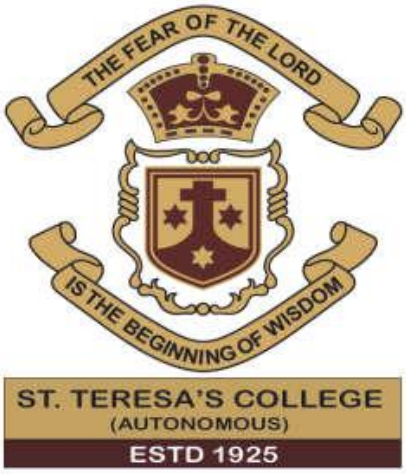
ST.TERESA'S COLLEGE (AUTONOMOUS)
ERNAKULAM

(Affiliated to Mahatma Gandhi University, Kottayam)



CURRICULUM AND SYLLABI FOR
B.VOC PROGRAMME IN SOFTWARE DEVELOPMENT

Under Credit & Semester System

(2018 Admissions)

St. Teresa's College, (Autonomous)

Department of Computer Applications

Board of Studies in Computer Applications

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18.	Ms.Mahima Mary Mathews	Assistant Professor ,Department of Computer Applications, St.Teresa'sCollege,Ernakulam	Member
19.	Mrs.Annie Merlyn Rodrigues	Assistant Professor ,Department of Computer Applications, St.Teresa'sCollege,Ernakulam	Member

FOREWORD

Autonomy in the field of higher education implies responsibility and accountability and this in turn leads to excellence in academics and pro active governance. St Teresa's College was given autonomous status in the year 2014 and we have made a concerted attempt to maintain a high level of quality in the standard of education that we impart.

Academic autonomy has granted us the freedom to fine tune the syllabus keeping in mind the changing needs of the new generation of students. Education in the current scenario throws up a multitude of challenges and the curricula and syllabi ought to reflect the paradigm shift that has occurred in the various disciplines. Structured feedback was taken from the Students, Alumni and the experts from the industry and the changes suggested by them were duly incorporated in the syllabi.

The Board of Studies constituted for each department meet regularly in the stipulated time frame and in depth discussions are conducted about the different dimensions of the curricula and syllabi. The IQAC team has felicitated the conduct of a number of workshops and conferences to equip the faculty with the necessary skill set to frame the syllabi, set question papers for internal tests that evaluate whether the learning outcomes enlisted in the syllabus have been achieved and to ensure the fair and transparent conduct of examinations.

The responsibility that autonomy has placed on us is indeed onerous but we have strived together to meet all the challenges that were placed in our way. We have worked towards moulding young women as responsible citizens who will carry forward the task of nation building in an exemplary manner. All effort has been made to nurture their academic ambitions as well as their skills in co curricular activities.

With sincere gratitude I acknowledge the instinct support and constant guidance extended by Rev. Sr. Dr. Vinitha, the Director of the College.

I specially thank the teamheaded by Smt. Shanty B. P.for updating the *syllabi*, the Heads of the Departments and all the faculty members for their diligence, commitment and exceptional contribution towards this endeavour.

DR. SAJIMOL AUGUSTINE. M

PRINCIPAL

Preface

As an autonomous college under Mahatma Gandhi University, St. Teresa's College has taken conscientious efforts to strengthen the curriculum by retaining all the fundamental stipulations of the University/Higher Education Council, to ensure a well-balanced Curriculum.Within the constraints of a prescribed syllabus, we have resolved to take a collective effort to create an inspiring academic culture in the institution, essential for teachers and students to access deeper knowledge and participate in its expansion and transmission. It is also to re-articulate the almost lost or forgotten fact that production and transmission of Quality Knowledge, essential for the development of students in particular and society in general, are the primary functions of any Educational Institution.

The Syllabus restructuring of 2018 aims to provide the students many opportunities to engage with authentic, real world learning. This has been evident through the significant number of new Programmes introduced at the wake of autonomy in 2014with their integral placement opportunities. Increasingly, however, opportunities for engagement in work-based learning that can be provided through the curriculum across a range of subject areas are creating new and exciting ways to support student learning.

I acknowledge the efforts taken by the teachers in developing Programme and Course outcomes that focus on cognitive and intellectual skills of the learners ,confidence to carry out independent and scholarly research in area of professional interest to them and to position themselves globally effective cross- cultural educators .

I congratulate the efforts taken by the Principal Dr. Sajimol Augustine M. and the team for restructuring the syllabi under the leadership of Smt. Shanty B.P in a meaningful manner. Transformation is what makes St. Teresa's distinctive. Transforming lives in order to make a real impact on the local and international stage through the creation, sharing and application of knowledge. We look forward to sharing with you the outcomes of our curriculum restructuring and these resources we hope will enable you to reflect on learning gain in our own institution.

DR. SR. VINITHA (CELINE E)

DIRECTOR

ACKNOWLEDGMENT

The syllabus restructuring of the Bachelor in computer Applications[Triple Main] programme would not have been possible without the guidance and the help of several individuals who in one way or other contributed and extended their valuable assistance in the preparation and completion of this work.

The Board of Studies in Department of Computer Applications takes this opportunity to express our deep appreciation to all academicians and professionals who participate in the workshops organized by St. Teresa's College (Autonomous) for restructuring the UG Course in Department of Computer Applications.I remember with gratitude the support of our Director, Rev. (Dr). Sr. Vinitha, Principal, Dr. Sajimol Augustine. M, Prof. Jogy Alex, Dept. of Chemistry, St. Thomas College, Pala and the members of syllabus revision committee during the syllabus restructuring process.

I am grateful to the Board of Studies members of the Department of Computer Applications for their valuable insights and guidance throughout the process.

I am indebted to the faculties of Department of Computer Applications for their kind co-operation in all phases of this syllabus restructuring process.

We place on record our gratitude to the Syllabus Restructuring committee headed by Smt. Shanty B P, Assistant Professor of Department of Statistics, for the timely and valuable guidance. We express our whole- hearted gratitude to all those who have helped us in this endeavor.

Dr.Sabu M K

Chairman, Board of Studies

Department of Computer Applications

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PREAMBLE

UGC SPONSORED B.VOC PROGRAMMES

The University Grants Commission (UGC) had launched a scheme on 27 February, 2014 for skills development based higher education as part of college/university education, leading to Bachelor of Vocation (B.Voc.) degree with multiple entry and exit points. Considering the implementation modalities, the guidelines of the scheme have been revised in the year 2015. The B.Voc. programme is focused on universities and colleges providing undergraduate studies which would also incorporate specific job roles and their NOSs along with broad based general education. This would enable the graduates completing B.Voc to make a meaningful participation in accelerating India's economy by gaining appropriate employment, becoming entrepreneurs and creating appropriate knowledge.

