time and distance, Elementary mensuration – Area and perimeter of polygons, Elementary Algebra, (Simplifications of algebraic expressions)

Reference

1. M. Tyra, & K. Kundan: Concepts of Arithmetic, BSc Publishing Company, 2011.

Course designed by: Jinu Mary Jameson

COMM502: MATHEMATICS FOR DATA ANALYSIS

Credit: 3 **Total Hours: 54**

Course Outcomes

CO1: Discuss the basic ideas of data collection, analysis and interpretation**.**

CO2: Illustrate data sets using graphs and diagrams

CO3: Examine data with descriptive statistics tools

CO4: Interpret association between two variables by computing correlation.

CO5: Explain the concepts of regression analysis.

Module 1: Data Collection, Classification and Representation (13 Hours)

Definition of Statistics, Importance and limitations, Population and Sample, Primary and Secondary data, Geographical, Chronological, Qualitative and Quantitative Classifications of data, Frequency distribution and Tabulation, Bar diagram and Pie diagram, Histogram, Frequency polygon, Frequency curve, Ogives

Text 2, Relevant Chapters

Module 2: Measures of Central Tendency (14 Hours)

Central Tendency and its Measures, Arithmetic mean, Median, Mode, Geometric Mean and Harmonic Mean and their properties

Text 1, Sections: 2.4 - 2.9.1

Module 3: Measures of Dispersion (14 Hours)

Dispersion and its Measures, Range, Quartile Deviation, Mean Deviation and Standard deviation, Relative Measures of Dispersion, Coefficient of variation, Deciles, Percentiles.

Text 1, Sections: 2.11,2.12-2.14

Module 4: Bivariate Data (13 Hours)

Correlation, Scatter diagram, Karl Pearson's Coefficient of Correlation, Rank Correlation-Spearman's Rank Correlation Coefficient (with tied ranks), Linear Regression, Regression coefficients and properties, Fitting of Regression lines.

Text 1, Section: 10.1-10.4, 10.7-10.7.2, 11.1-11.2.2

Textbooks

1. S. C. Gupta, V. K. Kapoor, Fundamentals of Mathematical Statistics, 11th edition, Sultan Chand & Sons, 2017
2. S. P. Gupta, Statistical Methods, 45th edition, Sultan Chand & Sons, 2019

Reference

1. B. L. Agarwal, Basic Statistics, New Age International (P)LTD, 2006

Course designed by: Sachin Varghese Biju

COPH501: PHYSICS IN DAILY LIFE

Credit: 3 **Total Hours: 54**

Course Outcomes

On successful completion of the course, the students will be able to:

CO1: **Describe** the basic concepts in linear and rotational dynamics and apply them to various real-life situations,

CO2: Explain the basic concepts and laws related to work, energy and power

CO3: Describe the fundamentals phenomenon and laws associated with light and optical instruments

CO4: **Explain** the basic laws and rules in connection with electricity, electrical energy and power and **apply** them to solve simple problems

CO5: **Explain** the basic laws and rules of fluids and fluid motion and **apply** them to solve simple problems

Module 1: Motion and Waves **(18 Hours)**

Velocity, acceleration, momentum, Idea of inertia, force laws of motion, Newton's law of gravitation, acceleration due to gravity, mass and weight, apparent weight, weightlessness, Work-power kinetic energy-potential energy-conservation of energy, Rotational motion, Moment of inertia, torque, centripetal and centrifugal force, banking of curves, centrifugal pump, roller coasters, transverse and longitudinal waves, sound waves, Doppler Effect.

Module 2: Light **(18 Hours)**

Reflection, refraction, interference, diffraction and scattering, Apparent depth, blue colour of sky, twinkling of stars, Total internal reflection-optical fiber, mirage, sparkling of diamond, rainbow, Mirrors, lenses, prism, dispersion, Myopia, hypermetropia, presbyopia and astigmatism, Fluorescence, phosphorescence, laser, Electromagnetic waves, radar, microwave oven.

Module 3: Electricity and Energy, Fluids and Heat **(18 Hours)**

Voltage and Current, Ohm's Law, Electric Energy, Electric Power, Calculation of energy requirement of electric appliances, Transformers and Generators, Hydroelectric power generation – wind power – solar power – nuclear power, Phases of matter, Fluids, Surface Tension, Viscosity, Capillary rise, Bernoulli's theorem and Applications, Heat Energy and Temperature, Temperature scales – Degree Celsius, Fahrenheit and Kelvin

Textbooks

1. Fundamentals of Physics with Applications by Arthur Beiser, TMH
2. Conceptual Physics by Paul G Hewitt, Pearson

Reference

1. Everyday Physics by Ho Hermaus, UIT Cambridge
2. The Physics of everyday things by James Kakalios, Crown Publishers, 2017, New York
3. From Physics to daily life by Beatrice Bressan, John Wily & Sons
4. Fundamentals of Physics by Halliday, Resnik and Walker, John Wiley & sons

COCH501: FORENSIC SCIENCE

Credit: 3 **Total Hours: 54**

Course outcomes

After the successful completion of the course, the students will be able to:

CO1: Describe different branches of forensics science in the basic level.

CO2: Explain the importance of fingerprint detection in the area of forensic science.

CO3: Identify different types of poisoning and its remedial measures.

CO4: Illustrate the importance of instrumentation techniques in the field of forensic science.

CO5: Demonstrate methods for the examination of fires, explosions and forgery notes.

Module 1: Introduction to Forensic Science (9 Hours)

Definition, History and development of forensic science**.** Basic principles of forensic science. Divisions of forensic science- forensic biology, forensic chemistry, forensic physics, forensic toxicology, ballistics, polygraph, serology, fingerprint detection, forensic accounting, forensic microbiology, cyber forensic, forensic psychology (definition only). Scope of forensic science.

Module 2: Crime Scene Management and Fingerprint detection. (9 Hours)

Types of crime scenes – indoor and outdoor. Crime scene search methods. (basic ideas only). Fundamental principles of fingerprinting. Types of fingerprints. Fingerprint patterns. Plain and rolled fingerprints. Latent prints. Mechanism of detection of fingerprints by different developing reagents. Preservation of developed fingerprints (basic ideas only).

Module 3: Forensic Toxicology (18 Hours)

Techniques used in toxicology. (Basic ideas) Toxicology testing-methodology (basic ideas only). Post-mortem Toxicology (basic ideas only). Dose-response relationship. Lethal dose 50 and effective dose 50. Classification of poisons. Physico-chemical (basic ideas only) Accidental, suicidal and homicidal poisonings and antidotes**.** Miscellaneous poisoning and venomous bites- Animal poisons. Snake venom. Carbon monoxide poisoning. Vegetable poisons. Poisonous seeds, fruits, roots and mushrooms. Beverages. Alcoholic and non-alcoholic illicit liquors. Analysis and identification of ethyl alcohol. Estimation of ethyl alcohol in blood and urine. Dope tests for alcohols.

Module 4: Forensic Examination of Fires, Explosions and Forgery Notes (18 Hours)

Types of fire. Conditions for fire. Fire extinguishing. Fire scene patterns. Analysis of fire debris. Analysis of ignitable liquid residue. Post-flashover burning. (basic ideas only). Classification of explosives – low explosives and high explosives. Examination of counterfeit Indian currency notes.

Textbooks

1. S.H. James and J.J. Nordby, Forensic Science: An Introduction to Scientific and Investigative Techniques, 2nd Edition, CRC Press, Boca Raton (2005).
2. W.G. Eckert and R.K. Wright in Introduction to Forensic Sciences, 2nd Edition, W.G. Eckert (ED.), CRC Press, Boca Raton (1997).
3. T.J. Gardener and T.M. Anderson, Criminal Evidence, 4th Ed., Wadsworth, Belmont (2001).
4. S.H. James and J.J. Nordby, Forensic Science: An Introduction to Scientific and Investigative Techniques, 2nd Edition, CRC Press, Boca Raton (2005).
5. P. K. Gupta, Fundamentals of Toxicology, Essential concepts and applications,Elsevier Science(2016).
6. N G Rao, Textbook of Forensic medicine and toxicology, Jaypee, 2nd edition (2010).
7. B.J. Heard, Handbook of Firearms and Ballistics, Wiley and Sons, Chichester (1997).
8. W.F. Rowe, Firearms identification, Forensic Science Handbook, Vol. 2, R. Saferstein (Ed.), Prentice Hall, New Jersey (1988).

