VIMALA COLLEGE (AUTONOMOUS)

(NAAC Re-accredited (3ʳᵈ Cycle): A Grade, CGPA-3.50)

(Affiliated to University of Calicut)

DEGREE OF

BACHELOR OF VOCATION (B.Voc.)

IN

WEB TECHNOLOGY

UNDER THE

FACULTY OF COMPUTER SCIENCE

SYLLABUS

(FOR THE STUDENTS ADMITTED FROM THE ACADEMIC YEAR 2021 – 22 ONWARDS)

VIMALA COLLEGE

ENGINEERING COLLEGE P O, THRISSUR

KERALA-680009

INDIA

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1. TITLE

This programme shall be called **Bachelor of Vocation in Web Technology** under Choice Based Credit and Semester System for Undergraduate (UG) Curriculum -2021.

2. PROGRAMME OBJECTIVES

The basic objective of the Programme is to open a channel of admission for vocational courses for students, who have done the 10+2 and are interested in taking computing/IT as a career.

The B.Voc courses are designed with the following objectives,

- To provide judicious mix of skills relating to a profession and appropriate content of General Education.
- To ensure that the students have adequate knowledge and skills, so that they are work ready at each exit point of the programme.
- To provide flexibility to the students by means of pre-defined entry and multiple exit points.
- To integrate NSQF within the undergraduate level of higher education in order to enhance employability of the graduates and meet industry requirements. Such graduates apart from meeting the needs of local and national industry are also expected to be equipped to become part of the global workforce.
- To provide vertical mobility to students coming out of 10+2 with vocational subjects.

3. PROGRAMME OUTCOME

Graduates of the programme should be able to

- Skill to innovate, create and exhibit content in a presentable and appealing fashion.
- Good understanding of professional, ethical, security and social issues and responsibilities.
- Capability to engage in continuing professional development and life-long learning.
- Capability to adapt to the evolution of technology and cope with limited resources.
- Apply the knowledge acquired effectively to generate solutions to real-world problems.
- Manage time and resources efficiently and prioritize tasks to complete within the requested time frame.
- Collaborate as a team and delegate tasks to achieve a specified outcome.
- Confidence to motivate oneself and hone skills based on the knowledge gained

4. PROGRAMME SPECIFIC OUTCOMES

- Gain general awareness of popular web tools, technologies and their applications for higher technical education and to acquire quantitative, analytical and entrepreneurial skills.
- Create digital art for commercial and advertising purposes.
- Design web pages and write back-end code based on requirements
- Develop websites and evaluate application technologies to improve website performance

5. GENERAL PROGRAMME STRUCTURE

Duration:
The duration of the B.VocProgramme shall be 6 semesters distributed over a period of 3 academic years. The odd semesters (1, 3, 5) shall be from June to October and the even Semesters (2, 4, 6) shall be from November to March. Each semester shall have 90 working days inclusive of all examination days distributed over a minimum of 18 weeks of 5 working days consisting of six hours. Total credits in a semester are 30 (equivalent to 450 hours).For final semester internship and project and Term paper, total credit is 30 with duration of 900 hrs.

Course:
The B.Voc Programme is designed to bridge the potential skill gap identified. The curriculumin each of the years of the programme would be a suitable mix of General EducationComponents,Skill Development Components and Ability Enhancement Courses/AuditCourses.

The UG programme shall include General Education Component (Code GEC), Core courses (Code SDC) and Audit courses (Code E).

General Education Components:

- The general education component provides emphasis to Communication skills, Presentation skills, Health and Safety, Industrial Psychology, Environmental awareness, Entrepreneurship development and other relevant subjects in the field.
- An option for additional language should be provided which enhances the employability outside the state.
- General Education Components should not exceed 40% ofthe curriculum

The minimum number of courses required for completion of the Diploma in web designing is 12, Advanced Diploma in Website Development is 24 and B.Voc Web Technology Programme is 36. Total credits in a semester: 30 (equivalent to 450 hours).

A new set of General Education Components shall be developed for B.Voc Programme as Group No. 6. The courses in the group are as follows:

1. A11 - Basic Mathematics and General Awareness
2. A12 - Professional Business Skills
3. A13 - Entrepreneurship Development
4. A14 - Public Health, Sanitation and Safety

Table below shows the list of general courses.

No	Semester	Course No	Course Code	Course Name
1		1.1	A01	ENG1A01
2		1.2	A02	ENG1A02
3	1	1.3	A07(3)	MAL1A07(3) HIN 1A07 (3) ARA1A07(3)
4		2.1	A03	ENG2A03
5		2.2	A04	ENG2A04
6	2	2.3	A08(3)	MAL2A08 (3) HIN 2A08 (3) ARA2A08(3)
7		3.1	A11	Group No. 1-5 of CBCSS UG 2019
8	3	3.2	A12	
9		4.1	A13	
10	4	4.2	A14	Group No. 6 of CBCSS VUG 2021

Ability enhancement courses/ Audit courses

These are courses which are mandatory for a programme but not counted for the calculation of SGPA or CGPA. There shall be one Audit course each in the first four semesters. These courses are not meant for class room study. The students can attain only pass (Grade P) for these courses. At the end of each semester there shall be an examination conducted by the college. The students can also attain these credits through online courses like SWAYAM, MOOC etc. (optional). The list of passed students must be sent to the University from the colleges at least before the fifth semester examination. The list of courses in each semester with credits is given below.

Course with credit	Semester
Environment Studies – 4	1
Disaster Management – 4	2
*Human Rights/Intellectual Property Rights/ Consumer Protection - 4	3
*Gender Studies/Gerontology- 4	4

* Colleges can opt any one of the courses.

Credit System
a. A student is required to acquire a total of **180** credits for the completion of the programme which shall be counted for SGPA and CGPA.
b. Each semester has a credit of 30. Out of which the general education components shall not exceed 40% of the total credit of each semester.
c. The maximum credit for a course shall not exceed 5 and the minimum credit for a course is 2.
d. Each subject shall have a certain number of credits assigned to it depending upon the academic load and the nature and importance of the subject.
e. The credit associated with each subject will be shown in the prescribed scheme and

syllabi. Each course shall have an integer number of credits, which reflects its weightage.

f. **Audit courses** shall have 4 credits per course and a total of 16 credits in the entire programme. The credits of audit courses or extra credits are not counted for SGPA or CGPA.

g. **Extra Credits:** The maximum credit acquired under extra credit shall be 4. If more extra credit activities are done by a student that may be mentioned in the grade card. Extra credits are mandatory for the programme. Extra credits will be awarded to students who participate in activities like NCC, NSS, and Swatch Bharath. Those students who could not join in any of the above activities have to undergo Calicut University Social Service Programme (CUSSP). Extra credits are not counted for SGPA or CGPA.

h. **Credit Assessment**

    - One Credit would mean equivalent of 15 periods of 60 minutes each, for theory, practical/ workshops / IT and tutorials;
    - For internship/field work, the credit weightage for equivalent hours shall be 50% of that for lectures/workshops; i.e. 1 credit = 30 periods of 60 minutes each.
    - For self-learning, based on e-content or otherwise, the credit weightage for equivalent hours of study should be 50% or less of that for lectures/workshops.

i. **Grace Marks**
    Grace Marks may be awarded to a student for meritorious achievements in co-curricular activities such as Sports/Arts/ NSS/NCC/ Student Entrepreneurship.

Attendance:

A candidate shall be permitted to appear for the Semester-End examinations only if she satisfies the following requirements:

- She must secure not less than 75% attendance in the total number of working days in each semester.
- She must earn a progress certificate from the head of the institution stating that she has satisfactorily completed the course of study prescribed in the semester as required by these regulations.
- Her conduct must be satisfactory.

It shall be open to the Controller of Examinations, Vimala College, Thrissur to grant condonation of shortage of attendance on the recommendation of the head of the institution in accordance with the following norms.

- The shortage shall not be more than 10%
- Shortage up to 20% shall be condoned once during the entire course provided such shortage is caused by continuous absence on genuine medical grounds.
- Shortage shall not be condoned more than twice during the entire course.
- Candidate who is not eligible for condonation of shortage of attendance shall repeat the semester as per university norms.

If a student registered in first semester of the B.VocProgramme is continuously absent from the classes for more than 14 working days at the beginning of the semester without informing the authorities the matter shall immediately be brought to the notice of the Principal. The names of such students shall be removed from the rolls.

Readmission

- There shall be provision for Readmission of students in CBCSS VUG 2021.
- The Principal can grant readmission to the student, subject to the conditions detailed belowand inform the matter of readmission to the Controller of Examinations,Vimala College, Thrissur within one month ofsuch readmission.
- This readmission is not to be treated as college transfer.
- There should be a gap of at least one semester for readmission.
- The candidate seeking readmission to a particular semester should have registered for theprevious semester examination.
- Readmission shall be taken within two weeks from the date of commencement of the semesterconcerned.
- For readmission, the vacancy should be within the sanctioned strength in the parent college.
- If change in scheme occurs while readmission, provision for credit transfer is subject tocommon guidelines prepared by Board of Studies/ Faculty concerned. For readmission to CBCSS VUG 2021 involving scheme change, the Principal concerned shall report the matter of readmission to Controller of Examinations,Vimala College, Thrissur with the details of previous semesters and course undergone with credits within two weeks in order to fix the deficiency/excess papers.

Multiple Entries

The students can discontinue after the successful completion of 2nd semesterwith Diploma (NSQF Level 5) or 4th semester with Advanced Diploma (NSQF Level 6) and canrejoin to the programme and opt for a lateral entry to 3rd semester or to 5th semester respectively later if wish to do so and can finish their B.Voc Degree with NSQF Level (7). In such cases, the multiple entry shall be completed within 6 years from the date of first registration of the programme.

When rejoining through multiple entries, the following points to be considered:

1. If rejoining is sought for a student who is the previous student of the same college and in the same programme, the principal / B.Voc Governing Council in the institution can grant the readmission.
2. In all other cases in multiple entries, readmission can be granted only after getting the approval from B.Voc Steering Committee of the university.
3. Rejoining the programme will be allowed to only if the candidate has secured a minimum CGPA of 2.5.
4. The candidate should remit the fees prevailing at that time.

Registration/Re-registration

a) Each student shall make an online registration for the courses he/she proposes to take within two weeks from the commencement of each semester.

b) The college shall send a list of students registered for each programme in each semester giving the details of courses registered, including repeat courses, to the University in the prescribed form within 45 days from the commencement of the semester.

c) A student shall be normally permitted to register for the examination if he/she has required minimum attendance. If the student has a shortage of attendance below 65% in a semester, the student shall be permitted to move to the next semester (if the attendance is more than 50% -Provisional registration) and can write the examination for the entire courses of the semester in which shortage of attendance occurs as supplementary examination only after the completion ofthe entire programme. If the attendance is less than 50%, the student is ineligible to continue theprogramme and has to seek readmission. There will not be any Repeat semester in CBCSS VUG2019.

d) A student who registered for the course shall successfully complete the programme within 6years from the year of first registration. If not, such candidate has to cancel the existing registration and join a fresh as a new candidate.

Rejoining the course

- Rejoining the course will be allowed to only if the candidate has secured a minimum CGPA of 2.5.
- The candidate should remit the fees prevailing at that time.
- B. Voc. governing council will take the decision regarding the rejoining.

College Transfer

College transfer may be allowed for programs without the change in nomenclature

The purpose of B.Voc programme is to generate and employ the skilled workforce for national development. Therefore, the B.Voc programme will not be considered equivalent to the general academic programs, which are intended for imparting a basic knowledge component to the student. However, for a qualified candidate opportunity for the pursuit of higher education shall not be declined and their eligibility for admission to higher courses may be treated by the individual Boards of Studies based on merit and relevance.

6. ADMISSION

Eligibility

- The admission to B.Voc programme will be as per the rules and regulations of the University for UG admissions.
- Basic eligibility for B.Voc is 10+2 and above in any stream (No age limit).
- The eligibility criteria for admission shall be as announced by the University from time to time.
- Separate rank lists shall be drawn up for reserved seats as per the existing rules.
- Grace Marks may be awarded to a student for meritorious achievements in co-curricular activities such as Sports/Arts/ NSS/NCC/ Student Entrepreneurship.

- Preferred subjects and index mark calculations will be decided by the respective Board of Studies.

Diploma Holders

Diploma holders (after 10+2) in the parent courses, approved by the University, who satisfies eligibility criteria can be admitted to the higher diploma (3rd semester) based on the availability of the seats and is under the sole discretion of the principal of the college/ B.Voc consortium.

Reservation for Vocational Students

25 marks weightage in index mark shall be given to all B.Voc programs to compute ranking of candidates who successfully completed VHSE/HSE with vocational / NSQF course general to all vocational students at Higher secondary level. 10 marks weightage in index mark shall be given to the candidates who studied Computer Science/Computer Applications at Higher secondary level.