Objectives

1. To provide judicious mix of skills relating to a profession and appropriate content of general education.

2. To ensure that the students have adequate knowledge and skills, so that they are work ready at each exit point of the programme.

3. To provide flexibility to students by means of pre-defined entry and multiple exit points.

4. 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.

5. To provide vertical mobility to students coming out of
    a) 10+2 with vocational subjects;
    b) Community Colleges.

Governance and Coordination

An Advisory Committee will be set-up for effective governance and coordination of the courses under the scheme. The Advisory Committee will include the representative(s) of the affiliating university, relevant industries, relevant Sector Skills Council(s), and Nodal Officer of B.Voc Scheme. The Vice Chancellor of the university or his Nominee or Principal of the college, as the case may be, will be the Chairman of the Advisory Committee and the Nodal Officer will be the Member-Secretary. The Committee will meet periodically to review the functioning of the courses, as and when required, but at least once in six months. The Advisory Committee will also ensure the timely submission information to UGC and uploading of data in Skill Development Monitoring System (SDMS). Nodal Officer will submit quarterly progress report to UGC and copy of the same may also be endorsed to Head, Standards & Q.A., National Skill Development Corporation, Block A, Clarion Collection, ShaheedJeet Singh Marg, New Delhi - 110016.

Assessment

a. The Skill component of the course will be assessed and certified by the respective Sector kill Councils. In case, there is no Sector Skill Council for a specific trade, the assessment may be done by an allied Sector Council or the Industry partner. The certifying bodies may comply with and obtain accreditation from the National Accreditation Board for Certification Bodies (NABCB) set up under Quality Council of India (QCI). Wherever the university/college may deem fit, it may issue a joint certificate for the course(s) with the respective Sector Skill Council(s).

b. The credits for the skill component will be awarded in terms of NSQF level certification which will have 60% weightage of total credits of the course in following manner.

Name of the Course	NSQF Level Certificate	Cumulative Credits
Certificate	Level – 4	18 credits
Diploma	Level – 5	36 credits
Advanced Diploma	Level – 6	72 credits
B.Voc Degree	Level – 7	108 credits

c. The general education component will be assessed by the concerned university as per the prevailing standards and procedures. The following formula may be used for the credit calculation in general education component of the courses:

i. General Education credit refers to a unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work/field work per week. Accordingly, one Credit would mean equivalent of 14-15 periods of 60 minutes each or 28 – 30 hrs of workshops / labs.

ii. For internship / field work, the credit weightage for equivalent hours shall be 50% of that for lectures / tutorials.

iii. For self-learning, based on e-content or otherwise, the credit weightage for equivalent hours of study shall be 50% of that for lectures / tutorials.

GRADUATE ATTRIBUTES

Job Roles proposed to be covered in each year (Along with NSQF level)

Semester / Year	NSQF Level
First Semester	**Level 4** 1. Collections Executive NOS REFERENCE ID: SSC/Q2214 Individuals in this job are responsible for reconciliation of customer accounts through payment follow ups, sending payment reminders, investigating and solving customers' problems, which may lead to delay in payments, communicate the right information to the customers. 2. Domestic Data Entry Operator NOS REFERENCE ID: SSC/Q2212 Maintain proper entry of required data of customers through use of various data entry softwares and techniques. 3. Domestic IT Helpdesk Attendant NOS REFERENCE ID: SSC/Q0110 Managing and resolving client queries / issues primarily through telephonic calls.
Year 1	**Level – 5** **Web Developer** NOS **REFERENCE ID:** SSC/ Q 0503 Individuals at this job are responsible for designing and maintaining web-based applications that include static and dynamic content. This includes the design, layout and coding of a website. 1. **Test Engineer** NOS **REFERENCE ID:** SSC/ Q 1301 Individuals in this job are responsible for development and coordination of scheduled and unscheduled test plans and conducting software compatibility tests with

	programs, hardware, operating systems, or network environments. The job involves documenting, reporting and tracking software defects using manual testing software. 2. **Technical Writer** NOS **REFERENCE ID:** SSC/ Q 0505 Individuals at this job are responsible for creating technical documentation related to an application like job-aids, help documents and training materials. These documents serve the core purpose of transferring knowledge between the application development teams and the user teams. The information may be presented in the form of user guides for software applications, reference manuals, training guides or online help incorporated into software and operating guides. • Office Assistant : Administrative tasks, word processing jobs and maintaining records in an office. • DTP Operators :Operates office equipment such as printers, copy machines. • Data Entry Operators :Can handle databases for effective data manipulation. • Akshaya e-centre personnel :Giving e-literacy training to ASHA worker, Anganvadi worker etc. o Providing Assistance to common people for using the facilities like e-governance, e-payment etc.
Year 2	**Level – 6** 1. Master Trainer for Junior Software Developer NOS REFERENCE ID: SSC/Q0509 Major responsibility being to prepare trainees and enable them to procure, and perform to a reasonable extent, at entry level jobs that exist in the IT Services Industry. 2. Entrepreneurship : Enable students to participate and pursue entrepreneurial opportunities arising out of e-governance. 3. Business Process Outsourcer : Enable to undertake and carry out data processing activities in computerized environments. Analyze business operations, trends, costs, revenues, financial commitments. 4. Website Developer :Able to develop websites for various applications. 5. Software Tester : Able to carry out Software testing and debugging activities.

	6. Documentation support : Involvement in preparation and training of software manuals. 7. Mobile Application Developer : Developing various mobile applications. 8. Data Analyst : Data analysis and Management Information system. 9. System Admin : IT administration
Year 3	**Level - 7** 1. Analyst NOS REFERENCE ID: SSC/ Q 0701 Individuals at this job understand the client's business requirements and translate them into technology requirements for the technology consultants. They act as facilitators in the process of solutioning and development of the end product/service. 2. Application Maintenance Engineer NOS REFERENCE ID: SSC/ Q 0201 Individuals at this job are responsible for ensuring the availability of an application or product for end users. Such roles provide on-going/ad-hoc support for software products or customized applications aimed towards correction of faults/bugs or improvement of performance 3. Deployment Engineer NOS REFERENCE ID: SSC/ Q 0301 Individuals at this job are responsible for ensuring that software systems are fully deployed, implemented and functioning and are configured with the appropriate hardware requirements. 4. Engineer Trainee NOS REFERENCE ID: SSC/ Q 0507 Individuals at this job are responsible for supporting the work area/domain they are aligned to by assisting in performing the key activities and tasks involved. 5. Junior Data Associate NOS REFERENCE ID: SSC/ Q 0401 Individuals at this job are responsible for designing and implementing processes and layouts for complex, large-scale data sets used for modeling, data mining, and research purposes. Responsibilities also include designing and implementing statistical data quality procedures around new data sources. 6. Language Translator NOS REFERENCE ID: SSC/ Q 0506 Individuals at this job are responsible for translating software into different languages that end-users may be