Reference

1 B.B. Nanda and R.K. Tiwari, Forensic Science in India: A Vision for the Twenty First Century, Select Publishers, New Delhi (2001).

2 M.K. Bhasin and S. Nath, Role of Forensic Science in the New Millennium, University of Delhi, Delhi (2002).

3 D.A. Ashbaugh, Quantitative-Qualitative Friction Ridge Analysis, CRC Press, Boca Raton (2000).

4 C. Champod, C. Lennard, P. Margot an M. Stoilovic, Fingerprints and other Ridge Skin Impressions, CRC Press, Boca Raton (2004).

5 Lee and Gaensleen's, Advances in Fingerprint Technology, 3rd Edition, R.S. Ramotowski (Ed.), CRC Press, Boca Raton (2013).

6 M. Byrd, Crime Scene Evidence: A Guide to the Recovery and Collection of Physical Evidence, CRC Press, Boca Raton (2001).

7 W.J. Tilstone, M.L. Hastrup and C. Hald, Fisher's, Techniques of Crime Scene Investigation, CRC Press, Boca Raton (2013)

8 A. Poklis, Forensic toxicology in, Introduction to Forensic Sciences, 2nd Edition, W.G. Eckert (Ed.), CRC Press, Boca Raton (1997).

9 A.W. Jones, Enforcement of drink-driving laws by use of per se legal alcohol limits: Blood and/or breath concentration as evidence of impairment, Alcohol, Drug and Driving, 4, 99 (1988).
10 J.D. DeHaan, Kirk's Fire Investigation, 3rd Edition, Prentice Hall, New Jersey (1991).
11 A.A. Moenssens, J. Starrs, C.E. Henderson and F.E. Inbau, Scientific Evidence in Civil and Criminal Cases, 4th Edition, The Foundation Press, Inc., New York (1995).
12 R. Saferstein, Criminalistics, 8th Edition, Prentice Hall, New Jersey (2004).

Course designed by: Lt. James Baben George

COBO501: HORTICULTURE AND NURSERY MANAGEMENT

Credit: 3 **Total Hours: 54**

Course Outcomes

Students able to;

CO1: Describes and distinguishes different plant propagation methods

CO2: Identify and describe different types of gardens, garden components and gardening practices

CO3: Describes different organic manures and biofertilizers

CO4: Explains the new trends of farming with their advantages and limitations

Module 1: Plant Propagation **(15 Hours)**

Seed Propagation- Seed viability, seed dormancy, seed bed preparation, seedling transplanting, hardening of seedling

Advantages and disadvantages of seed propagation. Hybrid seeds.

Vegetative propagation : Cutting – stem cutting, root cutting and leaf cutting. Use of growth regulators for rooting.

Vegetative propagation: Layering - Simple layering, Air layering, Compound layering, Trench layering, Mount layering. Grafting- Approach grafting, Cleft grafting, Wedge grafting. Budding - Patch budding, Chip budding, Flap budding.

Vegetative propagation : Advantages and disadvantages of each method.

Module 2: Gardening **(12 Hours)**

Soil; physical and chemical properties, Soil components.

Preparation of potting mixture.

Common Garden tools and implements

Physical control of plant growth training and pruning; Bonsai; selection of plant for bonsai, method of bonsai formation

Module 3 - Organic manure and Biofertilizers **(12 Hours)**

Green manuring and organic fertilizers, – biocompost making methods

Types and method of vermicomposting.

General account about the microbes used as biofertilizer – Trichoderma, Rhizobium, PGPR, VAM and its influence on growth and yield of crop plants.

Role of plant growth regulators in horticulture

Module 4: New Approaches in Horticulture **(15 Hours)**

Precision Farming; Need for precision agriculture, technologies for precision farming

Fertigation

Methods of irrigation - surface, sub, drip and spray irrigations, Mist chambers- advantages and disadvantages. Crop scouting.

Protected farming and plant growing structures; polyhouse, glass house, green house.

Hydroponics – advantages and disadvantages, Systems of hydroponic culture, The nutrient solution, Rooting media. Aquaponics and Aeroponics.

Textbook

1. Adams C R, Early M P, 2004. Principles of Horticulture. Elsevier, New Delhi.

Reference

1. Barton West R, 1999. Practical Gardening in India. Discovery Pub. House, New Delhi.
2. Edmond J B, Senn T L, Andrews F S, Halfacre P G, 1975. Fundamentals of Horticulture (IV Edn). TMH, New Delhi.
3. John Weathers, 1993. Encyclopaedia of Horticulture. Discovery Pub. House. New Delhi
4. Jules Janick, 1979. Horticultural Science. Surjeet publications, Delhi
5. Kumar N, 1994. Introduction to Horticulture. Rajalakshmi Pub. Nagarcoil
6. Manibhushan Rao K, 1991. Text Book of Horticulture. Macmillan India Ltd.
7. Randhawa G S, Mukhopadhyay A, 1986. Floriculture in India.Allied Publishers Pvt. Ltd. Ahamedabad.
8. Sadhu M K, 1996. Plant Propagation. New age International publishers, N. Delhi
9. Vishnu Swarup, 1997. Ornamental Horticulture. MacMillan India Ltd.
10. Linda William, 2005. Ornamental Science Demystified. Tata Mc Graw hill Co.

Course designed by: Mr. Tom Joseph

COZO501: HEALTH AND WELLNESS

Credit: 3 **Total Hours: 54**

Course Outcome

CO1: Indicate the characteristics of a healthy lifestyle through proper diet and exercise

CO2: Identify the modes of transmission and prevention of infectious diseases

CO3: Describe the basics of human sexuality, sexual hygiene and reproduction

CO4: Justify the significance of mental health and indicate the ill effects of drug abuse

CO5: Distinguish the health problems of the elderly and illustrate the role of biology in human welfare

Module 1: Introduction **(1 hour)**

1.1 Definition and meaning of health
Dimensions and determinants of health

Module 2: Food and Nutrition **(4 Hours)**

2.1 Importance of nutrition; Macro and micro nutrients: Carbohydrates, Proteins, Lipids, Minerals, Vitamins, Water. Significance of dietary fibre

2.2 Meal pattern; Balanced diet; BMR; Malnutrition

Module 3: Health and Exercise **(3 Hours)**

3.1 BMI; Diet and Exercise; Physical activity and health benefits

3.2 Effect of exercise on body systems

Module 4: Food and Water borne diseases **(6 Hours)**

4.1 Food and water safety: general principles of hygiene

4.2 Important food borne illness- Staphylococcal food poisoning, Salmonellosis, Amoebiasis

4.3 Important water borne illness- Cholera,Typhoid and Hepatits A

Module 5: Emerging infectious diseases **(4 Hours)**

5.1 Swine flu (H1N1); Bird flu (H5N1)

5.2 Chikungunya; Dengue fever; Leptospirosis; Role of vectors in spread of diseases

Module 6: Life style diseases **(4 Hours)**

6.1 Obesity: causes and preventing measures; Diabetes: causes and management

6.2 Cardiovascular disorders: prevention and management
Cancer: different types, causes of cancer, carcinogens, diet & cancer

Module 7: Immunity **(2 Hours)**

7.1 Types of immunity; Antigen and Antibody; Vaccination

Module 8: Sexual Health and Hygiene **(7 Hours)**

8.1 Male and Female reproductive organs and hormones

8.2 Age related sexual changes –infantile, adolescent, adult

8.3 Female Reproductive cycle

8.4 Sexually Transmitted Diseases: HPV, Chancroid, Syphilis, Gonorrhoea, AIDS

Module 9: Human Reproduction and Infertility **(8 Hours)**

9.1 Human sperm and ovum, Fertilization

9.2 Pregnancy and associated changes

9.3 Pre-natal diagnosis:- Ultra sound scanning, Amniocentesis, Chorionic Villus Sampling, Fetoscopy; Human sex determination