Reservation/Quota

A maximum of 50 students can be admitted to one B.Voc programme. The students can be admitted only to the first semester (except for diploma holders). No students are admitted directly to the Third and Fifth semester in any circumstance except for diploma holders. Diploma holders may be permitted to third semester directly as mentioned above. The reservation rules for B.Voc is the same as that of the regular UG programs conducted in colleges affiliated to this university. Separate rank lists shall be drawn up for reserved seats as per the existing rules.

Prospectus

The college shall make available to all students admitted a prospectus listing all the courses offered in various departments during a particular semester. The information so provided shall contain the title of the courses, the semester in which it is offered and credits for the courses. Detailed syllabi shall be made available in the college websites.

There shall be a uniform calendar prepared by the college, conduct/schedule of the courses, examinations and publication of results.

7. COURSE EVALUATION

Evaluation (both internal and external) is carried out using mark system. The grading on the basis of total internal and external marks will be indicated for each course and for each semester and for the entire programme;
a. Indirect grading System based on a 10-point scale is used to evaluate the performance of students.

b. Each course is evaluated by assigning marks with a letter grade (O, A+, A, B+, B, C, P, F, I or Ab) to that course by the method of indirect grading.

c. An aggregate of P grade (after external and internal put together) is required in each course for a pass and also for awarding a degree (A minimum of 20% marks in external evaluation is needed for a pass in a course. But no separate pass minimum is needed for internal evaluation). No separate grade/mark for internal and external will be displayed in the grade card; only an aggregate grade will be displayed. Also the aggregate marks of internal and external are not displayed in the grade card.

d. A student who fails to secure a minimum grade for a pass in a course is permitted to write the examination along with the next batch. After the successful completion of a semester, Semester Grade Point Average (SGPA) of a student in that semester is calculated using the formula given below. For the successful completion of a semester, a student should pass all courses. However, a student is permitted to move to the next semester irrespective of SGPA obtained SGPA of the student in that semester is calculated using the formula

SGPA = <u>Sum of the credit points of all courses in a semester</u>
Total credits in that semester

SGPA = <u>C1G1 + C2G2 + C3G3 +....</u>
    C1 + C2 +....

Where G1, G2......are grade points and C1, C2...are credits of different courses of the same semester

The Cumulative Grade Point Average (CGPA) of the student is calculated at the end of a programme. The CGPA of a student determines the overall academic level of the student in a programme and is the criterion for ranking the students. CGPA can be calculated by the following formula.

CGPA = <u>Total credit points obtained in six semesters</u>
    Total credits acquired (180)

SGPA and CGPA shall be rounded off to two decimal places. CGPA determines the broad academic level of the student in a programme and is the index for ranking students (in terms of grade points). An overall letter grade (cumulative grade) for the entire programme shall be awarded to a student depending on her/his CGPA

Credit Point (P) of a course is the value obtained by multiplying the grade point (G) by the credit (C) of the course: $P = G \times C$

The evaluation scheme for each course shall contain two parts (1) Internal Assessment (2) external Assessment. 20% weight shall be given to the internal evaluation. The remaining 80% weight shall be for the external evaluation.

Internal Assessment
a) 20% of the total marks in each course are for internal examinations.

b) The internal assessment shall be based on a predetermined transparent system involving written tests, Class room participation based on attendance in respect of theory courses and lab involvement, records and attendance in respect of Practical Courses.

c) Internal assessment of the project will be based on its content, relevance, method of presentation, final conclusion and orientation to research aptitude.

d) Components with percentage of marks of Internal Evaluation of Theory Courses are-

Theory		Practical	
Test paper	40%	Record	40%
Assignment	20%	Lab Involvement	60%
Seminar	20%		
CRP based on attendance	20%		

For the test paper marks, at least two test papers should be conducted. If more test papers are conducted, the mark of the best two should be taken. To ensure transparency of the evaluation process, the internal assessment marks awarded to the students in each course in a semester shall be notified on the notice board at least one week before the commencement of external examination. There shall not be any chance for improvement for internal marks. The course teacher(s) shall maintain the academic record of each student registered for the course, which shall be forwarded to the University by the college Principal after obtaining the signature of both course teacher and Head of the Department.

The Split up of marks for Test paper and Class Room Participation (CRP) for internal evaluation are as follows.

Split up of marks for test papers

Range of Marks in test paper	Out of 8 (Maximum internal marks is 20)	Out of 6 (Maximum internal marks is 15)
Less than 35%	1	1
35%-45%	2	2
45% - 55%	3	3
55% - 65%	4	4
65% -85%	6	5
85% -100%	8	6

Split up of marks for Classroom Participation (CRP)

Range of CRP	Out of 4 (Maximum internal Marks is 20)	Out of 3 (Maximum internal Marks is 15)
50% ≤CRP <75%	1	1
75% ≤CRP <85%	2	2
85 % and above	4	3

External Evaluation

a) External evaluation carries 80% of marks.

b) All question papers shall be set by the college.

c) The external question papers may be of uniform pattern with 80/60 marks (The pattern is given in the Annexure).

d) The general components taken from other UG Programs with 3 credits will have an external examination of 2 hours duration with 60 marks and courses with 4credits will have an external examination of 2.5 hours duration with 80 marks.

e) The external examination in theory courses is to be conducted by the college. The evaluation of the answer scripts shall be done by examiners based on a well-defined scheme of valuation and answer keys shall be provided by the Controller of Examinations,Vimala College, Thrissur.

f) The external examination in practical courses shall be conducted by two examiners – one internal and an external, the latter appointed by the Controller of Examinations,Vimala College, Thrissur. No single Examiner is given the charge of conducting the examination. Both the internal and external examiners are equally responsible for the examination work; however evaluation and viva-voce shall be done by the external examiner. The practical board meeting should be conducted before conducting the external practical examination with the concerned examiners. The instructions for conducting the practical examinations, the mark distribution, question paper distribution and related matters should be discussed in the practical examination board meeting. The scheme of valuation must be strictly followed so as to ensure uniformity.

g) After the external evaluation only marks are to be entered in the answer scripts. All other calculations including grading are done by the examination section of the college.

Internship and Project

a) Internship or the mini/main project should be carried out in the industry, not necessarily with industry partner. The major idea for internship is to implement the things learned and to get a real life experience.

b) The Evaluation process follows 20% internal assessment & 80% external assessment.

c) There will be internship/project at the end of 2nd and 4th semesters.

d) The sixth semester includes one internship and project for the whole semester along with a term paper. Every student shall undergo one internship for the whole semester and along with that they should do a project based on their internship. At the end of the semester, they should submit internship report and project.

e) Every student will be assigned an internal guide, allotted from the parent department concerned or an expert available in the college appointed by the principal or the head of the department. The student has to make regular discussions with the guide while choosing the subject/area and throughout the life time of the project.

f) At least three reviews should be conducted to evaluate the progress of work.

g) Since Internship and Project is considered as a single course having a common course code and course name, external examination is also conducted as single. But the evaluation (internal as well as external) should be done separately for internship and project. In the mark sheet and Grade Card, the split up mark is to be shown.

h) An evaluation team is constituted for conducting the evaluation. The team consists of external examiner and a faculty from the institution. If necessary, representatives from the industry can also be added to the panel.

i) Students should submit a report of their work. A valid certificate of internship from the organization should be produced as a proof that the work is carried out in the respective organization. Attendance statement also should be produced.

j) Students are required to make the presentations of their work to present before the panel of examiners. A viva will be conducted based on the report and students are supposed to clarify the queries regarding their work.

Mark distribution for internship

Distribution	External	Internal
Report	100	30
Viva	60	10
Total	**160**	**40**

Mark distribution for Project

Marks Distribution	Total marks	Internal Assessment Marks
Theory/ Algorithm/Flow diagram	40	5
Implementation	80	20
Result/Output	20	5
Record	10	5
Viva	10	5
Total	**160**	**40**

Evaluation of Audit courses

The examination shall be conducted by the college. The Question paper shall be of 100 marks of 3 hour duration. For SDE/Private students it may be of MCQ/ fill in the blank type questions or online question paper may be introduced.

Evaluation of Term Paper

The term paper shall be in the sixth semester along with internship and project. It should be in the standard format which is eligible for publishing. It has no external evaluation but only internal assessment. The concerned Board of Studies shall include necessary guidelines for the evaluation of term paper.

Minimum for pass

The successful completion of all the courses prescribed for the diploma/degree programme with P grade shall be the minimum requirement for the award of diploma/degree.

Notes:

1. For Project/internship, the minimum for a pass shall be 50% of the total marks assigned to the respective examination. A student who does not secure this pass marks in a subject will have to repeat the respective subject.

2. If a candidate has passed all examinations of B.VocProgramme (at the time of publication of results of last semester) except Internship and Project in the last semester, a re-examination for the same should be conducted within one month after the publication of results. Each candidate should apply for this Save-A-Year examination within one week after the publication of last semester results.

Pattern of Questions for Semester-End Examinations of Theory/Practical Subjects

The question papers of Semester-End examinations of theory subjects shall be able to perform achievement testing of the students in an effective manner. The question paper shall be prepared

- Covering all sections of the course syllabus and total marks from each module should be approximately the same.
- Unambiguous and free from any defects/errors
- Emphasizing knowledge testing, problem solving & quantitative methods
- Containing adequate data/other information on the problems assigned
- Having clear and complete instructions to the candidates.

The external question papers may be of uniform pattern with 80/60 marks. Duration of Semester-End examinations with3 credits will have an external examination of 2 hours duration with 60 marks and courses with 4credits will have an external examination of 2.5 hours duration with 80 marks.

The pattern of questions for theory subjects with credit 4 shall be as follows:

Section	Total No of Questions	No. of Questions to be answered	Marks for each question	Total marks	Ceiling
A: Very Short/ Objective answer questions	15	15	2	30	25
B: Short answer questions	8	8	5	40	35
C: Essays	4	2	10	20	20
Total					**80**

The pattern of questions for theory subjects with credit 3 shall be as follows:

Section	Total No of Questions	No. of Questions to be answered	Marks for each question	Total marks	Ceiling
A: Very Short/ Objective answer questions	12	12	2	24	20
B: Short answer questions	7	7	5	35	30
C: Essays	2	1	10	10	10
Total					**60**

For practical:

Marks Distribution	Total marks
Theory/ Algorithm/Flow diagram	20
Implementation	30
Result/Output	10
Record	10
Viva	10
Total	80

Credit System

Each subject shall have a certain number of credits assigned to it depending upon the academic load and the nature and importance of the subject. The credit associated with each subject will be shown in the prescribed scheme and syllabi. Each course shall have an integer number of credits, which reflects its weightage.

Grading- Indirect Grading System

Indirect Grading System based on a 10-point scale is used to evaluate the performance of students.

- Each course is evaluated by assigning marks with a letter grade (O, A+, A, B+, B, C, D, E or F) to that course by the method of indirect grading.
- An aggregate of P grade (after external and internal put together) is required in each course for a pass (Except for project) and also for awarding a degree/diploma (A

minimum of 20% marks in external evaluation is needed for a pass in a course. But no separate pass minimum is needed for internal evaluation).

- Appearance for Internal Assessment and End Semester Evaluation are compulsory and no grade shall be awarded to a candidate if she is absent for Internal Assessment / End Semester Evaluation or both.
- A student who fails to secure a minimum grade for a pass in a course is permitted to write the examination along with the next batch.
- After the successful completion of a semester, Semester Grade Point Average (SGPA) of a student in that semester is calculated using the formula given below. For the successful completion of a semester, a student should pass all courses. However, a student is permitted to move to the next semester irrespective of SGPA obtained.
- SGPA and CGPA shall be rounded off to two decimal places. CGPA determines the broad academic level of the student in a programme and is the index for ranking students (in terms of grade points).
- An overall letter grade (Cumulative Grade) for the entire programme shall be awarded to a student depending on her/his CGPA

8. GRADE CARDS

The College shall issue to the students grade/marks card (by online) on completion of each semester, which shall contain the following information.

- Name of University
- Name of College
- Title of Under Graduate Programme
- Semester concerned
- Name and Register Number of students
- Code number, Title and Credits of each course opted in the semester
- Internal marks, External marks, total marks, Grade point (G) and letter grade for each course in the semester
- The total credits, total credit points and SGPA in the semester (corrected to two decimal places)
- Percentage of total marks

The final Grade/mark 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. However, for the compilation of CGPA only the best performed courses, if any, with maximum grade points alone shall be taken subject to the minimum credits requirements (180) for passing a specific degree. The final grade card shall show the percentage of marks, CGPA (corrected to two decimal places) and the overall letter grade of a student for the entire Programme. The final grade/mark card shall also include the grade points and letter grade of general and skill components. This is to be

done in a ten point indirect scale. The final Grade Card also contains the list of Audit Courses passed and the details of Extra Credits.

9. REVALUATION

In the new system of grading, revaluation is permissible. The prevailing rules of revaluation area applicable to CBCSS VUG 2021. Students can apply for photocopies of answer scripts of external examinations. Applications for photocopies/scrutiny/revaluation should be submitted within 10days of publication of results. The fee for this shall be as decided by the college.