	well-versed with. These extend beyond regular language translator roles as they require understanding of the software languages and platforms. 7. QA Engineer NOS REFERENCE ID: SSC/ Q 1302 Individuals in this job are responsible for coordination with the support and operations teams to maintain quality related schedules like audits, records and reports. The job involves setting quality standards for products, systems and processes within the organisation, followed by ensuring their effective implementation. 8. UI Developer NOS REFERENCE ID: SSC/ Q 0502 Individuals at this job are responsible for creating complex user interfaces for a variety of applications, such as computer programs, databases and websites. 9. Software Developer NOS REFERENCE ID**:** SSC/ Q 0501 Individuals at this job are responsible for development of software applications and interfaces as well as enhancements to existing packaged applications or pre-engineered templates. The job also involves providing support to custom applications, debugging, maintenance and documentation. 1. Document Analyst :organise, analyse, synthesise and summarise information using appropriate analytical methodologies. He/she needs to prepare companies profiles, conducts financial analysis & valuations, benchmarking, collect data using techniques such as questionnaires, surveys, interviews and electronic data collection as part of the job. 2. Software Developer :Pursue opportunities in software development firms in various positions. 3. Entrepreneurship :Pursue self-employable opportunities in business process services. 4. Software Analyst :Can carry outSoftware Project planning activities. 5. Software Tester :Software coding testing and debugging. 6. Technical Writer : Prepares manuals and online help **7.** Software Consultant

Reference :http://www.nsdcindia.org/nos

AIMS AND OBJECTIVES

Information Technology (IT) industry in India is one of the fastest growing industries. Indian IT industry has built up valuable brand equity for itself in the global markets. IT industry in India comprises of software industry and information technology enabled services (ITES), which also includes business process outsourcing (BPO) industry.

Even the Government of India initiated a new move called *Digital India* to ensure that government services are made available to citizens electronically by improving online infrastructure and by increasing internet connectivity. All the enterprises and companies are automating their services, thus resulting a huge requirement of professionally and vocationally qualified and skilled workforce in almost all sectors including finance, Media and entertainment , research etc.

PROGRAMME DESIGN

The B.Voc (SOFTWARE DEVELOPMENT) is designed in such a way that at the end of three years the student will be awarded a B.Voc. Degree and pursue the job roles of , Analyst, Application Maintenance Engineer, Deployment Engineer, Engineer Trainee,Junior Data Associate , Language Translator, QA Engineer etc.

However at the end of second and first year they will be awarded Advanced diploma and diploma respectively and they can seek jobs in low level management areas.

wards	**Duration**
Certificate	6 Months
Diploma	2 Semesters (after Ist year)
Advanced Diploma	4 Semesters (after 2nd year)
Degree	6 Semesters

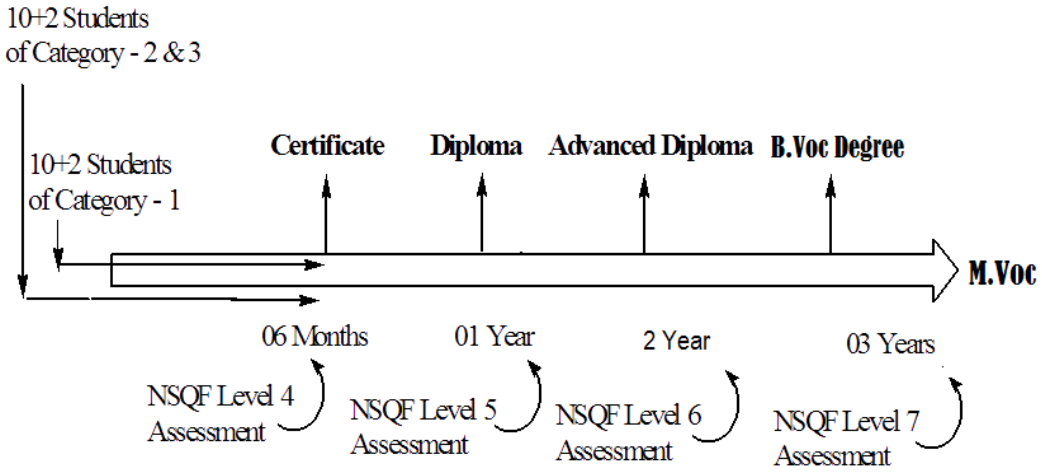

Figure 1 : Assessment of Skill Component under NSQF in Vocational Courses

Cumulative credits awarded to the learners in skill based vocational courses.

NSQF Level	Skill Component Credits	General Education Credits	Total Credits for Award	Normal Duration	Exit Points / Awards
4	18	12	30	One Sem.	Certificate
5	36	24	60	Two Sem.	Diploma
6	72	48	120	Four Sem.	Advanced Diploma
7	108	72	180	Six Sem.	B.Voc Degree

The curriculum in each of the years of the programme would be a suitable mix of general education and skill development components. As is evident from Table 2 above, the General Education Component shall have 40 % of the total credits and balance 60% credits will be of Skill Component. The Curriculum details should be finalized before introduction of the courses.

Levels Of Awards

B.Voc Software Development is a programme with multiple Exit points.

Awards	Duration
Certificate	6 Months
Diploma	2 Semesters (after Ist year)
Advanced Diploma	4 Semesters (after 2nd year)
Degree	6 Semesters

COURSE CODE FORMAT

All character Course code is assigned to each course. The first character indicates the discipline, second and third character indicates the programme, fourth for semester, fifth for course category, next two characters for serial no of the course , eighth character specifies the type of course, ninth specifies the degree 18 to indicate the year.

Eg :**VSD1G01B18**

V → Vocational Studies

SD →**Software Development**

1 → Semester 1

A / G / S → Common (**A**) / General Component (**G**) / Skill Component (**S**)

01 → serial no of the course

P →**P**racticals

B / M →**B**achelor's / **M**aster's

18 → Indicates the year 2018

Nature Of The Course

i. No open course is envisaged
ii. No Electives are included
iii. Total credits is 180
iv. Working hours per week is 30 hours
v. All vocational subjects are treated as core course.
vi. Multiple exit points are permitted.