9.4 Parturition and lactation, Importance of breast milk

9.5 Causes of male and female infertility

9.6 Assisted Reproductive Techniques- IVF, ICSI, GIFT, ZIFT, Donor Insemination (DI), Surrogacy

Module 10: Mental Health and Disorders **(4 Hours)**

10.1 Concept of mental health; Emotional adjustment and well being

10.2 Yoga; Meditation and Relaxation

10.3 Anxiety disorders; Bipolar disorder; Depression
Treatments for mental disorders

Module 11: Drug Abuse **(4 Hours)**

11.1 Tobacco related illnesses and tobacco control

11.2 Alcoholism

11.3 Drug and substance abuse

11.4 Abuse related illnesses and their control
Addiction; De-addiction

Module 12: Old age and associated problems **(2 Hours)**

12.1 Health problems of the elderly: Arthritis; Osteoporosis; Alzheimer's disease; Parkinson's disease

Module 13: Biology for Human Welfare **(5 Hours)**

13.1 DNA finger printing and applications – Probing for criminals, method to resolve paternity and maternity disputes

13.2 Organ transplantation; Cell replacement therapy; Gene therapy

13.3 Human genome project – a brief account

13.4 Genetically Modified Organisms

Reference

1. Arora, D.R. and Arora,B. 2008. Text Book of Microbiology. CBS Publishers and Distributers, New Delhi
2. Fashey, Tomas D, Insel, Paul M and Roth Walt 2005, Fit and Well. New York; McGraw Hill Inc
3. Greenberg, Jerol S and Dintiman George B ,1997, Wellness Creating a life of Health and Fitness, London Allyn and Bacon Inc.
4. Guyton, A.C. 1996. Text Book of Medical physiology. Prism Books Pvt. Ltd. Bangalore
5. Das, H.K. 2007. Text book of Biotechnology. Wiley India Pvt. Ltd. New Delhi
6. Hannigan, B. M., Moore, C. B. T. and Quinn, D. G. 2010. Immunology. Viva Books, New Delhi
7. Monica Cheesbrough, Laboratory Manual for Tropical Counties Vol.II LBS.
8. K. Park, 2017, Parks Text Book of Preventive & Social Medicine, Banarsidas Bhanot Publishers, Jabalpur
9. Pelczar M.J. Jr. E.C.S. Chane& N.R. Krieg, Microbiology (Concept & Applications)
10. Rai. B.C. Health Education and Hygiene. Published by Prakashan Kendra, Lucknow

Course designed by: Dr Philip Litto Thomas

COPY501: PSYCHOLOGY AND PERSONAL GROWTH

Credit: 3 **Total Hours: 54**

Course outcomes

On the successful completion of the course, the students shall be able to:

CO1: Use psychological understanding to develop effective personality and self-awareness.

CO2: Develop competence in understanding and managing emotions.

CO3: Develop the ability to recognize and manage signs and symptoms of stress.

CO4: Demonstrate the ability to create and sustain healthy relationships.

CO5: Apply psychological principles to enhance subjective wellbeing and happiness.

Module 1: Psychology and Self-awareness (10 Hours)

Psychology, Definition, Major perspectives, Branches of psychology, Pseudo psychology Personality, Features of healthy personality.

Understanding the Self: Self-concept and Self-esteem, Self-efficacy, Assessment of self-esteem, Strategies for enhancing self-esteem.

Module 2: Emotional and Cognitive Competence (12 Hours)

Emotion, Theories of emotion, Emotional Intelligence; EQ Competencies, Self- Awareness, Self-Management, Empathy, and Interpersonal Skills. Recognizing emotions in oneself. Perceiving emotions accurately in others. Assessment, Improving Emotional Intelligence.

Cognitive Competence: Setting and achieving goals; Effective time management; Metacognitive strategies

Module 3: Stress Management (12 Hours)

Stress: Definition, types, symptoms of stress, Theories, Examination anxiety, Assessment, Stress management techniques: Relaxation techniques, JPMR, creative Visualization, cognitive behavioral techniques: Identify and restructuring negative thoughts.

Module 4: Interpersonal Skills (10 Hours)

Effective Interpersonal Communication, Conversational Skills, Listening Skills, Reading Non-Verbal Messages, Psychology of close relationship, family, friendship, Love, Types of love, Strategies for sustaining a long-term relationship, Psychology of adjustment.

Module 5: Happiness and Wellbeing (10 Hours)

Happiness, Subjective wellbeing Ways for enhancing happiness, Measurement of happiness. Strategies for building Hope and Resilience. Definition, Developmental Perspectives, clinical perspective, Sources of Resilience

Reference

1. K. Ciccarelli Saundra, white j. Noland, Misra Girishwar, psychology, South Asian Ed. New Delhi: pearson,2017.
2. Myers, D. G. Social Psychology (11th ed.). New York: Mcgraw-Hill. (2012).
3. Hogg, M. &Vaughan, G.M. (2008). Social Psychology. Upper Saddle Rives, New Jersey
4. Body Language- A Guide to Professionals. New Delhi, Response Books,2000
5. DiMatteo, M.R., & Martin, L.R, Health Psychology. New Delhi: Pearson, 2017
6. Seaward, B.L. Managing Stress: Principles and Strategies for Health and Well-Being, 2018.

Course designed by: Expert Committee

COEN501: TRANSLATION STUDIES

Credit: 3 **Total Hours: 54**

Course Outcomes

On successful completion of this course, the students will be able to:

CO1: Demonstrate their understanding of the various theoretical concepts in the field of Translation.

CO2: Explain the different types and techniques of translations.

CO3: Examine Malayalam literature in depth and explain the nuances involved in its translation.

CO4: Translate and describe everyday communication in the English language.

CO5: Develop creative translation projects that are sensitive to the subtleties of the translator's language.

Module 1: Translation: Theoretical Aspects (18 Hours)

1. Translation Studies – Definition
2. Types of Literary Translation
3. Types of Non-Literary Translation
4. Translation techniques
5. Deforming tendencies in translation

Module 2: Translation: Case Studies (18 Hours)

1. Comparing "Bhagavatha" (trans. K. Satchidanandan) with its Malayalam source text "*Bhagavatham*" by Vijayalakshmi.
2. Comparing "Tharishu Bhoomi" (trans. Ayyappa Pankier) with its English source text "The Waste Land" by T S Eliot. (Excerpts)
3. Comparing "The World Renowned Nose" (trans. R. E. Asher) with its Malayalam source text "*Viswavikhyathamaya Mookku*" by Vaikom Muhammed Basheer.

Module 3: Translation: Practice (18 Hours)

1. Literary Translation – Practice
    - Translation of Poetry
    - Translation of Fiction
    - Translation of Drama
    - Translation of Prose
2. Non-Literary Translation – Practice

- Translation of Business and Everyday Communication – Letters, Brochures, Invitations.
- English Subtitling for Malayalam Movies
- News Translation

Reference

1. Bassnett, Susan. “Central Issues.” *Translation Studies*, Routledge, London, 2014.
2. Berman, Antoine. “Translation and the Trials of the Foreign”. *The Translation Studies Reader*, edited by Lawrence Venuti. Routledge, Abingdon, Oxon, 2021.
3. Koshy, G B. “Translation: An Introduction”. *Rainbow Colours*, edited by Dr. K Sujatha. DC Books, Kottayam. 2011

Course designed by: Mr. Amal Toms

COEV501: INTRODUCTION TO PRINT, MOBILE AND CULTURAL JOURNALISM

Credit: 3 **Total Hours: 54**

Course Outcomes

On successful completion of the course, students shall be able to:

CO1: Outline the popular forms of print, mobile and cultural journalism

CO2: Demonstrate an understanding of the techniques of content production in print, mobile and cultural journalism

CO3: Develop news reports for print, and contents for mobile and cultural journalism

Module 1: Reporting for Print Media **(18 Hours)**

1. Types and Principles of Reporting
2. Investigative Reporting
3. Interpretative Reporting
4. Development Reporting
5. Reporting: Samples and Practice

Module 2: Mobile Journalism (MoJo) **(18 Hours)**

1. Mobile Journalism: Scope, advantages and skills required
2. The workflow to create a story with a smartphone: planning, newsgathering, shooting, scripting, editing, and share, publish or broadcast
3. Mobile apps and tools for reporting
4. Mobile-based storytelling: types, ideas and projects
5. Mobile Photography: Theory and Practice
6. Twitter, Facebook and Social Media: The newsfeed of today
7. Creating handles and using Twitter to generate traffic to stories
8. Google trends
9. Fact check

Module 3: Cultural Journalism **(18 Hours)**

1. Introducing Cultural Journalism
2. Travel Reporting: Samples and Practice
3. Food Reporting: Samples and Practice
4. Entertainment Reporting: Samples and Practice

Textbooks

1. Shaju, P.P. “Reporting Practices”. *Journalistic Practices*. Calicut University, 2021. Pgs. 59 -78.
2. Stovall, James Glen. *Writing for the Mass Media*. 6th Ed. Pearson, 2011.