10. COURSE IMPROVEMENT

A maximum of two courses can be improved in each semester. Improvement of a particular semester can be done only once. The student shall avail the improvement chance in the succeeding year after the successful completion of the semester concerned. The internal marks already obtained will be carried forward to determine the grades/marks in the improvement examination. If the candidate fails to appear for the improvement examination after registration, or if there is no change in the results of the improvement examination appeared, the marks/grades obtained in the first appearance will be retained.

Improvement and supplementary examinations cannot be done simultaneously.

11. AWARD OF DEGREE

The successful completion of all the courses (General Education Components, Skill development Components and Audit courses) prescribed for the B.Voc Web Technology Programme with P grade shall be the minimum requirement for the award of B.Voc Web Technology Programme degree.

Levels of Awards
B.Voc. is programme with multiple exits. Following table shows the various certificates and their duration.

Awards	Duration
Diploma	2 Semesters
Advanced Diploma	4 Semesters
B.Voc Degree	6 Semesters

Students are free to exit at any point in the duration of the programme. Only those students who successfully complete the courses and clear the examination are eligible for the certificate. Separate certificate will be awarded for each year for successful candidates. Students who fail in any course may be allowed to move the higher level but won't be eligible for any certificates until she clears previous courses. B.Voc degree will confer to those whose successfully complete the diploma, advanced diploma and project/ internship.

12. GRIEVANCE REDRESSAL COMMITTEE

COLLEGE LEVEL

The College shall form a Grievance Redressal Committee in each department comprising of course teacher and one senior teacher as members and the Head of the department as Chairman. This committee shall address all grievances relating to the internal assessment grades of the students. There shall be a College Level Grievance Redressal Committee comprising of Student Advisor, two senior teachers and two staff council members (one shall be elected member) as members and principal as Chairman.

13. ANTI RAGGING CELL

\Head of Institution shall take necessary steps to constitute anti-ragging committee and squad at the commencement of each academic year. The committee and the squad shall take effective steps as specified by the Honorable Supreme Court of India, to prevent ragging.

14. PROGRAM STRUCTURE

LEGEND	
Item	**Description**
C	Credits
E	External Component (%)
I	Internal Component (%)
L	Lecture Hours
P	Practical Hours
T	Total

NSQF Level	Skill Component Credits	General Education credits	Total Credits for award	Normal Duration	Exit Points/ Awards	Job Role
4	16	14	30	One Semester	Certificate	1)Graphic Designer
5	31	29	60	Two Semesters	Diploma	1)Media Developer NASSCOM QP: SSC/Q0504 2)Web Developer NASSCOM

						QP: SSC/Q0503 3)Web Designer
6	65	55	120	Four Semesters	Advanced Diploma	1)Web Application developer 2)SEO specialist
7	119	61	180	Six Semesters	B.Voc Degree	1) UI Developer NASSCOM QP: SSC/Q0502 2)Cross Platform Application Developer

C. No	Course Code	Course Name	Credit	Marks			Hours/Week			Total Hrs/ Sem
				Int	Ext	Total	L	P	Total	
SEMESTER I										
1.1	**A01**	ENG1A01	3	15	60	75	3	0	3	
1.2	**A02**	ENG1A02	3	15	60	75	3	0	3	
1.3	**A07(3)**	MAL1A07	4	20	80	100	4	0	4	
	A07(3)	HIN 1A07								
1.4	**GEC1CF01**	Computer Fundamentals	4	20	80	100	4	0	4	60
1.5	**SDC1WT01**	Introduction to Adobe Photoshop &Illustrator	4	20	80	100	4	0	4	60
1.6	**SDC1WT02**	Basics of HTML	4	20	80	100	4	0	4	60
1.7	**SDC1WT03(P)**	Graphics Lab	4	20	80	100	0	4	4	60
1.8	**SDC1WT04(P)**	HTML Lab	4	20	80	100	0	4	4	60
		Total Credits	**30**			**750**				
SEMESTER II										
2.1	**A03**	ENG2A03	4	20	80	100	4			
2.2	**A04**	ENG2A04	4	20	80	100	4			
2.3	**A08(3)**	MAL2A08 (3)	4	20	80	100	4			
	A08(3)	HIN 2A08 (3)								
2.4	**GEC2DH02**	Theory of Domain Hosting	3	15	60	75	3	0	3	45
2.5	**SDC2WT05**	Introduction to BootStrap	3	15	60	75	3	0	3	45
2.6	**SDC2WT06**	Advanced HTML &CSS	4	20	80	100	4	0	4	60
2.7	**SDC2WT07(P)**	Advanced HTML and Bootstrap Lab	4	20	80	100	0	4	4	60
2.8	**SDC2WT08(Pr)**	Mini Project/Internship	4	20	80	100	0	4	4	60
		Total Credits	**30**			**750**				
SEMESTER III										
3.1	**A11**	Basic Mathematics for Competitive Exams	4	20	80	100	4			
3.2	**A12**	Better Skills for Business and Profession	4	20	80	100	4			
3.3	**GEC3VC03**	Theory of Version Control	3	15	60	75	3	0	3	45
3.4	**SDC3WT09**	Web Programming using PHP	4	20	80	100	4	0	4	60
3.5	**SDC3WT10**	RDBMS using MY SQL	4	20	80	100	4	0	4	60

3.6	SDC3WT11	Client Side Scripting using JavaScript	4	20	80	100	4	0	4	60
3.7	SDC3WT12(P)	PHP Lab	4	20	80	100	0	4	4	60
3.8	SDC3WT13(P)	SQL Lab	3	15	60	75	0	3	3	45
		Total Credits	**30**			**750**				
		SEMESTER IV								
4.1	A13	Entrepreneurship Development	4	20	80	100	4			
4.2	A14	Health and Safety at Workplace	4	20	80	100	4			
4.3	GEC4XM04	Introduction to XML	3	15	60	75	3	3	3	45
4.4	GEC4AV05	Fundamentals of Audio, Video and multimedia	4	20	80	100	4	4	4	60
4.5	SDC4WT14	Scripting using Python	4	20	80	100	4	0	4	60
4.6	SDC4WT15	Web Server Programming using Django	3	15	60	75	3	0	3	45
4.7	SDC4WT16(P)	Python Scripting Lab	4	20	80	100	0	4	4	60
4.8	SDC4WT17(Pr)	Mini Project / Internship	4	20	80	100	0	4	4	60
		Total Credits	**30**			**750**				
		SEMESTER V								
5.1	GEC5SE06	Introduction to Search Engine Optimization	3	15	60	75	3	0	3	45
5.2	GEC5QA07	Quality Assurance in Software	3	15	60	75	3	0	3	45
5.3	SDC5WT18	Content Management System	4	20	80	100	4	0	4	60
5.4	SDC5WT19	Introduction to Cross Platform Website Applications	4	20	80	100	4	0	4	60
5.5	SDC5WT20	Ruby on Rails	4	20	80	100	4	0	4	60
5.6	SDC5WT21(P)	Cross Platform Website Lab	4	20	80	100	0	4	4	60
5.7	SDC5WT22(P)	Ruby Lab	4	20	80	100	0	4	4	60
5.8	SDC5WT23(P)	Content Management System Lab	4	20	80	100	0	4	4	60
		Total Credits	**30**			**750**				
		SEMESTER VI								
6.1	SDC6WT24 (Pr)	Internship and Project Internship Project	28	40 40	160 160	200 200	0	28	28	900
6.2	SDC6WT25	Term Paper	2	50	0	50				
		Total Credits	**30**			**450**				

Semester I

Computer Fundamentals

Course Code: GEC1CF01
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks

Objectives:
- To equip the students with fundamental ideas of Computer.
- To learn the basics of Computer organization.
- To equip the students to understand the networking and hosting techniques.

Learning outcomes:
- Better Knowledge of computer equipments, including both hardware and software.
- Understanding basic concepts of operating systems, networking and cloud computing.

Course Outline

UNIT I [15 T]

Introduction to Computers: Characteristics of Computers, Generations of Computers, Classifications of Computer; Data Representation: Number System(Decimal, Binary, Octal), Conversion from Decimal to Binary, Octal; Computer Languages: Machine Language, Assembly Language, High-Level Language; Language Translators: Assembler, Compiler, Interpreter, Linker and Loader; Features of Good Language; Basics of Computer Organization: Von Neumann Model; Memory Units: Memory Hierarchy, Primary Storage, Cache Memory, Registers, Secondary Storage Devices.

UNIT II [10T]

Hardware Components: SMPS, Motherboard, Add-on Cards, Ports, Memory, Adapters, Network cables, Input Devices, Output Devices, Storage Devices; Software: System Software, Utility Software, Application Software.

UNIT III [15 T]

Operating System: Objectives, Functions; Types of Operating Systems: Serial Processing, Simple Batch Systems, Multi Programmed Batch Systems, Time-Sharing Systems, Parallel Systems, Distributed Systems, Real-Time Systems.

UNIT IV [14 T]

Introduction to Computer Networks, Topology, Categories of Networks, Internetwork, Internet, Network Models: Layered model, OSI and TCP/IP models.

UNIT V [6 T]

Introduction to the Cloud, Key Cloud Characteristics, Cloud Deployment Models, Cloud Hosting.

References:

1. Ashok Arora, *Computer Fundamentals and Applications*, Vikas Publishing House, 2015
2. D. A. Godse & A. P. Godse, *Digital Computer Fundamentals,* Technical Publications, 2007
3. Anita Goel, *Computer Fundamentals*, Pearson Education India, 2010
4. Sinha P. K, *Computer Fundamentals*, BPB Publications
5. Ram B, *Computer fundamentals*, New Age International Pvt, Ltd Publishers
6. Rajaraman V & Radhakrishnan, *An introduction to Digital computer Design*, PHI

Introduction to Adobe Photoshop & Illustrator

Course Code: SDC1WT01
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks

Objectives:
- To understand the basic tools in Adobe Photoshop and Illustrator.
- Equip students to start making professional web graphics.

Learning outcome:
- Efficiently manage web graphics

Course Outline

UNIT I [14 T]

Introduction to Photoshop: Photoshop Environment, Opening Images, Moving Images; Setting Preferences; Basic Image Manipulation: Bitmap Images, Vector Images, Zooming & Panning an Image, Working with Multiple Images, Rulers, Guides and Grids; Color Basics and Management; Tool Box: Painting Tools; Basic Selections: Elliptical Marquee Tool, Magic Wand & Free Transform Tool, Regular & Polygonal Lasso Tools, Pen Tool, Magnetic Lasso, Quick Selection Tool & Refine Edge, Modifying Selections, Brush Settings

UNIT II [14 T]

Layers: Creating, Selecting, Linking & Deleting Layers, Locking & Merging Layers, Copying Layers, Layer Styles, Filling & Grouping Layers; Blending Modes, Filling and Stroking, Creating and Modifying Text, Channels and Masking, Painting in Photoshop, Basic Photo Correction, Photo Retouching and Repairing, Creating Special Effects.

UNIT III [13 T]

Introduction to Adobe Illustrator: Raster vs. Vector Images, Work Area, Tools Panel, Control Panel, Fill and Stroke; Basic Shape Tools, Selecting and Aligning Objects: Selection Tools-Selection Tool,

Direct Selection Tool, Magic Wand Tool, Lasso Tool; Objects: Selecting, Aligning, Arranging, Hiding, Reshaping; Working with Groups of Objects, Screen Modes, Setting Preferences.

UNIT IV[12T]

Working with Artboards: Adding, Editing, and Reordering; Transforming Objects: Scaling, Reflecting, Rotating, Distorting, Shearing, Positioning, Different Ways of Transforming Objects, Envelopes, Clipping Mask; Rulers and Guides; Pen and Pencil Tools: Drawing, Selecting, and Editing; Color and Painting: Color Models, Spot and Process Colors, Color Picker, Color Panel, Color Guides, Swatches, Swatch Libraries; Painting: Fills, Strokes, Live Paint Groups, Brushes, Gradients, Meshes, Patterns.

UNIT V[7 T]

Type and Text: Creating, Entering and Formatting, Spelling and language dictionaries, Character Panel, Formatting Paragraphs, Tabs Panel; Special Effects and Filters: Appearance Attributes, Applying Effects - Stylize, Distort and Transform, Warp, Rasterization; Web graphics, Working with Symbols, Automating tasks.

References:

1. Adobe Creative Team, *ADOBE PHOTOSHOP CS2 Classroom in a Book*, Adobe Press, 2005
2. Brian Wood, *Adobe Illustrator CS6: Classroom in a Book*, Adobe Press, 2012
3. Andrew Faulkner and Conrad Chavez, *Adobe Photoshop CC Classroom in a Book*, Adobe Press, 2018

Basics of HTML

Course Code: SDC1WT02
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks
Objective:
● To be acquainted with basic skills of web designing.
Learning outcome:
● Understand HTML and basics of CSS & JavaScript.