PROGRAMME STRUCTURE

The B.Voc Software Development shall include:

a) Language courses (English and French)
b) General Education Components
c) Skill Components
d) Internship
e) Field Visits
f) Project
g) Soft Skills and Personality Development Programmes
h) Study tours

Model III – B.Voc Software Development

A	Program Duaration	6 Semesters
B	Total Credits required for successfulcompletion of the Programme	180
C	Credits required from Common Course I	8
D	Credits required from Skill course and General courses includingProject	172
E	Minimum attendance required	75%

SCHEMES OF COURSES

The different types of courses and its number is as follows:

Common Course	2
General Components	16
Skill Components	25
Internship	3
Project	1

Courses With Credits

Sl.NO	Courses	No	Credits
1.	Language courses (English and French)	4	16
2.	General Education Components	15	56
3.	Skill Components	24	91
4.	Internship	3	11
5.	Main Project	1	6
Total		**47**	**180**

Duration Of The Course

- The duration of U.G. Programmes shall be 6 semesters.
- A student may be permitted to complete the programme, on valid reasons, within a period of 12 continuous semesters from the date of commencement of the first semester of the programme.
- Attendance: Students having a minimum of 75% average attendance for all the courses only, can register for the examination.

SRUCTURE OF THE PROGRAMME
B.Voc.Software Development (Model III)

SEMESTER	COURSE TYPE	COURSE CODE	COURSE TITLE	HRS/WEEK	CREDITS	MAX.MARKS	
						ISA	ESA
I	**COMMON COURSE - I**	**EN1A01B18**	FINE-TUNE YOUR ENGLISH	**4**	**4**	**20**	**80**
	GENERAL	**VSD1G01B18**	LE FRANÇAIS ÉLÉMENTAIRE	**4**	**4**	**20**	**80**
	GENERAL	**CA1B01B18**	COMPUTER FUNDAMENTALS AND DIGITAL PRINCIPLES	**4**	**4**	**20**	**80**
	SKILL	**VSD1S01B18**	FINANCIAL ACCOUNTING	**4**	**4**	**20**	**80**
	SKILL	**VSD1S02B18**	PROBLEM SOLVING TECHNIQUES	**4**	**4**	**20**	**80**
	SKILL	**CA1B02B18**	METHODOLOGY OF PROGRAMMING AND C LANGUAGE	**3**	**3**	**20**	**80**
	SKILL PRACTICAL	**VSD1SP01B18**	S/W LAB – I (PROGRAMMING IN C LANGUAGE)	**4**	**4**	**20**	**80**
	SKILL PRACTICAL	**VSD1SP02B18**	S/W LAB – II (MS OFFICE/ PHOTOSHOP)	**3**	**3**	**20**	**80**
TOTAL HOURS AND CREDITS FOR SEMESTER – 1				**30**	**30**		
II	**COMMON COURSE - I**	**EN2A0BB18**	ISSUES THAT MATTER	**4**	**4**	**20**	**80**
	GENERAL	**VSD2G02B18**	LE FRANÇAIS INTERMEDIAIRE	**4**	**4**	**20**	**80**
	GENERAL	**VSD2G03B18**	COMPANY LAW	**4**	**4**	**20**	**80**
	SKILL	**MT2C03B18**	BASIC MATHEMATICS	**4**	**4**	**20**	**80**
	SKILL	**CA2B03B18**	DATABASE MANAGEMENT SYSTEMS	**4**	**4**	**20**	**80**
	SKILL	**CA2B04B18**	OBJECT ORIENTED PROGRAMMING USING	**3**	**3**	**20**	**80**

			C++				
	SKILL PRACTICAL	**VSD2SP03B18**	S/W LAB III (OBJECT ORIENTED PROGRAMMING USING C++)	**4**	**4**	**20**	**80**
	SKILL PRACTICAL	**VSD2SP04B18**	S/W LAB IV (ACCOUNTING WITH TALLY)	**2**	**2**	**20**	**80**
	PRACTICAL	**VSD2SI01B18**	INTERNSHIP	**1**	**1**	**20**	**80**
TOTAL HOURS AND CREDITS FOR SEMESTER - 2				**30**	**30**		
III	**GENERAL**	**VSD3G04B18**	PRINCIPLES AND PRACTICES OF MANAGEMENT	**4**	**4**	**20**	**80**
	GENERAL	**VSD3G05B18**	HUMAN RIGHTS	**4**	**4**	**20**	**80**
	GENERAL	**ST3C04B18**	BASIC STATISTICS AND SPSS	**4**	**4**	**20**	**80**
	SKILL	**CA3B07B18**	SYSTEM ANALYSIS AND SOFTWARE ENGINEERING	**5**	**5**	**20**	**80**
	SKILL	**CA3B05B18**	DATA STRUCTURES USING C++	**4**	**4**	**20**	**80**
	SKILL PRACTICAL	**VSD3SP05B18**	SOFTWARE LAB V (DATA STRUCTURES USING C++ LAB)	**5**	**5**	**20**	**80**
	SKILL PRACTICAL	**VSD3SP06B18**	SOFTWARE LAB VI (HTML & CSS)	**4**	**4**	**20**	**80**
TOTAL HOURS AND CREDITS FOR SEMESTER - 3				**30**	**30**		
IV	**GENERAL**	**CA4B09B18**	WEB PROGRAMMING USING PHP	**4**	**4**	**20**	**80**
	GENERAL	**VSD4G06B18**	ADVANCED SQL WITH ORACLE	**4**	**4**	**20**	**80**
	GENERAL	**VSD4G07B18**	INDIAN CONSTITUTION	**4**	**4**	**20**	**80**
	SKILL	**VSD4S04B18**	OPERATING SYSTEMS	**4**	**4**	**20**	**80**
	SKILL	**VSD4S05B18**	PROGRAMMING IN JAVA	**4**	**4**	**20**	**80**
	SKILL PRACTICAL	**VSD4SP07B18**	S/W LAB VII (PROGRAMMING IN JAVA)	**4**	**4**	**20**	**80**
	SKILL PRACTICAL	**VSD4SP08B18**	S/W LAB VIII (PHP & SQL)	**2**	**2**	**20**	**80**