Web Resources

https://www.mojo-manual.org/understanding-mobile-journalism/

http://www.ired.org/modules/infodoc/files/english/mojo_mobile_journalism_in_the_asian_region.pdf

https://institute.aljazeera.net/sites/default/files/2018/mobile%20journalisn%20english.pdf

https://journalismcourses.org/course/mobilejournalism/

https://gijn.org/2019/01/02/9-types-of-visual-storytelling-on-mobile/

https://gijn.org/2018/06/04/mojo-workin-developing-and-producing-on-a-smart-phone-part-1/

https://gijn.org/2018/06/05/mojo-workin-developing-and-producing-on-a-smart-phone-part-2/

https://momofilmfest.com/the-ultimate-beginners-guide-to-smartphone-filmmaking/

https://www.theverge.com/2017/7/26/16026238/smartphone-video-editing-apps-how-to-tips-iphone-android

https://www.youtube.com/watch?v=dJ2LIW5hOfM&t=49s

https://photographyconcentrate.com/introduction-to-smartphone-photography/

Course designed by: Mr Anish K Joseph

COML501: മാധ്യമപഠനം

Credit: 3 **Total Hours: 54**

Course Outcomes

CO1: ആശയവിനിമയത്തിന്റെ അടിസ്ഥാനതത്വങ്ങൾ മനസ്സിലാക്കുന്നു

CO2: ഓരോ ബഹുജനമാധ്യമത്തിന്റെയും ചരിത്രവും സവിശേഷസ്വഭാവവും സമൂഹജീവിതത്തിൽ അത് സൃഷ്ടിക്കുന്ന പ്രഭാവവും മനസ്സിലാക്കുന്നു

CO3: മാധ്യമപഠനത്തിന്റെ രീതിശാസ്ത്രത്തെക്കുറിച്ച് ധാരണ നേടുന്നു

CO4: ജനാധിപത്യത്തിൽ മാധ്യമങ്ങൾക്കുള്ള നിർണയാവകാശം, പ്രസക്തി എന്നിവ തിരിച്ചറിഞ്ഞ് മാധ്യമപ്രവർത്തനത്തിൽ ആഭിമുഖ്യം ഉണ്ടാകുന്നു

CO5: മാധ്യമങ്ങളുടെയും മാധ്യമപ്രവർത്തനത്തിന്റെയും നവീന സരണികളെപ്പറ്റി അവബോധമുണ്ടാകുകയും അവയെ ഫലപ്രദമായി വിനിയോഗിക്കാൻ പ്രാപ്തിനേടുകയും ചെയ്യുന്നു.

മൊഡ്യൂൾ ഒന്ന്: അച്ചടിമാധ്യമങ്ങൾ, പത്രപ്രവർത്തനം (18 മണിക്കൂർ)

1.1. ആശയവിനിമയത്തിന്റെ അടിസ്ഥാനതത്വങ്ങൾ - പലതരം ആശയവിനിമയങ്ങൾ

1.2. അച്ചടിയുടെ ആവിർഭാവം

1.3. ഇന്ത്യയിലെ പത്രപ്രവർത്തനചരിത്രം (സാമാന്യധാരണ)

1.4. മലയാള പത്രപ്രവർത്തനവും മിഷനറിമാരും

1.5. കേരളീയ നവോത്ഥാനവും പത്രപ്രവർത്തനവും

1.6. വിവിധതരം പത്രപ്രവർത്തനരീതികൾ

1.7. വാർത്ത, എഡിറ്റിംഗ്, ഫീച്ചർ

1.8. പത്രസ്വാതന്ത്ര്യം, പത്രപ്രവർത്തകന് ഉണ്ടായിരിക്കേണ്ട ഗുണങ്ങൾ

1.9. വെബ്പത്രങ്ങൾ

മൊഡ്യൂൾ രണ്ട്: റേഡിയോ, ടെലിവിഷൻ (18 മണിക്കൂർ)

2.1. റേഡിയോ പ്രക്ഷേപണത്തിന്റെ ചരിത്രം

2.2. കേരളത്തിലെ റേഡിയോ പ്രക്ഷേപണത്തിന്റെ ആരംഭം, സ്വകാര്യ റേഡിയോ നിലയങ്ങൾ

2.3. റേഡിയോ നാടകങ്ങൾ, വിദ്യാഭ്യാസ, കാർഷികപരിപാടികൾ

2.4. കലാസാഹിത്യമേഖലകളിൽ റേഡിയോ നൽകിയ സംഭാവന

2.5. ടെലിവിഷന്റെ ആവിർഭാവം കേരളത്തിൽ

2.6. വിനോദ,വിജ്ഞാനവിനിമയങ്ങളിൽ ടെലിവിഷന്റെ പങ്ക്

2.7. ടെലിവിഷനും പരസ്യവും, ടെലിവിഷൻ പരമ്പരകൾ, ടെലിവിഷനും സിനിമയും

മൊഡ്യൂൾ മൂന്ന്: സിനിമ, ഡിജിറ്റൽ മാധ്യമങ്ങൾ (18 മണിക്കൂർ)

3.1. സിനിമയുടെ ആവിർഭാവം (സാമാന്യധാരണ)

3.2. മലയാളസിനിമയുടെ ചരിത്രം (സാമാന്യധാരണ)

3.3. കേരളീയ നവോത്ഥാനവും സിനിമയും

3.4. സിനിമ: ജനപ്രിയകല, ജനപ്രിയസിനിമയിലെ നായകൻ, നായിക; താരസങ്കല്പത്തിൽ വന്ന മാറ്റം

3.5. ഡിജിറ്റൽ സാങ്കേതികതയും സിനിമയും

3.6. നവമാധ്യമങ്ങൾ, വിവരസാങ്കേതികവിദ്യ ആശയവിനിമയത്തിലുണ്ടാക്കിയ വിപ്ലവങ്ങൾ - ബ്ലോഗ്, മൊബൈൽഫോൺ

3.7. സോഷ്യൽ മീഡിയയും സമൂഹവും

Reference

1. മാധ്യമപഠനം, കേരള ഭാഷാ ഇൻസ്റ്റിറ്റ്യൂട്ട്
2. എം വി തോമസ്, മാധ്യമങ്ങളും മലയാളസാഹിത്യവും, ശ്രേഷ്ഠ പബ്ലിക്കേഷൻസ്, 2018.
3. പുതുപ്പള്ളി രാഘവൻ, കേരള പത്രപ്രവർത്തനചരിത്രം, കേരളസാഹിത്യ അക്കാദമി, 1985.
4. ജോയി തിരുമൂലപുരം, വാർത്ത, വാല്യം 3, കേരള ഭാഷാ ഇൻസ്റ്റിറ്റ്യൂട്ട്, 2015.
5. വി രാജഗോപാൽ, ടെലിവിഷൻ ജേണലിസം
6. കെ എസ് രാജശേഖരൻ, ദൃശ്യഭാഷ, കേരള ഭാഷാ ഇൻസ്റ്റിറ്റ്യൂട്ട്, 2015.
7. വിജയകൃഷ്ണൻ, മലയാളസിനിമയുടെ കഥ, പൂർണ പബ്ലിക്കേഷൻസ്, 2017.
8. ഡോ ജിനേഷ് കുമാർ എരമം, നവോത്ഥാനമൂല്യങ്ങളും മലയാളസിനിമയും, കേരള ഭാഷാ ഇൻസ്റ്റിറ്റ്യൂട്ട്, 2018.
9. ഷാജി ജേക്കബ്, ജനപ്രിയസംസ്കാരം ചരിത്രവും സിദ്ധാന്തവും, മാതൃഭൂമി ബുക്സ്, 2009.
10. ജെ. വിളനിലം, ആ ലോകം മുതൽ ഇ ലോകം വരെ, കേരള ഭാഷാ ഇൻസ്റ്റിറ്റ്യൂട്ട്, 2003.
11. സുനിത ടി വി (എഡി), സൈബർ സാഹിത്യം, കറന്റ് ബുക്സ്, 2009.