Course Outline

UNIT I [12 T]

Introduction: History of HTML; Basic HTML Structure: Tags, Head, Body, Colors, Attributes; Lists: Ordered List, Unordered List, Definition List, Nested List.

UNIT II [12 T]

Links: Introduction, Relative Links, Absolute Links, Link Attributes, Link within a Document using Bookmarks.

UNIT III [12 T]

Images: Adding an Image, Using Images as Links, Setting Background Image, Specifying Image Size, Imagemaps, Image Alignment.

UNIT IV [12 T]

Working with Tables and Frames: Creating a Table, Table Headers, Captions, Spanning Multiple Columns, Styling Table; Frames.

UNIT V [12 T]

Forms and Controls: Input elements, Other Form Elements.

References:

1. O'Reilly, *Introduction to HTML and CSS,* Macmillan publishers, 2010, Second Edition
2. Jon Duckett John Wiely, *HTML and CSS*,John Wiley & Sons, Inc, 2012, Fifth Edition

Adobe Photoshop and Illustrator Lab

Course Code: SDC1WT03 (P)
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours:60
Course Evaluation: Internal – 20 Marks + External – 80 Marks

1. Illustration of Painting tools in Photoshop
2. Illustration of Rulers, Guides and Grids in Photoshop
3. Illustration of Multiple Images Manipulation in Photoshop
4. Illustration of Layers Manipulation in Photoshop
5. Illustration of Blending Modes in Photoshop
6. Illustration of Filling and Stroking in Photoshop
7. Illustration of Masking in Photoshop
8. Illustration of Photo repairing in Photoshop
9. Illustration of Special effects in Photoshop
10. Illustration of Groups Manipulation in Illustrator
11. Illustration of Shapes in Illustrator
12. Illustration of Objects manipulation in Illustrator
13. Illustration of Objects Transformation in Illustrator
14. Illustration of Pen and pencil tools in Illustrator
15. Illustration of Colors and Painting Manipulation in Illustrator
16. Illustration of Type and Text in Illustrator
17. Illustration of Special Effects in Illustrator
18. Illustration of Symbols Manipulation in Illustrator
19. Illustration of Automating tasks in Illustrator
20. Illustration of Web Graphics in Illustrator

HTML Lab

Course Code: SDC1WT04 (P)
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours:60
Course Evaluation: Internal – 20 Marks + External – 80 Marks

1. Illustration of Body and pre tags
2. Illustration of text Font tags
3. Illustration of Background Images and color
4. Illustration of comment, h1….h6, and div tag
5. Illustration text formatting tags
6. Illustration of Ordered List tag
7. Illustration of Unordered List tag
8. Illustration of Nested tag
9. Illustration of Image tag
10. Illustration of Hyper Link tag (Anchor tag)
11. Illustration of Table tag
12. Illustration of Frame tag
13. Illustration of Form tag
14. Illustration of CSS (cascading style sheet)
15. Program to create a simple website

Semester II

Theory of Domain & Hosting

Course Code: GEC2DH02
Contact Hours per Week: 3
Number of Credits: 3
Number of Contact Hours: 45
Course Evaluation: Internal – 15 Marks + External – 60 Marks
Objective:
- To obtain through knowledge on Domain Name System Terminology and Web hosting facilities.

Learning outcome:
- Practical knowledge and Hands own expertise in Domain Configuration and Web Hosting.

Course Outline

UNIT I [10T]

Introduction to Web: Client-Server Model; Characteristics of a Website, Role of ICANN & IANA, Introduction to Domain Name System Terminology: Components, Concepts; Introduction to Domain Name System: Domain, Domain Name, IP Address, Top-Level Domain, Sub Domain, Fully Qualified Domain Name, Name Servers, Root Servers, TLD Servers, Domain-Level Name Servers, Resolving Name Server.

UNIT II [9 T]

Addressing: IP Address Classes; Master-slave Architecture, Zones and Zone Files, Zone Transfer, Certificate Authorities (CAs), Digital Certificates, Record Types: SOA Records, A Records, AAAA Records, CNAME Records, MX Records, NS Records, PTR Records, CAA Records, TXT Records; Domain Name Configuration Steps.

UNIT III [10T]

Introduction to Hosting Servers: Web Hosting, Domain Registrars, Web Servers, Different Types of Web Servers; Different Types of Web Hosts: Shared Hosting, Virtual Private Server (VPS) Hosting, Dedicated Server Hosting, Cloud Hosting.

UNIT IV [10T]

Privacy: Data Privacy, Domain Privacy; Domain Security: Domain Squatting, Hijacking, Spoofing, Prevention Methods; Website Security: Issues, Risks, Cyberbullying; Web Protocols: TCP, UDP, SSH, HTTP, HTTPS, SMTP, TELNET, FTP, SFTP, SSL.

UNIT V [6 T]

FTP Client Softwares: Filezilla, Cyberduck, CuteFTP; Cloud Web Hosting Providers: AWS, DreamHost, Google Cloud; Green hosting.

References:
1. Peter Pollock, *Web hosting for dummies*, Wiley 2013

2. Wim Bervoets, *Fast, Scalable And Secure Web Hosting For Web Developers: Learn to set up your server and website*, 2016

Introduction to BootStrap

Course Code: SDC2WT05
Contact Hours per Week: 3
Number of Credits: 3
Number of Contact Hours: 45
Course Evaluation: Internal – 15 Marks + External –60Marks
Objective:

● Understand the basics of auto responsive environments in web site design

Learning outcome:

● To build auto responsive websites

Course Outline

UNIT I [9 T]

Introduction to Bootstrap: Bootstrap Development, Functionalities, Advantages, Uses; Responsive Web Design, Building Responsive Websites with Bootstrap, Basic Folder Structure, Simple Responsive Webpage, Layouts, Containers.

UNIT II [9 T]

Bootstrap CSS: Typography: Headings, Lead, Emphasis classes, Address, BlockQuote, Lists; Tables, Forms: Different types of forms, Form Control Sizing; Colors.

UNIT III [9 T]

Bootstrap Components: Buttons, Images, Tables, Dropdowns, Navs, Glyphicons, Navs, Navbar, Breadcrumbs, Pagination, Alerts, Progress Bars, Spinners, Cards, Jumbotron.

UNIT IV [9 T]

Bootstrap Grid System: Basic Grid System, Grid Classes; Auto Layout Columns, Types of Grids: Stacked to Horizontal, Extra Small, Small, Medium, Large and Extra Large Grids.

UNIT V [9 T]

BS JS – Modal dialogs, Alert, Button, DropDown, Tooltip, Popover, Collapse, Accordion, Carousel Scrollspy, Themes:Using Built-in themes, Building Custom themes.

References:

1. Matt Lambert, *Learning Bootstrap 4*, Packt Publishing Ltd, Second Edition

2. Jake Spurlock, *Bootstrap*, O'Reilly, 2013
3. Silvio Moreto, *Bootstrap 4 By Example*, Packt Publishing, 2016

Advanced HTML and CSS

Course Code: SDC2WT06
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks
Objective:

● To develop the skill and knowledge for Web page designing.

Learning Outcomes:

● Efficiently design a website.

Course Outline

UNIT I [13 T]

Structuring Documents for the Web: Introducing HTML, Attributes; Basic Text Formatting, Lists: Ordered List, Unordered List, Nested List; Links and Navigation, Images: Adding Images; Attributes, Images as Links; Tables: Basic Table Elements and Attributes, Nested Tables.

UNIT II [13 T]

Frames: Frame Element, Frameset Element, Links between Frames, Nested Framesets, Inline or Floating Frames; Forms: Attributes, Controls, HTTP get, HTTP post methods.

UNIT III [13 T]

HTML5: Semantic & Non-Semantic tags; Audio & Video: Adding Flash, Video and Audio; Canvas, Geolocation, Drag and Drop, Web Storage, Web Workers.

UNIT IV [13 T]

XHTML: Introducing XHTML, HTML vs XHTML; XHTML Syntax; DOCTYPEs, Attributes, Events, XHTML Validation.

UNIT V [8 T]

Cascading Style Sheets: Introduction, Elements, Attributes, Properties, Controlling Text, Selectors; Box Model.

References:

1. New Riders, 2014

2. Kogent, Learning Solutions Inc, -HTML 5 in simple steps

3. Steven M. Schafer, HTML, XHTML, and CSS Bible, 5ed, Wiley India, 2004

4. John Duckett, Beginning HTML, XHTML, CSS, and JavaScript, Wiley India, 2011

5. Ian Pouncey, Richard York, Beginning CSS: Cascading Style Sheets for Web Design, Wiley India, 2005

Advanced HTML and BootStrap Lab

Course Code: SDC2WT07(P)
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks

Course Outline

1. Illustration of Spans
2. Illustration to add audio and video
3. Illustration of Forms and attributes
4. Illustration of Frames and Frameset
5. Illustration of inline frames
6. Illustration of CSS properties and attributes
7. Formatting text in CSS
8. Illustration of Selector
9. Illustration of BoxModel
10. A program to illustrate Form validation
11. Illustration of a basic BootStrap program
12. Illustration of BootStrap typography
13. Illustration of different types of forms in BootStrap
14. Illustration of BootStrap components
15. Illustration of JavaScript classes in BootStrap

MiniProject/Internship

Course Code: SDC2WT08(Pr)
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal-20 +External – 80 Marks

Semester III
All Basic Mathematics and General Awareness

Course Code: A11

Contact Hours per Week: 4

Number of Credits: 4

Number of Contact Hours: 60

Course Evaluation: Internal – 20 Marks + External – 80 Marks

Objective:

- Understand and explain the importance of critical thinking.
- To overcome or solve the problems occurring in our everyday life.
- To understand basic of computer and relative concepts.
- To make the students understand the various services offered by various banks and insurance companies.

Learning outcome:

- Apply numerical and reasoning skills in competitive examinations.
- Understand some basic concepts of research and its methodologies.
- Bridge the fundamental skills of computers with the present level of knowledge of the students.
- To train and equip the students with the skills of modern banking and insurance.

Course Outline

UNIT I [12T]

Numerical Ability: Data Interpretation (Bar Graph, Line Chart, Tabular, Pie Chart), Inequalities/ Quadratic Equations, Number Series, Simplification and Approximation, Percentages, Average, Ratio and Proportion, Partnership, Profit and Loss, Simple Interest & Compound Interest, Problem on Ages, Data Sufficiency, Speed, Distance and Time, Work, Time and Wages, Probability, Permutation and Combination.

UNIT II[12T]

Reasoning Ability: Advance Puzzles, Seating Arrangements, Distance and Direction, Blood Relations, Syllogism, Order and Ranking, Coding-Decoding, Machine Input-Output, Alphabet and Number Series. Analogy, Passage and Conclusions, Statement and Conclusion, Statement and Assumptions, Statement and Arguments, Decision Making

UNIT III[12T]

Research Aptitude: Research: Meaning, Types, and Characteristics, Positivism and Postpositivism approach to research, Methods of Research: Experimental, Descriptive, Historical, Qualitative and Quantitative methods, Steps of Research, Thesis and Article writing: Format and styles of referencing, Application of ICT in research, Research ethics.

UNIT IV[12T]

Computer Aptitude: History of computers, Basics of computer's hardware and software, Short Cut Keys, operating system, Internet, Networking, Basics of MS-Office: MS-word, MS-Excel, MS-PowerPoint, Database, Hacking, Security Tools and Viruses.

UNIT V[12T]

General/ Financial Awareness: History of Banking in India, Banking and Financial Reforms in India, Financial Institutions in India, Functions of Banks,Types of Bank Accounts, Types of Loans, Types of Mortgages, Types of Cheque& Cards, Foreign Banks in India, Fund Transfer Services, Structure of Banking Industry, Principles of Insurance, Credit & Debit, Mutual Funds, Bombay Stock Exchange (BSE), National Stock Exchange (NSE), Banking Ombudsman, Inflation, Money Laundering & Anti-Money Laundering, Green Banking, RBI Act, 1934.