	PRACTICAL	**VSD4SI02B18**	INTERNSHIP	**4**	**4**	**20**	**80**
TOTAL CREDITS FOR SEMESTER - 4				**30**	**30**		
V	**GENERAL**	**VSD5G08B18**	ENVIRONMENT STUDIES	**4**	**4**	**20**	**80**
	GENERAL	**VSD5G09B18**	ENTREPRENEURSHIP	**4**	**4**	**20**	**80**
	GENERAL	**VSD5G10B18**	LINUX OPERATING SYSTEMS	**4**	**4**	**20**	**80**
	SKILL	**VSD5S06B18**	COMPUTER NETWORKS	**3**	**3**	**20**	**80**
	SKILL	**VSD5S07B18**	PYTHON PROGRAMMING	**4**	**4**	**20**	**80**
	SKILL	**VSD5S08B18**	JAVA SCRIPT AND JQUERY	**3**	**3**	**20**	**80**
	SKILL PRACTICAL	**VSD5SP09B18**	S/W LAB IX (JAVA SCRIPT)	**4**	**4**	**20**	**80**
	SKILL PRACTICAL	**VSD5SP10B18**	S/W LAB X (PYTHON LAB)	**4**	**4**	**20**	**80**
TOTAL HOURS AND CREDITS FOR SEMESTER - 5				**30**	**30**		
VI	**GENERAL**	**VSD6G11B18**	BUSINESS ETHICS	**5**	**5**	**20**	**80**
	GENERAL	**VSD6G12B18**	SOFTWARE TESTING	**5**	**5**	**20**	**80**
	GENERAL	**VSD6G13B18**	CLOUD COMPUTING	**5**	**5**	**20**	**80**
	SKILL	**CA6B12aB18**	DATA MINING	**5**	**5**	**20**	**80**
	SKILL PRACTICAL	**VSD6SPRB18**	MAIN PROJECT	**5**	**5**	**20**	**80**
	SKILL PRACTICAL	**VSD6SI03B18**	INTERNSHIP	**5**	**5**	**20**	**80**
TOTAL HOURS AND CREDITS FOR SEMESTER - 6				**30**	**30**		
TOTAL CREDITS FOR THE PROGRAMME					**180**		

Scheme – Skill Courses

SEMESTER	COURSE TYPE	COURSE CODE	COURSE TITLE	HRS/WEEK	CREDITS	MAX.MARKS	
						ISA	ESA
I	**SKILL**	**VSD1S01B18**	FINANCIAL ACCOUNTING	**4**	**4**	**20**	**80**
	SKILL	**VSD1S02B18**	PROBLEM SOLVING TECHNIQUES	**4**	**4**	**20**	**80**
	SKILL	**CA1B02B18**	METHODOLOGY OF PROGRAMMING AND C LANGUAGE	**3**	**3**	**20**	**80**
	SKILL PRACTICAL	**VSD1SP01B18**	S/W LAB – I (PROGRAMMING IN C LANGUAGE)	**4**	**4**	**20**	**80**
	SKILL PRACTICAL	**VSD1SP02B18**	S/W LAB – II (MS OFFICE/ PHOTOSHOP)	**3**	**3**	**20**	**80**
TOTAL CREDITS FOR SEMESTER - 1					**18**		
II	**SKILL**	**MT2C03B18**	BASIC MATHEMATICS	**4**	**4**	**20**	**80**
	SKILL	**CA2B03B18**	DATABASE MANAGEMENT SYSTEMS	**4**	**4**	**20**	**80**
	SKILL	**CA2B04B18**	OBJECT ORIENTED PROGRAMMING USING C++	**3**	**3**	**20**	**80**
	SKILL PRACTICAL	**VSD2SP03B18**	S/W LAB III (OBJECT ORIENTED PROGRAMMING USING C++)	**4**	**4**	**20**	**80**
	SKILL PRACTICAL	**VSD2SP04B18**	S/W LAB IV (ACCOUNTING WITH TALLY)	**2**	**2**	**20**	**80**
	PRACTICAL	**VSD2SI01B18**	INTERNSHIP	**1**	**1**	**20**	**80**
TOTAL CREDITS FOR SEMESTER - 2					**18**		
	SKILL	**CA3B07B18**	SYSTEM ANALYSIS AND SOFTWARE ENGINEERING	**5**	**5**	**20**	**80**
	SKILL	**CA3B05B18**	DATA STRUCTURES USING C++	**4**	**4**	**20**	**80**

III	**SKILL PRACTICAL**	**VSD3SP05B18**	S/W LAB V (DATA STRUCTURES USING C++ LAB)	**5**	**5**	**20**	**80**
	SKILL PRACTICAL	**VSD3SP06B18**	S/W LAB VI (HTML & CSS)	**4**	**4**	**20**	**80**
TOTAL CREDITS FOR SEMESTER - 3					**18**		
IV	**SKILL**	**VSD4S04B18**	OPERATING SYSTEMS	**4**	**4**	**20**	**80**
	SKILL	**VSD4S05B18**	PROGRAMMING IN JAVA	**4**	**4**	**20**	**80**
	SKILL PRACTICAL	**VSD4SP07B18**	S/W LAB VII (PROGRAMMING IN JAVA)	**4**	**4**	**20**	**80**
	SKILL PRACTICAL	**VSD4SP08B18**	S/W LAB VIII (PHP & SQL)	**2**	**2**	**20**	**80**
	PRACTICAL	**VSD4SI02B18**	INTERNSHIP	**4**	**4**	**20**	**80**
TOTAL CREDITS FOR SEMESTER - 4					**18**		
V	**SKILL**	**VSD5S06B18**	COMPUTER NETWORKS	**3**	**3**	**20**	**80**
	SKILL	**VSD5S07B18**	PYTHON PROGRAMMING	**4**	**4**	**20**	**80**
	SKILL	**VSD5S08B18**	JAVA SCRIPT AND JQUERY	**3**	**3**	**20**	**80**
	SKILL PRACTICAL	**VSD5SP09B18**	S/W LAB IX (JAVA SCRIPT LAB)	**4**	**4**	**20**	**80**
	SKILL PRACTICAL	**VSD5SP10B18**	S/W LAB X (PYTHON LAB)	**4**	**4**	**20**	**80**
TOTAL CREDITS FOR SEMESTER - 5					**18**		
VI	**SKILL**	**CA6B12aB18**	DATA MINING	**6**	**6**	**20**	**80**
	SKILL PRACTICAL	**VSD6SPR01B18**	MAIN PROJECT	**6**	**6**	**20**	**80**
	SKILL PRACTICAL	**VSD6SI03B18**	INTERNSHIP	**6**	**6**	**20**	**80**
TOTAL CREDITS FOR SEMESTER - 6					**18**		
TOTAL CREDITS FOR THE SKILL COURSES					**108**		