Course designed by: ഡോ റെസ്സി മറിയം മാത്യു

COML502: ചലച്ചിത്രപഠനം

Credit:3 **Total Hours: 54**

Course Outcomes

CO1: സിനിമയുടെ ചരിത്രത്തെക്കുറിച്ച് ധാരണ നേടുന്നു.

CO2: ചലച്ചിത്രരംഗത്തു പ്രവർത്തിച്ച വ്യക്തികളെയും അവരുടെ സംഭാവനകളെയും വിമർശനാത്മകമായി വിലയിരുത്തുന്നു.

CO3: സിനിമയെ സ്വാധീനിച്ച വിവിധ സാമൂഹിക, സാംസ്കാരിക, രാഷ്ട്രീയ പ്രവണതകൾ വേർതിരിച്ചറിയുന്നു.

CO4: സിനിമയുടെ സാങ്കേതികവശത്തെ മനസിലാക്കുന്നു

CO5: മികച്ച ചലച്ചിത്രമാതൃകകൾ പരിചയപ്പെടുന്നു. ഈ ചിത്രങ്ങളെ വിശകലനം ചെയ്യാൻ പ്രാപ്തി നേടുന്നു.

മൊഡ്യൂൾ ഒന്ന് : ലോകസിനിമ (18 മണിക്കൂർ)

1.1. സിനിമയുടെ ശാസ്ത്രീയതത്വം - ഫ്രെയിം, ഷോട്ട്, സീൻ, സീക്വൻസ്

1.2. മൊണ്ടാഷ്

1.3. സിനിമയിൽ പ്രതീകങ്ങൾക്കുള്ള പ്രാധാന്യം

1.4. സിനിമയുടെ ആവിർഭാവം – ലൂമിയർ സഹോദരന്മാർ, ജോർജ് മെലീസ്, എഡ്വിൻ എസ് പോർട്ടർ, ഗ്രിഫിത്ത്, ഐസൻസ്റ്റീൻ

1.5. ചാപ്ലിൻ സിനിമ

1.6. പ്രസ്ഥാനപഠനം: ഇറ്റാലിയൻ നിയോറിയലിസം

1.7. പ്രസ്ഥാനപഠനം: ഫ്രെഞ്ച് ന്യൂവേവ്

1.8. പുതിയ പ്രവണതകൾ

1.9. ചലച്ചിത്രപഠനം: ബൈസിക്കിൾ തീവ്സ്

മൊഡ്യൂൾ രണ്ട് : ഇന്ത്യൻ സിനിമ (18 മണിക്കൂർ)

2.1. ഇന്ത്യൻ സിനിമയുടെ ചരിത്രം (സാമാന്യധാരണ)

2.2. പുരാണേതിഹാസവും സിനിമയും

2.3. സ്വാതന്ത്ര്യാനന്തരസിനിമ

2.4. സത്യജിത്ത് റായ്

2.5. ഋത്വിക് ഘട്ടക്, മൃണാൾ സെൻ

2.6. ശ്യാം ബനഗൽ

2.7. അപർണാ സെൻ

2.8. ചലച്ചിത്രപഠനം: പഥേർ പാഞ്ചലി

2.9. ചലച്ചിത്രപഠനം: സുബർണ്ണരേഖ

മൊഡ്യൂൾ മൂന്ന് : മലയാളസിനിമ (18 മണിക്കൂർ)

3.1. മലയാളസിനിമയുടെ ആരംഭം – വിഗതകുമാരൻ, ബാലൻ - സ്റ്റുഡിയോ വ്യവസ്ഥ

3.2. സാഹിത്യത്തിന്റെ സ്വാധീനം

3.3. സമാന്തരസിനിമ: അടൂർ ഗോപാലകൃഷ്ണൻ, ജോൺ എബ്രഹാം

3.4. മധ്യവർത്തി സിനിമ: കെ ജി ജോർജ്, ഭരതൻ, പദ്മരാജൻ

3.5. ടെലിവിഷനും സിനിമയും

3.6. സമകാലിക മലയാളസിനിമ – പ്രവണതകൾ

3.7. ചലച്ചിത്രപഠനം: അനന്തരം

3.8. ചലച്ചിത്രപഠനം: യവനിക

3.9. ചലച്ചിത്രപഠനം: കുമ്പളങ്ങി നൈറ്റ്സ്

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Course designed by: ശ്രീ അജീഷ് തോമസ്

COML503: മലയാളസിനിമ

Credit:3 **Total Hours: 54**

Course Outcomes

CO1: മലയാളസിനിമയുടെ ഉത്ഭവം, വികാസപരിണാമങ്ങൾ എന്നിവയെക്കുറിച്ച് മനസിലാക്കുന്നു.

CO2: മലയാളസിനിമയിലെ വിവിധ ചലച്ചിത്രപ്രസ്ഥാനങ്ങളെയും ചലച്ചിത്ര പ്രതിഭകളെയും കുറിച്ചു ധാരണ നേടുന്നു

CO3: മലയാളസിനിമയെ സ്വാധീനിച്ച വിവിധ സാമൂഹിക, സാംസ്കാരിക, രാഷ്ട്രീയ പ്രവണതകൾ വേർതിരിച്ചറിയുന്നു.

CO4: മലയാളത്തിലെ മികച്ച ചലച്ചിത്രമാതൃകകൾ പരിചയപ്പെടുന്നു. ഈ ചിത്രങ്ങളെ വിശകലനം ചെയ്യാൻ പ്രാപ്തി നേടുന്നു.

CO5: ചലച്ചിത്രമേളകളുടെ പ്രസക്തി വിശകലനം ചെയ്യുന്നു.

മൊഡ്യൂൾ ഒന്ന്: ആദ്യകാല മലയാളസിനിമ (16 മണിക്കൂർ)

1.1. നിശബ്ദസിനിമാകാലഘട്ടം - വിഗതകുമാരൻ, മാർത്താണ്ഡവർമ്മ

1.2. ശബ്ദസിനിമ – ബാലൻ, കൃത്രിമകഥകളുടെയും തമിഴ്, ഹിന്ദി ചലച്ചിത്രങ്ങളുടെയും . സ്വാധീനം

1.3. സ്റ്റുഡിയോ വ്യവസ്ഥ

1.4. നിയോറിയലിസം – ന്യൂസ് പേപ്പർ ബോയ്

1.5. ക്ലാസിക്, ജനപ്രിയസാഹിത്യകൃതികളുടെ അനുവർത്തനങ്ങൾ

1.6. കെ എസ് സേതുമാധവൻ, രാമു കാര്യാട്ട്, പി എൻ മേനോൻ എന്നിവരുടെ സിനിമകൾ

1.7. ചലച്ചിത്രപഠനം: നീലക്കുയിൽ

1.8. ചലച്ചിത്രപഠനം: ചെമ്മീൻ

മൊഡ്യൂൾ രണ്ട്: സമാന്തര, മധ്യവർത്തി സിനിമകൾ (18 മണിക്കൂർ)

2.1. ഫിലിം സൊസൈറ്റി പ്രസ്ഥാനം – ചിത്രലേഖ

2.2. നവതരംഗസിനിമകൾ - സവിശേഷതകൾ

2.3. അടൂർ ഗോപാലകൃഷ്ണൻ

2.4. ജോൺ എബ്രഹാം, ജി അരവിന്ദൻ

2.5. മധ്യവർത്തി സിനിമകൾ - സവിശേഷതകൾ

2.6. ഭരതൻ, പദ്മരാജൻ

2.7. കെ ജി ജോർജ്

2.8. ചലച്ചിത്രപഠനം: അനന്തരം

2.9. ചലച്ചിത്രപഠനം: ഉവാനത്തുമ്പികൾ

മൊഡ്യൂൾ മൂന്ന്: ജനപ്രിയ സിനിമ (20 മണിക്കൂർ)