References:

1. Quantitative Aptitude for Competitive Examinations - Quantitative Aptitude R.S Agrawal, S.Chand,ISBN: 9789352534029, 9789352534029Edition: Revised & Enlarged Edition, 2020
2. Verbal Reasoning (Useful For Various Competitive Exams), Dr. LAL & KUMAR, ISBN: 978-81-7482-581-0
3. Teaching and Research aptitude ,Upkar's Publications, PratiyogithaDarpan, ISBN : 97874822154.
4. Banking Awareness (English, Paperback, unknown), Arihant Publishers, ISBN: 9789311124667, 9789311124667

Professional Business Skills

Course Code: A12
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks
Objective:
- To update and expand basic Informatics skills of the students
- To equip the students to effectively utilize the digital knowledge resources for their study

Learning outcome:
- Able to become a professional by acquiring various soft skills needed for business success
- Explore the world of e-learning and also the various consequences of Cyber space and crimes.
- Application of data analysis and the role of artificial intelligence in e-business.
- Apply the skills of digital marketing and e-commerce

Course Outline

UNIT I [12 T]

Professionalism: Meaning -Definition – Characteristics - Traits and Qualities of a goodprofessional - Professionalism in business - Professional Skills: important soft skills forbusiness success- Professionalism in Communication: Verbal Communication: ProfessionalPresentation - Different Presentation Postures- Written Communication: Email – Significanceof Email in business – Email etiquette: format - rules – dos and don'ts – TechnicalDocumentation: Standards – Types

UNIT II [12T]

E-Learning :Introduction of electronic learning - benefits and drawbacks of e-Learning -Online education - Digital age learners - Knowledge resources on internet - E-books, Audio,Video and other means for e-learning- Introduction to e-content development and tools -Online libraries – MOOCs - The e-Learning as a service Industry - major technologies usedin e-Learning- different approaches for e-Learning delivery - E-learning in India

UNIT III[12T]

Business Data Analysis: Features of New Generation Computers – Concept of data analysis– Business Data Analysis – Data Analyst – Types of analysts - organisation and source ofdata, importance of data quality, dealing with missing or incomplete data- Social NetworkingAnalysis – Big Data Analysis - Role of Data Scientist in Business & Society - Role ofArtificial Intelligence and Intelligent Agents in e-business - Ethical and Legal considerations

in Business Analytics

UNIT IV[12T]

Socio - Cyber Informatics: IT and society - Digital Divide – Digital natives-Cyber spaceNew opportunities and threats - Cyber ethics - Cyber-crimes -Types - Cyber Laws –Organisations related with cyber laws-Cyber addictions - Information overload – Healthissues - e-waste and Green Computing –Recent E-governance initiatives in India

UNIT V [12T]

Digital Marketing : Introduction to Digital marketing Environment –meaning & Concept –Need for digital marketing – Advantages and disadvantages of digital marketing -Trends indigital marketing-Types of digital marketing – Business models in digital marketingBusiness to Business (B2B), Business to Customer (B2C), Customer to Customer (C2C),Business to Employees (B2E), Business to Government (B2G) - Online advertising - types ofonline advertising - Top e-commerce websites around the world and its scenario in India.PPC (Pay per Click) advertising – Search engine Analytics – search engine ads – socialmedia channels and ads

References:

1. Professional Business Skills – Lee Pelitz 2nd Edition

2. Peter Norton, Introduction to Computers, Tata McGraw Hill Private Limited, New Delhi,.

3. Alan Evans, ITL ESL, Leslie Lamport, Dolores Etter, Darren George, Kenneth C Laoudon, Gary Rogers, Rainer Handel, INFORMATICS -Technology in Action, Pearson Education, Delhi, 2009.

4. V.Rajaraman, Introduction To Information Technology, PHI Learning Private Limited,New Delhi, 2009.

6. Godfrey Parkin,DigitalMarketing:Strategies for online success,New Holland publishers Ltd,2009

7. Damian Ryan,Understanding Digital marketing:Marketing strategies for Engaging the Digital generation,Kogan page,3rd Edition,2014

7. Jonah Berger,Contagious Why things catch on,Simon&Schuster,2013

8. Turban E, Armson, JE, Liang, TP &Sharda, Decision support and Business Intelligence Systems, 8thEdition, John Wiley & Sons, 2007

9. Frank J. Ohlhorst, Big Data Analytics, 1st Edition, Wiley, 2012.

10. Efraim Turban, Ramesh Sharda, Jay Aronson, David King, Decision Support and Business Intelligence Systems, 9th Edition, Pearson Education, 2009

11. Microsoft Office 2007 Business Intelligence - Reporting, Analysis, and Measurement from the Desktop, Doug Harts, TATA McGraw-Hill Edition, 2008

12. Data Mining for Business Intelligence: Concepts, Techniques, and Applications in Microsoft Office Excel with XLMiner, GalitShmueli, Nitin R. Patel, Peter C. Bruce, Wiley Publication, 2010

Theory of Version Control

Course Code: GEC3VC08
Contact Hours per Week: 3
Number of Credits: 3
Number of Contact Hours: 45
Course Evaluation: Internal – 15 Marks + External – 60 Marks
Objective:
● To understand the changes in the software version and ways to manage it.
Learning outcome:
● To be proficient in source control and build.

Course Outline

UNIT I [9 T]

Basic Concepts of Version Control: Repository, Versioning Models; Introduction to Subversion: History, Features, Architecture, Components; Branching and Merging: Basics, Using Branches, Copying Changes between Branches, Common Use-Cases for Merging, Switching a Working Copy, Tags, Branch Maintenance.

UNIT II [9 T]

Introduction to Source Code Management: Goals, Principles, Core Concepts (Baselines, Sandboxes and Workspaces, Branching, Deltas, Changesets).

UNIT III [9 T]

Repository Administration: Strategies for Repository Deployment, Creating and Configuring Repositories, Repository Maintenance, Moving and Removing Repositories.

UNIT IV [9 T]

Server Configuration: Basic Concepts, Choosing a Server Configuration, svnserve, httpd (Apache HTTP Server), Path-Based Authorization.

UNIT V [9 T]

Subversion Command-Line, Advanced Subversion Commands: svn, svnadmin, svnlook, svnsync, svndumpfilter, svnversion, mod_dav_svn Configuration Directives, mod_authz_svn; Subversion properties.

References:

1. William A.Nagel, *Subversion Version Control: Using the Subversion Version Control System in Development Projects*, First edition, Prentice Hall.
2. C. Michael Pilato, Ben Collins-Sussman, Brian W. Fitzpatrick, *Version Control with Subversion: Next Generation Open Source Version Control*, Second Edition, O'Reilly Media.

Web Programming Using PHP

Course Code: SDC3WT09
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks
Objectives:

- To learn server side scripting.

- To learn how to develop dynamic websites.

- To learn how to interact with databases through the internet.

Learning outcomes:

● Build an understanding of the web development using PHP.

Course Outline

UNIT I [12 T]

PHP: Introduction, Server Side Programming, Role of Web Server Software; Including PHP Script in HTML: head, body, external. Comments, Data Types, Variables and Scope, echo and print.

UNIT II [12 T]

Operators: Arithmetic, Assignment, Relational, Logical; Conditional Statements,Switch, Loops, break and continue, User Defined Functions, Strings,Numbers,Math.

UNIT III [12 T]

Working with PHP: Passing information between pages using HTTP GET and POST method, Cookie, Session; String Functions: strlen, strops, strstr, strcmp, substr, str_replace, string case; Array constructs: array(),list() and foreach(); Header().

UNIT IV [12 T]

PHP & PostgreSQL: Features of PostgreSQL, Data Types, PostgreSQL commands:CREATE DATABASE, CREATE TABLE, DESCRIBE TABLE (\d table_name or using information_schema), SELECT, SELECT INTO, CREATE AS, DELETE, UPDATE, INSERT.

UNIT V [12 T]

PHP - PostgreSQL Integration: Establishing Database Connection (pg_connect(), pg_connection_status(), pg_dbname()), Getting Error String (pg_last_error()), Closing Database Connection (pg_close()), Executing SQL Statements (pg_query(), pg_execute()), Retrieving Data (pg_fetch_row(), pg_fetch_array(), pg_fetch_all(), pg_fetch_assoc(), pg_fetch_object(),pg_num_rows(), pg_num_fields() pg_affected_rows(), pg_num_rows(), pg_free_result()); Insertion and Deletion of data using PHP, Displaying Data from PostrgreSQL database in webpage.

References:

1.The Joy of PHP: A Beginner's Guide to Programming Interactive Web Applications with PHP and mySQL, Author – Alan Forbes, LatestEdition – Fifth Edition,Publisher – Plum Island
2. W. Gilmore, Beginning PHP and PostgreSQL 8: From Novice to Professional, 2007, ISBN: 9788181286000

3. IvelinDemirov, Learn JavaScript VISUALLY, Third edition (27 June 2014) 5. Jim Converse & Joyce Park, PHP & MySQL Bible, Wiley.

RDBMS using MY SQL

Course Code: SDC3WT10
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks

Objectives:
- Basic understanding of DBMS concepts
- Learn RDBMS concepts with MySQL database language.

Learning outcome:
- Good knowledge in Database design and MySQL database development.

Course Outline

UNIT I [12 T]

Introduction to DBMS: Basic Concepts, Characteristics of Database Approach, Advantages of using DBMS; Database Concept and Architecture, Data Models, Schemes, Instances, Data Independence, Database Languages; Database Modeling using entity-relationship(ER): Attributes & Keys(Primarykey, Foreign key), Weak Entity Set, Enhanced Entity-Relationship(EER).

UNIT II [12 T]

Relational Model: Basic Concepts, Relational Algebra and Operations; Functional Dependencies, Normal forms: 1NF, 2NF, 3NF, Boyce-Codd Normal Form; Database Design.

UNIT III [12 T]

Introduction to MySQL Database: Data Definition Language (DDL) commands: Table Creation and Alteration, Constraints, View, Index, Cluster, Sequence, Synonym.

UNIT IV [12 T]

SQL Data Manipulation Language (DML) commands: Insertion, Deletion, Updation, Data Retrieval; Functions: Numeric, Data, Character, Conversion, Group Functions with having clause; Set Operators, Sorting, Sub-Query, Joins: Single join, Self join, Outer join; Date Functions.

UNIT V [12 T]

Transaction Control Language (TCL): Basic commands (Grant, revoke, commit, savepoint), Usage of Triggers, Functions and Procedures using PL/SQL; Establishing Database Connectivity.

References:

1. C. J. Date, A. Kannan and S. Swamynathan, *An Introduction to Database Systems*, Pearson Education, Eighth Edition, 2009.
2. Abraham Silberschatz, Henry F. Korth and S. Sudarshan, *Database System Concepts*, McGraw-Hill Education (Asia), Fifth Edition, 2006.
3. Elmasri, Shamkant B. Navathe, *Fundamentals of Database Systems*, 7th Edition.

Client-Side Scripting using JavaScript

Course Code: SDC3WT11

Contact Hours per Week: 4

Number of Credits: 4

Number of Contact Hours: 60

Course Evaluation: Internal – 20 Marks + External – 80 Marks

Objective:

● To learn client side scripting.

   ●To learn dynamic scripting language supporting prototype based object construction.

Learning Outcomes:

● Efficiently design a dynamic website.

●Better knowledge in developing Javascript applications.

Course Outline

UNIT I [13 T]

JavaScript: Introduction, Variables, Operators, Functions, Conditional Statements, Looping, Events, JavaScriptFunctions, Build in Functions,JavaScript Comments.

UNIT II [13 T]

Objects in JavaScript, Math Objects in JavaScript, Javascript Units, Hoisting, Strict mode in JavaScript, Strings and numbers,Arrays, Date Objects, JavaScript Errors.

UNIT III [13 T]

JavaScript Forms, Form Validation using JavaScript,JavaScript Type Conversion, Call method in JavaScript,JavaScriptClasses, Inheritance in JavaScript using prototype.

UNIT IV [8 T]

Validation API: Constraint Validation, DOM Methods, HTML DOM: Methods, Document Object, Elements, DOM Events, Event Listener, Navigation, Nodes, Collections, Node Lists;

UNIT V [13 T]

JavaScript Window: Browser Object Model, Window, Screen, Location, History, Navigator, Popup Alert, Timing, Cookies; JS AJAX: XML HTTP Request Object, AJAX Request, Response, XML file.

Reference

1. David Flanagan, JavaScript: The Definitive Guide ,OReilly , Sixth Edition

2. A Smarter Way to Learn Javascript: The New Approach That Uses Technology to Cut Your Effort,20 March 2014,*Author* – Mark Myers, *Latest Edition* – 1st Edition, *Publisher* – CreateSpace Independent Publishing Platform.

3. Web Technologies: HTML, JAVASCRIPT, PHP, JAVA, JSP, ASP.NET, XML and Ajax, Black Book: HTML, Javascript, PHP, Java, Jsp, XML and Ajax, Black Book.
4. Jon Duckett , JavaScript and JQuery: Interactive Front-End Web Development , John Wiley and Sons ,2014

PHP Lab

Course Code: SDC3WT12(P)
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks

JAVA SCRIPT

1. Write a JavaScript program to find the area and circumference of a circle (use form)
2. Write a program to find the sum of the digits and reverse of a number(use form).
3. Write a JavaScript program using 3 dialog boxes(alert, prompt, confirm)
4. Write a JavaScript program for validating the Email registration form.
5. Write a JavaScript program to create a color palette and change the background color (using mouseover event).
6. Write a JavaScript program to change the background color of the document using an array of colors.(Array)

PHP

7. Display the Fibonacci series up to a given number.
8. Write a PHP application to generate the payslip of an employee by accepting name, basic salary and designation. The net salary will be calculated based on the following conditions.