Scheme – General Courses

SEMESTER	COURSE TYPE	COURSE CODE	COURSE TITLE	HRS/WEEK	CREDITS	MAX.MARKS	
						ISA	ESA
1	**COMMON COURSE - I**	**EN1A01B18**	FINE-TUNE YOUR ENGLISH	**4**	**4**	**20**	**80**
	GENERAL	**VSD1G01B18**	LE FRANÇAIS ÉLÉMENTAIRE	**4**	**4**	**20**	**80**
	GENERAL	**CA1B01B18**	COMPUTER FUNDAMENTALS AND DIGITAL PRINCIPLES	**4**	**4**	**20**	**80**
TOTAL CREDITS FOR SEMESTER - 1					**12**		
II	**COMMON COURSE - I**	**EN2A0BB18**	ISSUES THAT MATTER	**4**	**4**	**20**	**80**
	GENERAL	**VSD2G02B18**	LE FRANÇAIS INTERMEDIAIRE	**4**	**4**	**20**	**80**
	GENERAL	**VSD2G03B18**	COMPANY LAW	**4**	**4**	**20**	**80**
TOTAL CREDITS FOR SEMESTER - 2					**12**		
III	**GENERAL**	**VSD3G04B18**	PRINCIPLES AND PRACTICES OF MANAGEMENT	**4**	**4**	**20**	**80**
	GENERAL	**VSD3G05B18**	HUMAN RIGHTS	**4**	**4**	**20**	**80**
	GENERAL	**ST3C04B18**	BASIC STATISTICS AND SPSS	**4**	**4**	**20**	**80**
TOTAL CREDITS FOR SEMESTER - 3					**12**		

IV	**GENERAL**	**CA4B09B18**	PHP & SQL	**4**	**4**	**20**	**80**
	GENERAL	**VSD4G06B18**	ADVANCED SQL WITH ORACLE	**4**	**4**	**20**	**80**
	GENERAL	**VSD4G07B18**	INDIAN CONSTITUTION	**4**	**4**	**20**	**80**
TOTAL CREDITS FOR SEMESTER - 4					**12**		
V	**GENERAL**	**VSD5G08B18**	ENVIRONMENT STUDIES	**4**	**4**	**20**	**80**
	GENERAL	**VSD5G09B18**	ENTREPRENEURSHIP	**4**	**4**	**20**	**80**
	GENERAL	**VSD5G10B18**	LINUX OPERATING SYSTEMS	**4**	**4**	**20**	**80**
TOTAL CREDITS FOR SEMESTER - 5					**12**		
VI	**GENERAL**	**VSD6G11B18**	BUSINESS ETHICS	**4**	**5**	**20**	**80**
	GENERAL	**VSD6G12B18**	SOFTWARE TESTING	**4**	**5**	**20**	**80**
	GENERAL	**VSD6G13B18**	CLOUD COMPUTING	**4**	**5**	**20**	**80**
TOTAL CREDITS FOR SEMESTER - 6					**30**		
TOTAL CREDITS FOR THE SKILL COURSES					**72**		

EXAMINATIONS

The external theory examination of all semesters shall be conducted by the College at the end of each semester. Internal evaluation is to be done by continuous assessment.

Examinations have two parts: Internal or In-Semester Assessment (ISA) & External or End–Semester Assessment (ESA). The ratio between ISA and ESA shall be 1:4. Both internal and external marks are to be rounded to the next integer.

MARKS DISTRIBUTION FOR EXTERNAL EXAMINATION AND INTERNAL EVALUATION

Marks distribution for external and internal assessments and the components for internal evaluation with their marks are shown below:

Components of the internal evaluation and their marks are as below.

For all courses without practical

a) External examination: 80 marks

b) Internal evaluation: 20 marks

Internal assessment components - Theory	**Marks**
Attendance	**5**
Assignment/Seminar/Viva	**5**
Test papers (2 x 5)	**10**
Total	**20**

For all courses with practical

a) External examination: 60 marks

b) Internal evaluation: 15 mark

Internal assessment components - Theory	**Marks**
Attendance	**5**
Assignment/Seminar/Viva	**2**
Test papers (2 x 4)	**8**
Total	**15**

FOR ALL PRACTICAL PAPERS (conducted only at the end of even semesters):

(a) Marks of external Examination : 40

(b) Marks of internal evaluation : 10

.Internal assessment components	Marks
Attendance	2
Test paper (1 x 4)	4
Record*	4
Total	10

*Marks awarded for Record should be related to number of experiments recorded

FOR PROJECTS/ INDUSTRIAL VISIT AND COMPREHENSIVE VIVA-VOCE*:

(a) Marks of external Examination : 80

(b) Marks of internal evaluation : 20

Components of Project I.V. and Viva – Evaluation External	Marks
Dissertation (External)	50
Comprehensive Viva-voce (External)	30
Total	**80**

* Bonafide reports of the project work or Industrial Visit conducted shall be submitted at the time of examination.

All the four components of the internal assessment are mandatory.

Components of Project/ I.V. - Internal Evaluation	**Marks**
Punctuality	5
Experimentation / Data Collection	5
Knowledge	5
Report	5
Total	**20**

ASSIGNMENTS

Assignments are to be done from 1st to 4th Semesters. At least one assignment should be done in each semester for all papers.

SEMINAR / VIVA

A student shall present a seminar in the 5^{th} semester and appear for Viva- voce in the 6^{th} semester for all papers.

INTERNAL ASSESSMENT TEST PAPERS

Two internal test- papers are to be attended in each semester for each paper. The evaluations of all components are to be published and are to be acknowledged by the Candidates. All documents of internal assessments are to be kept in the college for two years and shall be made available for verification by the University. The responsibility of evaluating the internal assessment is vested on the teacher(s) who teach the paper.

CONDUCT OF PRACTICAL EXAMINATIONS

PRACTICAL EXAMINATION

Practical examinations will be conducted only at the end of even semesters for all programmes.

PATTERN OF QUESTION PAPERS

Pattern of questions for external examination of practical papers will be decided by the concerned Board of practical examination.