3.1. ജനപ്രിയ സിനിമ – സവിശേഷതകൾ

3.2. സത്യൻ അന്തിക്കാട്, പ്രിയദർശൻ

3.3. താരാധിപത്യം

3.4. ടെലിവിഷന്റെയും കേബിൾ ചാനലുകളുടെയും സ്വാധീനം

3.5. ന്യൂ ജനറേഷൻ സിനിമ – സവിശേഷതകൾ - ആഷിക് അബു, രാജേഷ് പിള്ള

3.6. സമാന്തരസിനിമയുടെ പുതിയ മുഖം – സനൽ കുമാർ ശശിധരൻ, ഡോൺ പാലത്തറ

3.7. ഡിജിറ്റൽ കാലം, ഒ ടി ടി സിനിമകൾ, വെബ് സീരീസുകൾ

3.8. സമകാലിക മലയാളസിനിമ – ദിലീഷ് പോത്തൻ, ലിജോ ജോസ് പെല്ലിശ്ശേരി

3.9. ചലച്ചിത്ര അക്കാദമി, ഐ എഫ് എഫ് കെ

3.10. ചലച്ചിത്രപഠനം : മണിച്ചിത്രത്താഴ്

3.11. ചലച്ചിത്രപഠനം : തൊണ്ടിമുതലും ദൃക്സാക്ഷിയും

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8. മധു ഇറവങ്കര, മലയാളസിനിമയും സാഹിത്യവും, ഡി സി ബുക്സ്, കോട്ടയം, 1999
9. പി എസ് രാധാകൃഷ്ണൻ, ദൃശ്യഹർഷത്തിന്റെ സമയരേഖകൾ, എസ് പി സി എസ്, കോട്ടയം, 2013
10. പി എസ് രാധാകൃഷ്ണൻ, ചരിത്രവും ചലച്ചിത്രവും: ദേശ്യഭാവനയുടെ ഹർഷമൂല്യങ്ങൾ, എസ് പി സി എസ്, കോട്ടയം, 2010
11. രാമചന്ദ്രൻ ജി പി, മലയാളസിനിമ: ദേശം, ഭാഷ, സംസ്കാരം, കേരള ഭാഷാ ഇൻസ്റ്റിറ്റ്യൂട്ട് തിരുവനന്തപുരം, 2006
12. വിജയകൃഷ്ണൻ, മലയാളസിനിമയുടെ കഥ, മാതൃഭൂമി ബുക്സ്, കോഴിക്കോട്, 2007
13. വിജയകൃഷ്ണൻ, മറക്കാനാവാത്ത മലയാളസിനിമകൾ, ചിന്ത പബ്ലിക്കേഷൻസ് തിരുവനന്തപുരം, 2008
14. സി എസ് വെങ്കിടേശ്വരൻ, മലയാളസിനിമാപഠനങ്ങൾ, ഡി സി ബുക്സ് കോട്ടയം, 2011
15. കെ എൻഷാജികുമാർ, മലയാളത്തിന്റെ ക്ലാസിക് സിനിമകൾ, ഒലീവ് പബ്ലിക്കേഷൻസ് കോഴിക്കോട്, 2016
16. എൻ പി സജീഷ്, തിരമലയാളത്തിന്റെ അവസ്ഥാന്തരങ്ങൾ, കേരള ഭാഷാ ഇൻസ്റ്റിറ്റ്യൂട്ട് തിരുവനന്തപുരം, 2007

Course designed by: ശ്രീ അജീഷ് തോമസ്

COEC501: POPULATION STUDIES

Credit: 3 **Total Hours: 54**

Course Outcomes

At the end of the course the students will be able to

CO1: Explain the idea of demography, analyze the basic concepts like fertility and mortality and explain changes in population statistics with emphasis on the demographic dividend.

CO2: Analyze socio-economic dimensions of population growth and demonstrate the significance of investment in human capital.

CO3: Explain the concept of migration and urbanization and assess the problems associated with India and Kerala.

CO4: Evaluate the importance of population in economic development and the various theories that explain the growth of population.

CO5: Analyze economic consequences of demographic change with emphasis on analytical techniques drawn from demography as well as economics.

Module 1: Introduction to Population Studies and Vital Statistics (14 Hours)

Demography: Nature and Scope- Vital Statistics-Factors affecting Mortality, missing women and effects-Population pyramids- Demographic window and Dividends - Demographic Transition in India and Kerala

Module 2: Approaches to Population analysis (22 Hours)

Socio- economic dimensions of population growth-Malthusian analyses-optimum population-Approaches to population analysis-Gender gap in development- Investment in human capital

Module 3: Migration and Urbanisation (18 Hours)

Migration – types, measurement–push and pull factors and effects - Migration patterns in India- Harris Todaro model-Urbanisation in India -International migration- Brain drain - Interstate labour migration in India-Gulf migration and welfare effects in Kerala- Migrant workers in Kerala

Textbooks

1. Bouge, D.J., Principles of Demography, John Wiley, New York. 1971
2. B.D. Misra, An Introduction to the Study of Population, South Asian Publishers, 1980
3. S. Nagarwal, India’s Population Problem, Tat McGraw Hill, 1985.

Reference

1. Bhende Asha A. And Tara Kanitkar, Population of Population Studies, Himalaya Publishing House.
2. Srinivasan, K. And A. Shariff, India: Towards Population and Demographic goals, Oxford University Press, New Delhi. 1998
3. Bose, A., India's Basic Demographic Statistics, B. Publishing Corporation, New Delhi. 1996
4. Government of India, Census of Indian and Related Monographs and Reports

Course designed by: Pavanam Thomas

COCM501: FUNDAMENTALS OF ACCOUNTING

Credit: 3 **Total Hours: 54**

Course Outcomes

Upon completion of this course, the students will be able to:

CO1: Understand the basics of accounting and the key terms used

CO2: Apply the rules of debit and credit properly

CO3: Prepare ledger accounts

CO4: Able to prepare trial balance

CO5: Prepare the final accounts of sole trader by applying the rules

Module 1: Introduction to Accounting (16 Hours)

Accounting – Meaning, Objectives, Advantages and Limitations - Accountancy - Branches of Accounting- Users of accounting information and their needs- Systems of Accounting : Single Entry and Double Entry- Basic Accounting Terms – Business Transaction, Capital, Drawings, Liabilities ,Assets, Classification of assets and liabilities- Expenditure (Capital and Revenue), Expense, Income, Profit, Gain, Loss, Purchase, Sales, Goods, Stock, Debtor, Creditor, Discount (Trade discount and Cash Discount)- Accounting concepts and conventions.

Module 2: Journaling & Posting (10 Hours)

Functions of accounting – Book keeping and Accounting- Accounting cycle- Journal- Types of Accounts- Rules of debit and credit – Journalizing- Preparation of journal entries using British Approach and American Approach- Ledger – Posting –Preparation of ledger- Totaling and balancing- concept of debit and credit balances.

Module 3: Special Journals (10 Hours)

Special Journals: meaning –Advantages of special journals –Cash Book – Preparation of Single column and Triple columns cash books- Contra item – Preparation of Petty cash book- Cash Float –Imprest system.

Module 4: Trial Balance (10 Hours)

Trail Balance: Meaning – Objectives- Methods of preparation: Balance method and Total method- Preparation of Trail balance. Differences between Trial balance and Balance sheet.

Module 5: Final Accounts (8 Hours)

Final Accounts- Income statement – Position statement – Preparation of: Trading/c, Profit and Loss Account and Balance Sheet. - Grouping and Marshaling of items –Preparation of final accounts with the Adjustments of Closing Stock, Prepaid, Outstanding, and Depreciation

Reference

1. P C Tulsian, – Fundamentals of Accounting - Tata McGraw Hills Education Pvt Ltd, New Delhi, 2020
2. Financial Accounting - A. Mukharjee & M. Hanif, Tata McGraw Hills Education Pvt Ltd.
3. Bhushan Kumar Goyal - Fundamentals of Financial Accounting- TAXMANN -1st - 2017

Course designed by: Dr Binu Mathew Job

COBT501: BIOTECHNOLOGY: CONCEPTS AND APPLICATIONS

Credit: 3 **Total Hours: 54**

Course outcomes

CO1: Outline the basics concept of biotechnology.

CO2: Explain the fundamentals of food biotechnology and its application in fermentation and food processing.

CO3: Describe the basic principles of plant, animal biotechnology and outline transgenic technology and ethical issues related to it.