Designation	conveyance allowance	Extra allowance
Manager	1000	500
Supervisor	750	200
Clerk	500	100
Peon	250	
HRA – 25 %		
Conditions for Income tax calculation		
Gross < 2000	0	
2000 < gross < 4000	3%	
4000 < gross < 5000	5%	
Gross > 5000	8%	

    1. Gross= basic + HRA + conveyance + extra
    2. Net = gross – income tax

9. Write an HTML page to display a list of fruits in a list box. Write PHP program to display the names of the fruits which are selected by the user.
10. Write a PHP program to store current date/time in a cookie and display the 'last visited on' date/time on the web page upon reopening of the same page.
11. Write a program to demonstrate session.
12. Write a PHP program to create an array and store 10 names in the array. Do the following operations (no built-in functions are allowed)
    1. Display the contents using for each statement.
    2. Display the array in a sorted order.
    3. Display the array without the duplicate elements
    4. Remove the last element and display
    5. Display the array in reverse order
13. Create a PHP program to display the biodata of a person in a table format, by reading the personal details using an HTML page.
14. Create a table "product" with fields itemcode, itemname, unitprice using MYSQL. Write PHP program to insert records into the table and display the items in a table format.
15. Write a PHP program for insert, delete, update and display operation on account table. The account table contains fields such as accountno, name and amount.
16. Create a MySQL table student with fields roll no, name, mark, grade. Write a PHP program to insert data and display the mark list of a student by accepting the register no of the student.
17. Create a login page using MYSQL database

SQL Lab

Course Code: SDC3WT13(P)
Contact Hours per Week: 3
Number of Credits: 3
Number of Contact Hours: 45
Course Evaluation: Internal – 15 Marks + External – 60 Marks

Course Outline

Lab 1:In this session you need to create database for an Employee management system of an ABC organization. The details about different tables are given below. According to that you can proceed further and create tables using PostgreSQL/ MySQL. Create the following tables with the specified constraints:

Department:
Department name - Not NULL unique
Department number - Primary Key
ManagerId - Refers to employee-id of employee table.
Manager
date of joining - Not NULL.

Employee:
First name -Not NULL
Middle initials
Last name -Not NULL
Employee id -Primary Key
Date of Birth
Address
Gender -M or F
Salary -Range of 5000 to 25000
Date of Joining
Department number Refers to Department Number of Department table.

Department location:
Department number - Refers to Department number of department table.
Department location - Not NULL.
Department number & Department location are combined Primary Key

Project:
Project name-Not NULL.
Project number-Primary Key.
Project location-Not NULL.
Department number-Refers to department number of Department table.

Works-on:
Employee-id - Not NULL refers to employee-id of employee table.
Project number- Not NULL refers to Project number of Project table.
Hours - Not NULL.
Employee-id & Project number are combined primary key.

Dependent:

Employee-id - Refer to employee table employee id field

Dependent name –

Gender - M or F

Date of Birth - Not NULL

Relationship - Not NULL

Now enter a few sets of meaningful data and answer the following queries.

1. List the department wise details of all the employees.

2. Find out all those departments that are located in more than one location.

3. Find the list of projects.

4. Find out the list of employees working on a project.

5. List the dependents of the employee whose employee id is 001

Lab 2:These sessions is similar to the previous one, but in this session, assume that you are developing a database of the College library management system, for that you need to create the following tables:

• Book Records

• Book details

• Member details and

• Book issue details

Book Records:

Accession Number

ISBN Number

Books:

ISBN Number

Author

Publisher

Price

Members:

Member Id

Member Name

Maximum Number of books that can be issued

Maximum Number of days for which book can be issued

Book Issue:

Member Id

Accession Number

Issue Date

Return Date

You must create constraints, including referential integrity constraints, as appropriate. Please note accession number is unique for each book. A book, which has no return date, can be considered as issued book. Enter suitable data into the tables. Now answer the following:

1. Insert data in all the three tables (use insert).
2. Insert appropriate description associated with each table and the column (use comment).
3. Display the structure of the tables.
4. Display the comments that you have inserted.

5. Using SELECT statement, write the queries for performing the following function:
   a) Get the list of all books (No need to find number of copies).
   b) Get the list of all members.
   c) Get the Accession number of the books which are available in the library.
   d) On return of a book by a member calculate the fine on that book.
   e) List of books issued on 01-Jan-2005.
   f) Get the list of all books having price greater than Rs. 500/-
   g) Get the list of members who did not have any book issued at any time.
   h) Get the list of members who have not returned the book.
      a. Display member ID and the list of books that have been issued to him/her from time to time.
   i) Find the number of copies of each book (A book accession number would be different but ISBN number would be the same).
   j) Find the number of copies available of a book of given ISBN number.
   k) Get the member ID and name of the members to whom no more books can be issued, because they have already got as many books issued as the number for which they are entitled.

Lab 3: This session is based on Lab 2 where you have created a library management system. In this session you have different query specification.

1. Get the list of ISBN-Number, Book name, available copies of the books of which available copies are greater than zero.
2. Get the list of ISBN-Number, Book name, Total copies, available copies of the book of which available copies are greater than zero. List should be displayed in alphabetical order of book name.
3. Get the list of ISBN number, Book name, Author, total copies, cost (cost is price total copies). List should be displayed in descending order of cost.
4. Get the list of books issued to each member.
5. Write query to know the maximum and average price of the books.
6. Get the list of all existing members and the number of days for which a member is allowed to keep the book. Also find out the members who have got the maximum number of books issued.
7. Get the list of member codes of those members who have more than two books issued.
8. Find the details of the books presently issued to a member.
9. Create the history of issue of a book having a typical accession number.
10. To set the width of the book name as 35.

Lab 4: Create the following table and perform the necessary tasks defined below one by one.
- Create the following table named customer

  Column name type size

  Customer id Character 10

  Name Character 25

  Area Character 3

  Phone Numeric 7
- Insert the appropriate data into table and do the following.

- Update Phone numbers of all customers to have a prefix as your city STD Code
- Print the entire customer table
- List the names of those customers who have e as second letter in their names.
- Find out the Customer belonging to area abc
- Delete record where area is NULL.
- Display all records in increasing order of name.
- Create a table temp from customer having customer-id, name, and area fields only
- Display area and number of records within each area (use GROUP by clause)
- Display all those records from customer table where name starts with a or area is abc.
- Display all records of those where name starts with a and phone exchange is 55.

Lab 5:Answer the following queries using Library system as created earlier. You must create a view to know member name and name of the book issued to them, use any inbuilt function and operators like IN, ANY, ALL, EXISTS.

    a. List the records of members who have not been issued any book using EXISTS operator.
    b. List the members who have got issued at least one book (use IN / ANY operator).
    c. List the books which have maximum Price using ALL operator.
    d. Display Book Name, Member Name, Issue date of Book. Create a view of this query of the currently issued books.

Lab 6: Create a table of Employee (emp-number, name, dept, salary) and Department (dept number, dept name). Insert some records in the tables having integrity checks. Add some records in employee table where department value is not present in department table. Now answer the following query:

    a. Display all records from employee table where department is not found in department table.
    b. Display records from employee table in a report format with proper headings. This report must also contain those records where department number does not match with any value of department table.
    c. Display those employee records who have salary less than the salary of person whose empcode= A100.
    d. Create another table: SalesData (RegionCode, City, Salesperson- Code, SalesQty).
    e. Display records where salesperson has achieved sales more than average sales of all sales persons of all the regions.

Lab 7: Design necessary tables for storing basic information and salary details of employees of an organization. Design and implement the necessary tables. The tables are Employee(emp-number, name, dept, desigcode) and Emp_Official(Designationcode, designation, basic pay, da, hra, othr allow). Add constraints. Insert some records in the tables having integrity checks.

Write queries to perform the following

    1. Insert values to these tables
    2. Update the values of basic pay, DA and HRA
    3. Delete an employee details.
    4. Create a view to display employee salary details with net pay.

Lab 8: Create a database to store student details like personal academic and extracurricular details of a student. Insert values to these tables with necessary constraints.

    1. Update values 2.Delete student details with a particular condition 3.Create a view to display student biodata.

Lab 9: Write a procedure/trigger on department code so such that the validity of the code is checked and the name of department is automatically displayed on selection of department code. Assume, design and create the necessary tables and constraints.

Lab 10: Write a procedure/trigger to generate Order Number automatically in any of the order tables. Create the following table:

Order: Order number, Item code, Quantity

The key to the second table is order-number + item-code

Semester IV

Entrepreneurship Development

Course Code: A13
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal –20 Marks + External –80 Marks
Objective:
- To familiarize the students with the concept of entrepreneurship.
- To identify and develop the entrepreneurial talents of the students.
- To generate innovative business ideas in the emerging industrial scenario.

Learning outcome:
- Able to understand the nature of entrepreneurship and the financial assistance and guidance from the government.
- Confirm an entrepreneurial business idea
- Explore entrepreneurial leadership and management style.
- Confidence in Setting up of Industrial unit.

Course Outline

UNIT I [12T]

Concepts of entrepreneur: Entrepreneur- Definitions - Characteristics of entrepreneur -Classification of entrepreneur-Entrepreneurial traits -Entrepreneurial functions - role ofentrepreneurs in the economic development - Factor effecting entrepreneurial growth –Entrepreneurship – Meaning – definition - Entrepreneur vs Intrapreneur– WomenEntrepreneurs - Recent development – Problems - Entrepreneurial Development Programmes- Objectives of EDP - Methods of training - Phases of EDP.

UNIT II [12T]

Institutional support and incentives to entrepreneurs- Functions of Department of Industriesand Commerce (DIC) - Activities of Small Industrial Development Corporation (SIDCO)-Functions of National Small Industries Corporation(NSIC)- Functions of Small IndustriesDevelopment Bank of India (SIDBI) - Khadi Village Industry Commission (KVIC)-SmallIndustries Service Institute (SISI)- Functions and services of Kerala Industrial TechnicalConsultancy Organisation (KITCO)-Activities of Science and Technology EntrepreneurshipDevelopment Project (STEDP)-Strategies of National entrepreneurship Development Board(NEDB) -Objectives of National Institute for entrepreneurship and small businessdevelopment (NIESBUD) - Techno park-Functions of techno park Incentives-ImportanceClassification of incentives – Subsidy - Types of Subsidy

UNIT III [12T]

Micro Small and Medium Enterprises- Features- Objectives- Importance- Role of SME in the

economic development- MSME Act 2006- Salient features- Credit Guarantee Fund TrustScheme for MSMEs - Industrial estates-Classification-Benefits- Green channel- Bridgecapital- Seed capital assistance-Margin money schemes –Single Window System- SicknessCauses –Remedies- Registration of SSI

UNIT IV [12T]

Setting up of Industrial unit-(Only Basic study) Environment for Entrepreneurship – Criteriafor selecting particular project- Generating project ideas-Market and demand analysisFeasibility study- Scope of technical feasibility- Financial feasibility- Social cost benefitanalysis-Government regulations for project clearance-Import of capital goods- approval offoreign collaboration-Pollution control clearances- Setting up of micro small and mediumenterprises-Location decision- Significance.

UNIT V [12T]

Project Report - Meaning-Definition - Purpose of project reports-Requirements of good

report - Methods of reporting - General principles of a good reporting system - Performa of a

project report - Sample project report. (The preparation of sample project report shall be

treated as an assignment of this course).

References:

1. Shukla M.B. Entrepreneurship and small Business Management,Kitab Mahal Allahabad.

2. SangramKeshariMohanty, Fundamentals of entrepreneurship,PHI,New Delhi.

3. Nandan H. Fundamentals of Entrepreneurship,PHI, NewDelhi.

4. Small-Scale Industries and Entrepreneurship, Himalaya Publishing ,Delhi

5. C.N.Sontakki,ProjectManagement,Kalyani Publishers, Ludhiana.

6. SangamKeshariMohanty. Fundamentals of Entrepreneurship, PHI, NewDelhi

7. Peter F. Drucker- Innovation and Entrepreneurship.

8. Vasanth Desai, Small Business Entrepreneurship, Himalaya Publications.

9. MSME Act 2006.

Public Health, Sanitation and Safety

Course Code: A14
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal –20 Marks + External –80 Marks

Objective:

- To understand the importance of health and measures taken by the authorities
- To understand the different aspects of hygiene and sanitation.
- To get knowledge on occupational health, safety and environment

Learning outcome:

After learning the course, the students should be able to:
- Identify the diseases associated with occupation
- Identify the hazard in industrial area and propose preventive measures
- Manage safety in industries and propose safety measures and PPE
- Demonstrate the hygiene and sanitation procedures
- Demonstrate the microorganism responsible for the disease and their control

Course Outline

UNIT I [12 T]

Health-Physical, Mental, Social – Positive health– Quality of life Index. **Health programmes:** Health programmes, control measures in operation in India Tuberculosis, poliomyelitis, leprosy, filariasis and diphtheria. Health situation in India– Health Problems-Primary health care in India –PHCs National Programmes for elimination of diseases.–Water borne diseases and air borne diseases. Methods of disease transmission.