GRADES

A 7-point scale based on the total percentage of marks (ISA + ESA) for all courses (theory, practical, project)

% of marks	Grade	Grade point
>95	S - Outstanding	10
85 - 95	A^+ - Excellent	9
75 - 85	A - Very good	8
65 - 75	B^+ - Good	7
55 - 65	B - Above average	6
45 - 55	C - Satisfactory	5
35 - 45	D - Pass	4
<35	F - Failure	0
	Ab - Absent	0

PASS CRITERIA:

- A separate minimum of 30% marks each for internal and external (for both theory and practical) and aggregate minimum of 35% for a pass in a course
- For a pass in a programme, a separate minimum of Grade D is required for all the individual courses
- If a candidate secures F Grade for any one of the courses in a semester/programme, only F grade will be awarded for that semester/programme until he/she improves this to D Grade or above within the permitted period
- Students who complete the programme with D grade will have one betterment chance within 12 months, immediately after the publication of the result of the whole programme

CREDIT POINT AND CREDIT POINT AVERAGE

Credit Point (CP) of a course is calculated:

$CP = C \times GP$, C = Credit; GP = Grade point

Semester Grade Point Average (SGPA) of a semester:

$SGPA = TCP/TC$

TCP = Total Credit Point of that semester

TC = Total Credit of that semester

Cumulative Grade Point Average (CGPA) is calculated:

$CGPA = TCP/TC$

TCP = Total Credit Point of that programme

TC = Total Credit of that programme

GRADE POINT AVERAGE (GPA)

GPA of different category of courses viz. Common courses, Complementary courses, Core courses etc. are calculated:

$GPA = TCP/TC$

TCP = Total Credit Point of a category of course

TC = Total Credit of that category of course

Grades for the different courses, semesters and overall programme are given based on the corresponding GPA:

GPA	Grade
>9.5	**S - Outstanding**
8.5 – 9.5	**A^+ - Excellent**
7.5 – 8.5	**A - Very good**
6.5 – 7.5	**B^+ - Good**
5.5 – 6.5	**B - Above average**
4.5 – 5.5	**C - Satisfactory**
3.5 – 4.5	**D - Pass**
<3.5	**F - Failure**

- There shall be supplementary exams only for V sem
- Notionally registered candidates can also apply for the said supplementary examinations
- For reappearance/improvement for other semesters, appear along with the next batch
- A student who registers his name for the external exam for a sem will be eligible for promotion to the next semester
- A student who has completed the entire curriculum requirement, but could not register for the Semester examination can register notionally, for getting eligibility for promotion to the next semester
- A candidate who has not secured minimum marks/credits in internal examinations can re-do the same registering along with the University examination for the same semester, subsequently
- There shall be no improvement for internal evaluation

SYLLABI
FOR
B.Voc. SOFTWARE DEVELOPMENT
SKILL COURSES

SEMESTER I

VSD1S01B18 : FINANCIAL ACCOUNTING

CREDITS : 4

TOTAL LECTURE HOURS : 4 HOURS/WEEK

Aim of the Course : To familiarise the students with the basic accounting principles and practices in business.

Course Overview and Context : This course provides an introduction to the accounting requirements, concepts and principles that underlie financial accounting.

Module-1 (20hours)

Accounting meaning Objects- Concepts and Conventions-Double Entry Books of Accounts Book keeping and Accounting Accountancy The language of the Business World Principles of double entry Advantages of double entry.

Module-2 (10hours)

Journal- Rules of debit and credit - Kinds of Accounts Journalising .

Module-3 (20hours)

Ledger Sub divisions of ledger Account Form of an Account Posting of Journal Balancing of Accounts-Cash book (simple, triple column)-Petty Cash book.

Module-4 (10hours)

Trail Balance Meaning Objects-Summary of Accounting Entries.

Module-5 (12hours)

Final Accounts-Trading and Profit and Loss Account Balance Sheet (without adjustments)

Competencies of the Course:

1. Evaluate the concepts and theories that explain the production and/or usage of financial accounting reports.
2. Appreciate the role of the social, environmental and regulatory environment in shaping the nature and content of financial reporting.
3. Produce a range of basic financial reports in a range of contexts that comply with relevant accounting principles and standards.

4. Interpret financial reports and communicate key findings to a range of stakeholders both internally and externally.
5. Apply an adaptive and collaborative approach to working with others in the preparation of a Business Folio.
6. Analyse, interpret and evaluate financial data and accounting information to inform economic decision making in organisations.

References

1. Advanced Accountancy- R L Gupta and M Radhaswamy, Sultan Chand & Sons, 2001
2. Cost Accounting - S P Iyengar, Sultan Chand & Sons, 1980
3. Advanced Accountancy, P C Tulsian.

BLUE PRINT
BVoc I Semester - Core
VSD1S01B18 : FINANCIAL ACCOUNTING

Modules	Hours	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Essay / Problem) 15 Marks 2/4	Total
I	14	3	2	1	31
II	14	3	2	1	31
III	14	2	2	1	29
IV	15	2	2	1	29
V	15	2	1	0	9

B.Voc PROGRAMME- SOFTWARE DEVELOPMENT- CORE COURSE
VSD1S01B18 : FINANCIAL ACCOUNTING

MODEL QUESTION PAPER
I Semester Examination

Time : 3 Hrs **Total Marks : 80**

PART A
(Answer any 10 questions. Each question carries 2 marks)

1. Explain the importance of profit and loss account?
2. What is analytical petty cash book?
3. State the features of Trial balance
4. Explain going concern concept.
5. From the following particulars prepare a sales returns book

September 1	Antony & co returned back goods worth Rs.275
September 3	Returned goods by kumar which were defective Rs.230
September 5	Allowance granted to Mukesh for breakage of goods Rs. 215
September 7	Anand returned us goods worth Rs.210

6. Differentiate between sales day book and sales returns book.
7. Differentiate between matching principle and dual aspect principle.
8. The following are the transactions taken from the books of a furniture dealer. Prepare his sales day book

Feb 1	Sold to Anil 5 wooden tables at Rs.135 per table
Feb 7	Sold to Rajas 2 dressing tables for cash Rs.275 each
Feb 11	Sold to Hameed one type writer for Rs.1,500
Feb 17	Sold to Gopi 2 dining tables at Rs.1200 per dining table: trade discount
Feb 19	Sold 50 chairs to Anil. At Rs.45 per chair
Feb 21	Sold to Gopi 2 steel cabinets at Rs.1,500 each

9. Enter the following transactions in an analytical petty cash book

June 1	Received a cheque towards petty cash	500
June 2	Daily workers wages	200

June 3	Postage stamps	50
June 5	Railway freight	100
June 6	Pencil	20
June 8	Sundry expenses	35

10. The following information relates to a business for the year 2013. Ascertain the gross profit

Opening stock	16,000
Purchases	40,000
Purchases returns	1,500
Direct expenses	3,000
Sales	78,000
Sales returns	2400
Closing stock	13,000

11. Distinguish between fixed asset and current.
12. Briefly describe the functions of accounting.

(10x2=20)

PART B
(Answer any 6 question.Each question carry 5marks)

13. Explain the objectives of preparing Trial balance?
14. The following is a Trial Balance as on 31st March 2014 prepared by an incompetent accountant. You are required to rewrite it in its correct form.