CO4: Illustrate the principles of medical biotechnology, its diagnostic and therapeutic applications.

CO5: Outline the aspect of environmental biotechnology and its role in pollution control and waste management.

Module 1: Introduction to Biotechnology (3 Hours)

Biotechnology: An overview, Tools in biotechnology, Biotechnology and the developing world, scope and importance of Biotechnology

Module 2: Food Biotechnology (9 Hours)

Biotechnology in food industry: Basic principle of Fermentation, Production of fermented food products- Bread, wines, vinegar and pickles. Fermented milk products and traditional Indian foods. High value food products, single cell proteins.

Module 3: Plant Biotechnology (12 Hours)

Introduction to plant tissue culture and its applications, Transgenic plants (A brief introduction), Genetic engineering and crop improvement, herbicide resistance, insect resistance, virus resistance, plants as bioreactors. Future perspectives and ecological impact of transgenic plants.

Module 4: Animal Biotechnology (10 Hours)

Introduction to animal cell culture, Application of cell culture technology in production of human and animal vaccines, pharmaceutical proteins, In-vitro fertilization and embryo transfer in humans and livestock, Animal Cloning, Transgenic animals – Merits and demerits, Ethical issues in animal biotechnology

Module 5: Medical Biotechnology (8 Hours)

Biotechnology in medicine, Vaccines, Diagnostic, Forensic, Gene therapy techniques and applications, Stem cell therapy, Nano Medicine and Drug Delivery Cell, Tissue Engineering, DNA fingerprinting and paternity test.

Module 6: Environmental Biotechnology (12 Hours)

Environmental Biotechnology: (A brief account), Role of biotechnology in pollution control, Sewage treatment, Biosensors - types and applications in environmental pollution detection and monitoring, Energy management, Biofuel production as an alternative energy resource, Bioremediation, Restoration of degraded lands and Conservation of biodiversity. Current status of biotechnology in environment protection and its future, GMO and environmental risk.

Textbooks

1. M.K Razdan, Introduction to Plant Tissue Culture, Science Publishers Inc 2nd edition, 2003, ISBN: 1578082374.
2. H.S Chawla, Introduction to Plant Biotechnology. 3rd edition, Oxford and IBH Publishing CO.Pvt.Ltd.,2009
3. R. Sasidhara, Animal Biotechnology, MJP publishers, 2006
4. R. Ian Freshney: Culture of Animal Cells: A Manual of basic techniques and specialized applications: 7th edition: Wiley-Blackwell: 2016
5. B.D Singh, Biotechnology: Expanding Horizon. Kalyani Publications.2007.
6. J.H Mantell, J. A. Matthews, McKee RA. Principles of Plant Biotechnology: An Introduction to Genetic Engineering in Plants Oxford: Blackwell Scientific Publications, 1985.
7. W.S Frazier, D.C Weshoff, Food Microbiology, 4th Edn., McGraw Hill Book Co., New York, 1988.

Reference

1. Keshavachandran R & Peter KV. Plant Biotechnology: Methods in Tissue Culture and Gene Transfer. Orient & Longman (Universal Press),2008.
2. John Hammond, Peter McGarvey, Vidaldi Yusibov, Plant Biotechnology: New Products and Applications, Springer-Verlag Berlin Heidelberg 2000
3. Ed. John R.W Masters Animal cell culture- Practical approach 3rd edition, Oxford university press-2000
4. In Vitro cultivation of Animal cells. Elsevier India PVT LTD-17-A/1 Main Ring Road, New Delhi-110024
5. Christopher. F Forster, D.A. John Wase , Environmental Biotechnology, Ellis Harwood, 1987.
6. Gabriel Bitton, Waste water Microbiology, John Wiley and Sons, Wiley series in Ecological and Applied Microbiology, 2005.

7. N Shakuntala Manay, M. Shadakshara Swamy, Food-Facts and Principles, 2 Ed, New Age International Pub,2008.

Course designed by: Dr. Reshma John

COMB501: MICROBIOLOGY IN DAILY LIFE

Credit: 3 **Total Hours: 54**

Course outcomes:

CO1: Discuss the role of microbes in food production.

CO2: Develop knowledge on various microbial plant diseases, and discuss the potential of different microorganisms as biofertilizers.

CO3: Describe the role of microbes in biofuel production.

CO4: Extend the knowledge on bacteriological examination of water and water borne diseases.

CO5: Summarize on biology and spread of infectious disease**.**

Module 1: Food and Dairy Microbiology (18 Hours)

Production of beverages - beer and wine, Production of organic acid- vinegar, Production of mushroom, Production of Single Cell Protein – Spirullina, Fermented Dairy products - Dahi, Cheese and Yoghurt, Food Borne illness- Botulism and Salmonellosis.

Module 2: Agricultural Microbiology (8 Hours)

Bio fertilizers: Production of *Rhizobium* and *Azotobacter*, Bio pesticides **–** *Bacillus thuringiensis*, Microbial diseases of plants: Bacterial leaf blight of rice, Downy mildew of grapes and Tobacco Mosaic Disease.

Module 3: Industrial Microbiology (8 Hours)

Production of biofuel – Methane, Fermentative production of ethanol, Production of antibiotic – Penicillin.

Module 4: Water Microbiology (12 Hours)

Bacteriological examination of water **–** MPN, SPC and membrane filter**,** waterborne diseases – Cholera, Typhoid, Shigella dysentery and Hepatitis A.

Module 5: Medical Microbiology (8 Hours)

Infections - Classification of infections, Sources of infections, Method of transmission of infection, Types of infectious disease

Reference

1. Adams, M. R. and Moss, M. O. Food Microbiology, 3rd Edition. RSC Publishers, 2008.
2. Jay, J. M., Loessner, M. J. and Golden, D. A. Modern Food Microbiology. Springer Science & Business Media, 2005.
3. Frazier, W. C. and Westhoff, D. C. Food Microbiology. Tata McGraw HillsPublishing Company Limited, 2004.
4. Doyle, M. P., Beuchat, L. R. and Montville, T. J. Food Microbiology:

Fundamentals and Frontiers. 2nd Edition. ASM Press, Washington, D.C, 2001.

5. Agrios, G. Plant Pathology. 5th Edition, Academic Press, 2005.
6. Ahmad, I., Ahmad, F. and Pichtel, J. Microbes and Microbial Technology: Agricultural and Environmental Applications. Springer, New York, 2011.
7. Atlas, R. N. and Bartha, R. 1998. Microbial Ecology: Fundamentals & Applications. 4thEdition. Benjamin & Cummings Science Publishing, California.
8. Enfors, S. O. and Häggström, L. Bioprocess Technology: Fundamentals and Applications. Royal Institute of technology, Stockholm, Sweden, 2000.
9. Whitaker, A., Stanbury, P. F. and Hall, S. J. Principles of FermentationTechniques. Elsevier, 2009.
10. Okafor, N. Modern Industrial Microbiology and Biotechnology. CRC Press, 2007.
11. Barthwal, R. R. Environmental Impact Assessment. New Age International Publishers, 2012.
12. Glasson, J., Therivel, R. and Chadwick. A. Introduction to Environmental Impact Assessment. 4th Edition. Routledge, 2012.
13. Odum, E. P. and Barrett, G. W. Fundamentals of Ecology. 5th Edition. Thomson Brooks/Cole, Belmont, CA, 2005.
14. Hurst, C. J., Crawford, R. L., Garland, J. L., Lipson, D. A. and Mills, A. L. Manualof Environmental Microbiology. ASM Press, 2007.
15. Steele, J. C. H. Emerging Infections and their causative agents. Clinics in laboratory medicine, **24**(3): 559-848, 2004.
16. Robinson, R. K. Dairy Microbiology. Volume II and I. Elsevier Applied Science, London, 1990.
17. Mathews G. Food and Dairy Microbiology. Ed - Tech Press, 2020.
18. Eckenfelder, W. W., Ford D. L. and Englande A. J. Industrial Water Quality. 4th Edition. McGraw Hill, 2008.
19. Metcalf and Eddy Inc., Tchobanoglous, G., Burton, F. and Stensel H. D. Wastewater Engineering: Treatment, Disposal Reuse. 3rd Edition. McGraw-Hill Education, 2017.
20. Metcalf and Eddy Inc., Tchobanoglous, G., Stensel H. D. and Tsuchihashi R. Wastewater Engineering: Treatment and Resource Recovery. McGraw-Hill Education, 2013.
21. Osei G. Handbook of Dairy Microbiology. Agri Horti Press, 2017.
22. Ozer B. and Akdemir-Evrendilek G. Dairy Microbiology and Biochemistry - Recent Developments. CRC Press, 2014.