UNIT II[12T]

Sanitation: Definition and meaning. Microbial growth pattern and factors affecting microbial proliferation.**Sewage Disposal:** disposal of sewage and night soil–treatment of sewage system
Waste disposal- Disposal of solid waste; Waste water handling: Pre-treatment, primary treatment, secondary treatment, tertiary treatment and disinfection. **Water**– supply sources–impurities and purification of water

UNIT III[12T]

Contamination: Sources of contamination and protection against contamination. **Methods of killing micro-organism-** Useofheat, chemicals and radiation. **Methods of inhibiting microbial growth-** Use of refrigeration, chemicals, dehydration and fermentation **Principlesofhygiene:** General principles of hygiene–its relation to food preparation and food handling habits.**Personnel hygiene-** Meaning and importance; Hygienic practices of employees; personal hygiene and contamination of food products-Sanitation Training and Education for Food Service Workers

UNIT IV[12T]

Food Borne infection, intoxication: Food poisoning– causes and types–Definition, Exotoxin, Endotoxin, intoxications control measures food borne intoxication and infection– sources–effects and prevention. Symptoms and control: *Botulism, Staphylococcus, E.coli and salmonella*. Food

infections– sources, symptoms Methods of Prevention and investigation of food borne disease outbreak

UNIT V[12T]

Occupational Safety, Health and Environment: Definition-safety at work place- safe use of machines and tools-hazard-physical hazard (noise, radiation, fire, Electrical, illumination)-chemical hazard-biological hazard-Personal Protective Equipment - Accident preventive techniques-First Aid-Plant Layout for safety-safety of different sectors

References:
1. Parke.K.2007.Textbook ofpreventiveandSocialMedicine19thEdition,M/s.BanaraisdasisBhanetPublishers,Jabalpur,India.
2. William,C.,FrazierandDennie.CWestheff.1996.FoodMicrobiology4thEdition,TataMcGrahillCompanyLimited
3. S.Roday–FoodHygieneandSanitation
4. M.Jacob.(1989)–SafefoodHandling.
5. V.N.Reinhold–PrinciplesofFoodSanitation
6. B.C.Hobbs&R.J.Gilbert–FoodPoisoningandHygiene.

Introduction to XML

Course Code: GEC4XM11
Contact Hours per Week: 3
Number of Credits: 3
Number of Contact Hours: 45
Course Evaluation: Internal –15 Marks + External –60 Marks
Objective:
- To get an understanding of the XML concepts

Learning outcome:
- Proficient in XML concepts and syntax

Course Outline

UNIT I [9 T]

XML: Introduction, Namespaces, DTD, CSS, XSL; Schemas, Query Language, XLinks, Xpointers, XPath, Digital Signatures, Canonical XML, XHTML, XML Validators: Validating and Non-Validating Parsers.

UNIT II [9T]

Well Formed XML: Basics, Elements, Child Elements, Attributes: Rules, Sharing Attributes, Stylesheet with Attributes; XML Namespaces.

UNIT III[9 T]

DTD: Basics, Definition, DTD Entities, Types of Entities, General Entities, Parameter Entities; XSL: Basics, XSLT Concepts, XSL and XSLT Softwares, Transforming XML with XSLT.

UNIT IV [9 T]

Schema: Basics, Elements, Types, Attributes, Advanced Concepts; XML Query, RDF, XHTML.

UNIT V [9 T]

XML Processor: Introduction, Components of XML Processor, Concept of DOM and SAX, XMLHttpRequest, XMLHttpRequest Object, Events for the XMLHttpRequest Object, Request Object for XMLHttpRequest, Response Object for XMLHttpRequest.

References:

1. Williamson, *XML: The Complete Reference,* Tata McGraw Hill Edition 2001
2. Elliotte Rusty Harold, *XML Bible*, Wiley, 2001
3. Elliotte Rusty Harold and W. Scott, *XML In A Nutshell*, O'Reilly, 3rd Edition

Fundamentals of Audio, Video and Multimedia

Course Code: GEC4AV05
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks
Objective:
- To familiarize with various image, audio and video editing software.

Learning outcomes:
- Digitize and manipulate analog data
- Enhance and manipulate images
- Create your own short movies, edit the existing ones.

Course Outline

UNIT I [15 T]

Multimedia: Introduction, Concept of Hypertext/ Hypermedia, Applications of Multimedia, Multimedia Authoring, Multimedia Hardware; Components of Multimedia: Text, Audio, Image, Video, Various file types: JPEG, MPEG audio and video, BITMAP, GIF, SVG, PNG, MIDI.

UNIT II [15 T]

Sound Forge: Introduction, Interface, Selecting Objects and using Layers, Tooltips, Creating Projects; Working with Audio: Editing Multichannel Audio using Markers, Recording and extracting Audio, Editing, Repairing and synthesizing Audio; Working With Effects.

UNIT III [15 T]

Adobe Premiere: Introduction, Interface, Working with Projects; Capturing and Importing Source Clips, Editing Video, Adding Transitions, Mixing Audio, Creating Titles, Superimposing, Compositing, Animating a Clip, Applying Effects, Producing Final Video.

UNIT IV[8 T]

FormatFactory: Cutting and extracting fragments from a video, converting video into other formats.

UNIT V [7T]

Movie Maker: Develop a movie using Movie Maker.

References:
1. Kindle Edition, *Sound Forge Pro 10.0 in Simple Steps*, Dreamtech Press
2. format factory: *https://www.youtube.com/watch?v=BTGiKX8coc8*
3. Adobe Prem Pro CS6 Classro_p1, Adobe Creative Team, *Adobe Premiere Pro CS6 Classroom in a Book*
4. Zakaria Ahmed Sa'ed, *Basic Format Factory*

Scripting using Python

Course Code: SDC4WT14
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks
Objectives:
- Understand basic principles of computers
- Understand the Python programming basics
- To equip students with an understanding of various data types and control structures
- Understand the object-oriented paradigm, design and development

Learning outcome:
- Problem solving and programming capability.

Course Outline

UNIT I [12 T]

Python: Introduction, Features, Literal, Constants, Numbers, Strings, Identifiers, Naming, Data Types, Objects; Operators and Expressions : Operators, Operator Precedence, Order of Evaluation, Associativity.

UNIT II [12 T]

Control Flow: Decision making (if, if …else, if…elif…else), Loops (while, for, break, continue statements); Functions: Definition, Parameters, Local and Global Variables, Default arguments, Keyword arguments, Return statement, Recursive functions, Lambda functions.

UNIT III [12 T]

Modules: Built-in Modules, Creating Modules, import Statement, Namespaces, Scope, dir(),reload() functions; File Handling: Opening a File, Writing to a File, Closing a File, File Renaming, Deleting a File; Directory Methods: mkdir(),chdir(),getcwd(),rmdir().

UNIT IV [12 T]

Data structures:cIntroduction, List (Storing many different data points under a single namecreate, subset and manipulate Lists), Tuple, Dictionary, Sequences.

UNITV [12 T]

Quick introduction to Objects and Classes: Creating Objects, init() method;OOPS principles: Encapsulation, Data Hiding, Inheritance, Method Overriding, Polymorphism; Exception Handling: try ...except, try…finally, Raising an Exception, User Defined Exception.

References:

1. Y. Daniel Liang, *Introduction to Programming Using Python*, First Edition, Prentice Hall, ISBN-10 0132747189
2. David Ascher and Mark Lutz, *Learning Python*, O'Reilly Publications
3. AahzMaruch and Stef Maruch, *Python for Dummies*, Wiley Publishing Inc, 2006

Web Server Programming using Django

Course Code: SDC4WT15
Contact Hours per Week: 3
Number of Credits: 3
Number of Contact Hours: 45
Course Evaluation: Internal –15 Marks + External – 60 Marks
Objectives:
- To attain familiarity with Django application
- To understand the functionalities
- To learn main building blocks of a Django application.

Learning outcome:
- To learn Django web application framework and get started building Python-based web applications.

Course Outline

UNIT I [9 T]

Django: Introduction, Django Framework, Design principles, Django Components, Installing Django.

UNIT II[9 T]

Model Layer: Models, Field Types, Meta Options, Model Class, QuerySets, Executing Queries, Queryset Method Reference, Migrations: Introduction, Writing Migrations.

UNIT III [9 T]

View Layer: Basics, URLConfs, View Functions, Decorators, Request/Response objects, Class Based Views, File Uploads.

UNIT IV [9 T]

Templates: Template Layer, Built in Tags and Filters, Custom Tags and Filters, Template Loading, render_to_response(), The locals() Trick, Subdirectories in get_template( ), include Template Tag, Template Inheritance .

UNIT V [9 T]

Forms: Basics, Built in Fields and Widgets, Forms for Models, Customizing Validation, Security, Performance and Optimization.

References:

1. Jeff Forcier, Paul Bissex, Wesley J Chun, *Python Web Development with Django*, Addison Wesley
2. Daniel Rubio,*Beginning Django: Web Application Development and Deployment with Python*, Apress, First Edition

Python Scripting Lab

Course Code: SDC4WT16(P)
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks

1. Python Program to Make a Simple Calculator
2. Python Program to Find the Factorial of a Number
3. Python Program to Print the Fibonacci series using recursion
4. Python Program to Check Armstrong Number
5. Python Program to Shuffle Deck of Cards
6. Python Program to Transpose a Matrix
7. Python Program to Add Two Matrices
8. Python Program to Illustrate Different Set Operations
9. Python Program to Check Whether a String is Palindrome or Not
10. Python Program to Check Armstrong Number
11. Python Program to Swap Two Variables
12. Python Program to Check Leap Year
13. Python Program to Accept Three Digits and Print all Possible Combinations from the Digits
14. Python Program to Merge Two Lists and Sort it
15. Python Program to Concatenate Two Dictionaries Into One

16. Python Program to Sum All the Items in a Dictionary
17. Python Program to Count the Number of Words in a Text File
18. Python Program to Read a String from the User and Append it into a File
19. Python Program to Read a File and Capitalize the First Letter of Every Word in the File
20. Python Program to Count the Number of Blank Spaces in a Text File
21. Python Program to Find the Area of a Rectangle Using Classes
22. Python Program to Append, Delete and Display Elements of a List Using Classes
23. Python Program to Create a Class in which One Method Accepts a String from the User and Another Prints it

MiniProject/Internship

Course Code: SDC4WT17(Pr)
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal-20 +External – 80 Marks

Semester V

Introduction to Search Engine Optimization

Course Code: GEC5SE06
Contact Hours per Week: 3
Number of Credits: 3
Number of Contact Hours: 45
Course Evaluation: Internal – 15 Marks + External – 60 Marks
Objective:
- To design web pages to be listed and noticed by search engines effectively

Learning outcome:
- A thorough knowledge on optimization techniques

Course Outline

UNIT I [12 T]

Overview: Types of Websites, Websites vs Portals, Page Rank, Architecture of Websites; SEO: Concept, Needs, Search Engines, Web Traffic, Steps in SEO; Techniques: Black Hat SEO, White Hat SEO.

UNIT II [9 T]

On Page Optimization Techniques: Site Analysis, Meta Tags, Sitemaps, Keyword Research, density, Meta Tags creation, Hyperlink Optimization, Meta Description and Tags Optimization, Text Modification Optimization, Image Optimization, Search Engine Optimization.

UNIT III [11T]

Off Page Optimization: Backlinks, Blog Marketing and Commenting, Forums Posting, Blog Posting, Search Engine Submission, XML Site Maps Submission, Customer Review Submission, Press Release Submission.

UNIT IV [8 T]

Digital Marketing: Digital Display Marketing, e-mail Marketing, Mobile Marketing, Search Engine Marketing.

UNIT V [5T]

Social Media Marketing and Advertisements: Introduction to Social Media, Benefits of Social Media, Business Promotion with Social Media, Case Studies.

References:

1. Eric Enge, Stephan Spencer, Jessie Stricchiola, *The Art of SEO: Mastering Search Engine Optimization*, O Reily, Second Edition
2. Varinder Taprial, Priya Kanwar, *Search Engine Optimization: HandBook of easy tools and tips.*, Pustak Mahal, First edition
3. Ian Dodson, *The Art of Digital Marketing: The Definitive Guide to Creating Strategic, Targeted, and Measurable Online Campaigns*, Wiley 2016
4. Seema Gupta, *Digital Marketing*, McGraw Hill Education, 2018

Quality Assurance in Software

Course Code: GEC5QA07
Contact Hours per Week:3
Number of Credits: 3
Number of Contact Hours: 45
Course Evaluation: Internal – 15Marks + External – 60 Marks
Objective:
- To understand the needs for verification and validation activities in system development

Learning outcome:
- To be a quality assurance analyst

Course Outline

UNIT I [13 T]

Fundamentals of Software Quality: Software, Software Errors, Faults and Failures, Classification of the Causes of Software Errors, Definition of Software Quality; Software Quality Assurance: Definition, Objectives, Uniqueness of Software Quality Assurance, Software Quality Assurance and Software Engineering; Software process models.