COCS501: INTERNET CONCEPTS AND WEB DESIGNING

Credit: 3 **Total Hours: 54**

Course Outcomes

CO1: Understanding internet concepts.

CO2: Develop webpage using html.

CO3: Understanding use of CSS in html webpage so that students can style webpages.

CO4: Build interactive webpages using JavaScript**.**

CO5: Develop website using web designing software, Dreamweaver and learn how to implement theories in to practice.

Module 1: Internet **(8 Hours)**

Introduction of Internet, Website, Web pages, web browser, web server, domain, URL, search engine for internet, Front End, Back End, Client and Server Scripting Languages, Wepage Editors: Notepad, Notepad ++, Sublime Text Editor, VS code editor.

Module 2: HTML **(14 Hours)**

Introduction to HTML, Basic formatting tags: heading, paragraph, underline break, bold, italic, underline, superscript, subscript, font and image. Different attributes like align, color, bgcolor, font face, border, size. Navigation Links using anchor tag: internal, external, mail and image links. Lists: ordered, unordered and definition, Table tag, HTML Form controls: form, text, password, text area, button, checkbox, radio button, select box, hidden controls, Frameset and frames, Projects using HTML.

Module 3: CSS **(12 Hours)**

Introduction to CSS, Types of CSS, CSS Selectors, CSS Properties: Background properties, List properties, Text Properties, Positioning Properties, CSS Lists, CSS Tables, Projects using CSS.

Module 4: JavaScript **(10 Hours)**

Introduction, what is JavaScript, Data Types, Variable, Global Variable, Comment, decisions and loops, control structure, Understanding Events, Simple JavaScript Examples

Module 5: Dreamweaver **(10 Hours)**

Exploring the Dreamweaver, workspace, setting up a website and its files, working with webpage elements-text, graphics, tables, hyperlinks, audio/video, frames and forms.

Textbooks

1. Raj Kamal, Internet & Web technologies, Tata McGraw Hill
2. Jon Duckett, Web Programming with HTML, XHTML, CSS, Wrox Beginning.

3. Dreamweaver CS6, Dream Tech Press, Kogent Learning Solutions Inc.
4. Mastering HTML, CSS &Javascript Web Publishing (English, Paperback, Lemay Colburn Kyrnin)
5. HTML & CSS: The Complete Reference, Fifth Edition, Thomas Powell.

Reference

1. Html 4.0 In Simple Steps, Kogent Solutions, Wiley India
2. Ed Tittel & Mary Burmeister, Html 4 For Dummies, Wiley References
3. Harley Hahn, “Internet Complete Reference”

Course designed by: Greeshma Muraly

COPE501: PHYSICAL, HEALTH AND LIFE SKILLS EDUCATION

Credit: 3 **Total Hours: 54**

Course Outcomes:

On successful completion of the course the students will be able to:

CO1: Have a better clarity in understanding the concepts of Health, Physical Fitness and also the life skills that can be achieved through active participation in such programmes.

CO2: Recall the terms and principles related to Health management, Fitness Management, scientific basis of nutritional requirement and how to go about to have a healthy living.

CO3: Have the skills to analyse and establish the relationship between what they are undergoing at present with regard to their Health, Physical Fitness, Nutritional status, life skills etc. and what has to be done to achieve better standards with the help of scientific basis.

CO4: Evaluate themselves their Health-related Physical fitness Standards, the life skill that can be learned, the nutritional requirements and what has to be done to make positive changes in a most scientific manner.

CO5: Formulate new ideas in creating better programmes with scientific basis to improve their Health-Related physical fitness, make changes in the nutritional standards and also in their physical fitness regime.

Module 1: Physical Education & Physical Fitness (12 Hours)

- Concept of Physical Education
- Meaning, Definition, Aims and Objective of Physical Education,
- Need and Importance of Physical Education,
- Physical Education & its relevance in inter disciplinary context.
- Physical Fitness Components,

Types of Fitness

- Health related Physical Fitness
- Skill/Performance related Physical Fitness.
- Activities for the development of physical fitness components.

Module 2: Health concepts of Physical Education (12 Hours)

- Definition and meaning of Health
- Dimensions and determinants of Health
- Physical activity and Health benefits
- Effects of Exercise on Body Systems

- Circulatory, Respiratory, Digestive, Muscular and Skeletal Systems

Module 3: Nutrition and Health (9 Hours)

- Concept of Food and Nutrition
- Classification of nutrients
  - Carbohydrate, protein, fat, minerals and vitamins
- Balanced diet, Malnutrition, Dietary guidelines for healthy eating
- Determining Calorie intake and expenditure
- Obesity, Causes and preventive measures- Role of diet and exercise.

Module 4: Safety Education and Health promotion (9 Hours)

- Principles of accident prevention
- Health and safety in daily life
- First Aid and Emergency care
- Common injuries and their management
  - Sprain, Strain, Fracture, Dislocation, Cuts, Wound and Drowning
- Modern life style and Hypo -kinetic Diseases -causes, prevention and management.

Module 5: Sports and Life Skills (12 Hours)

- Sports and character building – emotional adjustment and wellbeing.
- Drug abuse among youth- Doping in sports- Preventive measures and remediation.
- Yoga- meaning, definition, need and importance in modern society.
- Body types and Postural deformities.
  - Ectomorph, Endomorph and Mesomorph
  - Kyphosis, Lordosis, Scoliosis, Knock Knee, Bow legs, Flat foot.
- Types of Tournaments. - Knock Out & League.
- Values in sports.

Reference

1. AAPHERD, Health related physical fitness test manual, Published by Association drive Reston Virginia:1980.
2. ACSM fitness book, Leisure Press Campaign, Illinoisis, Leisure Press, Canada: 1996. http://www.pitt.edu/gsphhome
3. Alice. C, Yoga for Sports. Chicago: CB :2002.
4. B.C. Rai, Health education and hygiene, published by Prakashan Kendra, Lucknow.
5. Birch, MacLaren, George, Sports and exercise physiology-instant notes, UK:BIOS scientific Publishers : 2005.
6. Corbin, Charles B et al, Concepts of fitness and wellness, Boston; McGraw Hill:2004

7. Fahey, Insel, Roth, Fit and well, 6th Ed. Boston; McGraw Hill Co: 2004.
8. Fashey et al, Fit and well, New York; McGraw Hill Inc: 2005.
9. Frank, AM, Sports and Education, CA; ABC-CLIO: 2003.
10. Greenberg, Dintiman, Oakes, Physical fitness and wellness, 3rd Ed. IL; Human Kinetics:2004.
11. Iyengar, BKS, Light on yoga, Yoga Dipika, London; UNWIN Paperbacks: 1980.
12. Jackson Sharman, Modern Principles of Physical Education, New York; A.A. Barnes and Co.
13. Kamlesh, ML, Physical education facts and foundation, New Delhi; P.B Publication: 1998.
14. Lussier and Kimball, Sports Management-Principles, application, skill development, Ohio; Thomson South Western: 2004.
15. Michael, H, Sports injuries recognition and management, 3rd Ed.; Oxford University press: 2001.
16. Norman Bezzant, Help! First aid for everyday emergencies; Jaico Publishing House, Bombay.
17. Puri, K Chandra, Health and Physical Education, New Delhi; Surjeet Publications: 2006.
18. Rob, James et al, Complete A-Z Physical Education Handbook, 2nd Ed; Hodder and Stoughton England: 2003.
19. Tiwari, OP, Asanas why and how? Lonavala: Kaivalayadham: 2002.
20. Uppal, AK, Principles of sports training, New Delhi; Friends Publication: 2001.
21. Ziegler, EF, An Introduction to sports and Physical Education Philosophy, Delhi; Sp. Educational Technology: 2007.
22. Goel, RG and Goel, Gaurav, Encyclopaedia of sports and games, 12th Ed.; Tarang paperbacks-Vikas publishing house PVT LTD, New Delhi: 1995.

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