UNIT II [13 T]

Software Quality Factors: Need for Software Quality Requirements, Classification of Software Requirements into Software Quality Factors, Product Operation Software Quality Factors, Product Revision Software Quality Factors, Product Transition Software Quality Factors, Software Compliance with Quality Factors.

UNIT III [13T]

SQA Components in the Project Life Cycle, Integrating Quality Activities in the Project Life Cycle: Classic and Software Methodologies, Factors Affecting Intensity of Quality Assurance Activities in the Development Process, Verification, Validation, Qualification.

UNIT IV [13 T]

Software Testing: Strategies, Classifications, White Box Testing, Black Box Testing; Software Testing Implementation: Testing Process, Test Case Design, Automated Testing, Alpha and Beta Site Testing Programs.

UNIT V [8T]

Case studies on any 3 Automated Testing Softwares currently used.

References:

1. Daniel Galin, *Software Quality Assurance: From Theory To Implementation*, Pearson Education India, 2014
2. Murali Chemuturi, *Mastering Software Quality Assurance: Best Practices, Tools and Techniques for software developers*, J. Ross Publishing, 2010

Content Management System

Course Code:SDC5WT18
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks

Objective:
● To create highly-tailored dynamic web content..

Learning outcome:

● Ability to create and deploy websites using CMS, including creating and editing content, adding functionality, and creating custom templates and themes.

Course Outline

UNIT I [13 T]

Introducing Content Management Systems:Exploring CMS terminology, including open source, PHP, MySQL, server-side, client-side, static HTML website, CMS web pages generation. Website strategy and planning, site mapping, content planning.

UNIT II[13 T]

Types of Content Management Systems:Enterprise Content Management System (ECMS): Benefits, components, implementation, stages.Web Content Management System (WCMS): Capabilities, types, advantages, disadvantages.

UNIT III [13 T]

Introduction to Joomla:Introduction :Content creation using the CAM model, Content customization: images, video, audio, tags, formats, etc. ,Adding and displaying menus, Linking menus to articles and other features.Extending Joomla,Creating customized Joomla templates, Modifying Joomla CSS and HTML parameters,Tweaking the Joomla backend, Mobile considerations.

UNIT IV [13 T]

Introduction to WordPress: WordPress.org vs. WordPress.com,Installing WordPress
Exploring the admin interface, Content creation: Posts vs. Pages, Content customization: images, video, audio, tags, formats, etc.,Extending WordPress

UNIT V [8 T]

Case study: Build a Joomla website, Build a WordPress site

References:
 1) *Managing Enterprise Content: A Unified Content Strategy*. Ann Rockley, Pamela Kostur, Steve Manning. New Riders, 2003.

2) *The content management handbook*. Martin White. Facet Publishing, 2005.

Introduction to Cross Platform Website Applications
Course Code: SDC5WT19
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks

Objective:

- Learn how to build Angular JS, Node, JS and ReactJS applications through a number of hands-on applications.

Learning outcome:

- To make efficient in Building powerful, fast, user-friendly and reactive web apps

Course Outline

UNIT I [12 T]

Introduction to Angular JS: Definition & Importance of Angular JS, MVC Architecture, Providers, Validators, Directives, Expressions, Controllers, Filters, Modules, Services, Dependency injection.

UNIT II [12 T]

Introduction to Node.js: Meaning &Importance of Node.js, Node.js Packages. Node.js Modules, Node.js HTTP Module, Node.js File System, Node.js URL Module, Node.js NPM, Node.js Events, Node.js Buffers, Node.js Streams, Node.js Utility Modules.

UNIT III [12 T]

Synchronous and Asynchronous Methods: Querying, Reading from and Writing to Files, Creating and controlling external processes, Reading and writing Streams of Data, Building HTTP Servers; Building and Debugging modules and applications: Testing Modules and Applications, Debugging Modules and Applications.

UNIT IV [12 T]

Introduction to React.JS: Environment Setup of React.JS, JSX, Components, State, Props Overview, Props Validation, Component API, Component Life Cycle.

UNIT V [12 T]

React.JS Essentials: Forms, Events, Refs, Keys, Router, Flux concept, Animations, Higher Order Components.

References:

1. Brad Green, ShyamSeshadri,*Angular JS,*O'Reilly,2013.
2. Accomazzo Anthony, Murray Nathaniel, Lerner Ari, *The Complete Guide to ReactJS and Friends,*Fullstack React, 2017.
3. Shelley Powers, *Learning Node: Moving to the Server-Side*, O'Reilly, 2016.
4. Greg Sidelnikov, *React. Js Book: Learning React JavaScript Library from Scratch,*Independent Publication,2017.
5. Vipul A M,PrathameshSonpatki, *React Js by Example: Building Modern Web Application with React*, Packt Publishing Ltd, 2016.

Ruby on Rails

Course Code: SDC5WT20
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks
Objectives:

- Understand the Rails Framework
- Harness the speed and ease of developing a Rails application
- Create and use Ruby in Rails applications
- Create and use XML in Rails applications
- Use Ajax in Rails applications

Learning outcome:

- Enable students to Build dynamic database-driven web sites.

Course Outline

UNIT I[12 T]

Introduction to Ruby: Origin and Uses of Ruby, Variables, Scope and Visibility, Constants, Operators, Flow Control, Fundamentals of Arrays, Hashes, Date and Time, Ranges, Iterators, Methods, Comments, Exceptions.

UNIT II [12 T]

Object Oriented Program: Classes and Objects, Modules, Blocks, File, Input and Output Operations, Ruby Access Modifiers, Built-in-Functions, Regular Expressions, Multithreading, Ruby/XML, XSLT and XPath.

UNIT III[12 T]

Connectivity: Call Back, Database Access, Code blocks with Methods, Sending email application, Metaprogramming, Web Services, Ruby/LDAP, Ruby Tools, Gems for Command Line Apps.

UNITIV[12 T]

Introduction to Rails: Ruby on Rails Directory Structure, Rails Bundler, Bundler Version, Migrations, Purpose of Migrations, Creating Migration File, Rails Router, RESTful Routes, Creating a Route, Resource Routing, Resources on the web, CRUD, Verbs and Actions, Path and URL Helpers, Defining Multiple Resources at the same time, Singular Resources, Controller Namespaces and Routing, Nested Resources, Routing Concerns, Creating Paths and URLs from Objects, Adding more RESTful Actions, Non-Resourceful Routes.

UNIT V[12 T]

Rails Tools :Rails Scaffolding,Rails Session, Rails File Upload, Rails Layout,Rails Filters, Rails Testing,Rails Caching, Rails Validation, Rails AJAX, Rails Database.

References:

1. Michael Hartl,*Ruby on Rails Tutorial: Learn Web Development with Rails,*Addison-Wesley Professional, 2016.
2. Michael Hartl,*Ruby on Rails 3 Tutorial: Learn Rails by Example,*Pearson Education, 2010.
3. David A. Black, *Ruby for Rails: Ruby Techniques for Rail Developers,*Dreamtech Press, 2006.

Cross Platform Website Lab

Course Code: SDC5WT21 (P)

Contact Hours per Week: 4

Number of Credits: 4

Number of Contact Hours: 60

Course Evaluation: Internal – 20 Marks + External – 80 Marks

Learning outcome:

Practical knowledge of Angular.JS, Node.JS, React.JS.

CourseOutline

1. Demonstrate Angular JS application
2. Demonstrate Angular JS directives
3. Demonstrate Angular JS expressions
4. Demonstrate Angular JS controllers
5. Demonstrate Angular JS filters
6. Demonstrate Angular JS Modules
7. Demonstrate Node. JS application
8. Demonstrate events in Node.JS
9. Demonstrate buffers in Node.JS
10. Demonstrate modules in Node.JS
11. Demonstrate files in Node.JS
12. Demonstrate streams in Node.JS
13. Demonstrate React.JS application
14. Demonstrate props in React.JS
15. Demonstrate flux in React.JS
16. Demonstrate forms in React.JS
17. Demonstrate events in React.JS

Ruby Lab

Course Code: SDC5WT22(P)

Contact Hours per Week: 4

Number of Credits: 4

Number of Contact Hours: 60

Course Evaluation: Internal – 20 Marks + External – 80 Marks

Learning outcome:

PracticalknowledgeofRuby on Rails.

Course Outline

1. Demonstrate Ruby application
2. Demonstrate classes and objects in Ruby

3. Demonstrate Modules with Methods.
4. Demonstrate functions in Ruby
5. Demonstrate flow controls in Ruby
6. Demonstrate files in Ruby
7. Demonstrate hashing in Ruby
8. Demonstrate constants in Ruby
9. Demonstrate exceptions in Ruby
10. Demonstrate email-sending
11. Demonstrate directory structure on Rails
12. Demonstrate Active records on Rails
13. Demonstrate migration on Rails
14. Demonstrate controllers on Rails
15. Demonstrate Scaffolding on Rails

Content Management System Lab

Course Code: SDC5WT23 (P)
Contact Hours per Week: 4
Number of Credits: 4
Number of Contact Hours: 60
Course Evaluation: Internal – 20 Marks + External – 80 Marks
Learning outcome:

Practicalknowledgeof Content Management System.

Course Outline

1. Content creation with WordPress
2. Add images and other media with a CMS
3. Build a website using Wix
4. Familiarization of Squarespace CMS platform
5. Content creation in PHP with Drupal
6. Publish web content with Joomla
7. Demonstrate data storage using MySQL in CMS
8. Demonstrate the use of content editor
9. Familiarization of templates in Webflow CMS
10. Website creation using Joomla and WordPress

Semester VI

Internship and Project

Course Code: SDC6WT24 (Pr)
Number of Credits: 28

Term Paper

Number of Credits:2

Model Question Paper

Question Paper Type I

B.Voc Web Technology
Model Question Paper
GEC2DH06: Theory of Domain and Hosting

Time: 2.5 hours **Total: 80 Marks**

Section A

Answer all the questions. Each question carries 2 marks. **(Ceiling- 25marks)**

1. Differentiate between expiry time and negative caching time in an SOA record.
2. List the advantages of subdomains.
3. What is the use of serial number in an SOA record? List its three formats.
4. Explain the format of IPv4 and give an example of a valid IPv4 address.
5. What is the function of the authoritative name server?
6. What are the objectives of SSL?
7. Mention the disadvantages of shared hosting.
8. Explain how FTP transfers files statefully.
9. Mention some features of the nginx server.
10. What is the role of a domain name registrar?
11. What services are offered by web hosting providers?
12. Briefly explain the characteristics of static websites.
13. How can we ensure scalability in a domain namespace?
14. What is a DNS zone?
15. To which class does IP address "216.93.158.12" belong?

Section B

Answer allquestions. Each question carries 5 marks. **(Ceiling -35 marks)**

16. Explain the parts in a resource record.
17. Explain the three types of Top-level domains.
18. a) Differentiate between a flat namespace and hierarchical namespace.
    b) Construct a sample domain namespace
19. Elaborate on the characteristics of VPS hosting.
20. Write a note on class A IP addresses. Provide an example.
21. Explain the usage of a PTR record in reverse DNS mapping.
22. Write a note on the web server and its working.
23. Elaborate on the HTTP Request/Response architecture.

Section C

Answer any *two* questions. The question carries 10 marks. **(2 × 10 = 20 marks)**

32. Explain the components and process involved in DNS resolution with the help of a diagram.
33. a) Define zone transfers
    b) Define the format of SOA records, and explain the various parameters.
    c) Provide an example SOA record.
34. a)How can we protect a website against common cybersecurity issues?
    b) Explain the advantages of the Apache web server.
35. a) What is domain hijacking? What are the different ways to perform domain hijacking?
    b) Explain the various types of servers based on their functionality.

Question Paper Type II

B.Voc Web Technology
Model Question Paper
GEC3VC08: Theory of Version Control

Time: 2 hours   **Total: 60 Marks**

Section A
Answer all the questions. Each question carries 2 marks.   **(Ceiling-20 marks)**

1. What is the role of logs in a Version Control System?
2. How are repositories addressed in SVN?
3. What is the conventional repository layout in Subversion?
4. What is the svn checkout command used for?
5. Why are tags used in a project?
6. Differentiate between an input stream and output stream.
7. What is an API? Name some examples and their usage.
8. While planning a repository structure, what decisions should an admin make?
9. What is deltification and why is it important?
10. What is the disadvantage of path-based authorization?
11. Explain the use of the --dry-run option.
12. What is the svn delete command used for?

Section B
Answer allquestions. Each question carries 5 marks.   **(Ceiling- 30 marks)**

13. What are the three types of Version Control Systems? Explain with diagram.
14. Explain the components in Subversion.
15. Explain the differences between the two versioning models.
16. What is a revision? Differentiate between file-level revision and global revision.
17. With the help of an example, explain the architecture of Subversion.
18. Explain the various programs used for repository maintenance.
19. What is Authentication? How is it performed in Apache httpd?

Section C
Answer any *one* question. Each question carries 10 marks.   **(1 × 10 = 10 marks)**

20. List the features of SVN.
21. Explain the process of repository replication.