Capital	22,000	
Stock(1st April 2013)	6,500	
Furniture	2,700	
Purchases		8,850
Cash at bank	7,300	
Carriages	300	
Sales		22,700

Buildings	12000	
Returns inwards		1,500
Returns outwards	350	
Trade expenses	1,000	
Discount received	370	
salary	3,500	
Office rent		1,770
Total	56,020	34,820

15. Explain the advantages of special journals.
16. From the following trial balance , prepare a Trading and profit & Loss account for the year ended 31st march 2014.

	Dr.(Rs)	Cr.(Rs)
Capital		11800
Stock on 1st april	6000	
Cash in hand	100	
Purchases	16800	
Salaries	1100	
Insurance	400	
Rent		600
Discount	400	
Bills payable		800
Sundry debtors	7500	

Bank overdraft		1900
Carriage inwards	450	
Furniture	650	
Sundry creditors		1500
Trade expenses	1000	
Returns inwards	950	
Machinery	2300	
Wages	9000	
Sales		29250
Returns outwards		800

Closing stock was valued at Rs.7500

17. Record the journal entries relating to the transactions in the books of Anil

Started business with cash	2,00,000
Bought furniture	50,000
Cash sales	15,000
Paid rent	20,000
Interest on investment received	10,000

18. From the following balances extracted from the books M/S shine paints, calculate the amount of gross profit earned during the period ended 31st Dec 2014

    Opening stock 17,000, cash purchases 2,30,000, credit purchases 7,10,000, cash sales 3,80,000, credit sales 12,05,000, direct expenses 2,20,000 closing stock 28,000 sales returns 14,000 ,purchase returns12,000

19. Calculate the amount operating profit from the following information

    Opening stock 24,000 , net purchases 4,80,000 , net sales 7,50,000 ,direct expenses 52,000, administration Expenses 39,000 ,selling and distribution 47,000 ,loss due to fire 24,000, closing stock 48,000

20. Accounting is a language of business through which it communicates to various parties who are interested in it. How is it made possible.
21. What do you mean by grouping and marshalling of assets and liabilities?

(6x5=30)

PART C
(Answer any 2 questions.Each question carry 15 marks)

22. Explain the Errors which will affect the agreement of the Trial balance?
23. Accounting information is useful to many people. List out the major users of accounting information .

24. Following is the trial balance of Miss Gini as on 31st dec.2014

Particaulars	Debit	Credit
Stock (1st Jan 2014)	1250	
Sales		11,800
Sundry expenses	667	
Commission		211
Insurance	380	
Carriage inwards	300	
Furniture	670	
Printing charges	481	
Carriage outwards	200	
Capital		9228
Creditors		1780
Bills payable		541
Plant & machinery	6230	
Returns outwards		1380
Cash in hand	895	
Salary	750	
Debtors	1905	
Discount	328	
Bills receivables	2730	
Wages	1589	
Return inwards	1659	
Bank overdraft		4000
Purchases	8679	
Petty cash in hand	47	

Bad debts	180	

Value of stock as on 31st December 2014 amounted to Rs.3200.

Prepare Trading & Profit and Loss account for the year ended 31st Dec.2014 and Balance sheet as on that date.

25. Record the following transactions in a single column cash book.

March 1	Mohan commenced business with cash	20,000
March 2	Opened a bank account	5,000
March 3	Purchased goods for cash	4,100
March 5	Bought office furniture	3,600
March 6	Sold goods for cash	2,400
March 8	Paid for stationery	250
March 10	Received cash on sales	1,750
March 12	Electricity charges paid	650
March 13	Rent paid	175
March 17	Cheque received was paid in to bank	325
March 20	Salary paid	3000
March 22	Purchased goods	1,900

(2x15=30)

SEMESTER I

VSD1S02B18 : PROBLEM SOLVING TECHNIQUES

CREDITS : 4

TOTAL LECTURE HOURS : 4 HOURS/WEEK

Aim of the Course : To provide an introduction to logical approach of problem solving

Course Overview and Context : Acquire techniques in problem-solving and decision making, including root cause analysis of problem, generating and evaluating alternative solutions, making appropriate decisions, and taking responsibility for the decisions within own circle of influence.

Module I: PROGRAMMING TECHNIQUES (12 hours)

Steps Involved in Computer Programming – Problem Definition – Outlining The Solution – Flow Chart – Developing Algorithms – Efficiency of Algorithms - Analysis of Algorithms, Translators, Compiler and Interpreter.

Module II: FUNDAMENTAL ALGORITHMS (12 hours)

Exchanging the Values – Counting – Summation of Set of Number – Factorial Computation – Sine Computation – Fibonacci Sequence – Reversing the Digits of an Integer – Base Conversion .

Module III: FACTORING METHODS (12 hours)

Finding the Square Root of a Number – Smallest Divisor of an Integer – GCD of Two Integers – Generating Prime Numbers – Computing the Prime Factors of an Integer – Raising a Number to a Large Power .

Module IV: ARRAY TECHNIQUES (12 hours)

Array Order Reversal – Array Counting or Histogram – Finding the Maximum Number in a Set – Removal of Duplicates from an Ordered Array – Partitioning an Array – Finding the kth Smallest Element

Module V: MERGING, SORTING AND SEARCHING (12 hours)

Two Way Merge - Sorting by Selection, Exchange, Insertion, and Partitioning - Binary Search Hash Searching.

Competencies of the Course

After studying this course, you should be able to:

- Demonstrate a strategy for using skills in problem solving over an extended period of time

- Monitor progress and adapt the strategy as necessary, to achieve the quality of outcomes required when tackling a complex problem
- Evaluate this overall strategy and present the outcomes from the work using a variety or methods.

BOOK OF STUDY

1. Dromey R G, "How to Solve it by Computer", Prentice Hall of India, 1997

REFERENCES

2. Michael Schneider, Steven W. Weingart, David M. Perlman, "An Introduction to Programming and Problem Solving with Pascal", Wiley Eastern Limited, New Delhi, 1982.
3. Harold Abelson and Gerald Sussman with Julie Sussman, "Structur Harold Abelson and Gerald Sussman with Julie Sussman, "Structure and Interpretation of Computer Programs", MIT Press, 1985.

BLUE PRINT
BVoc I Semester - Core
VSD1S02B18 : PROBLEM SOLVING TECHNIQUES

Modules	**Hours**	**PART A** **(Short Answer)** **2 Marks** **10/12**	**PART B** **(Short Essay)** **5 Marks** **6/9**	**PART C** **(Essay / Problem)** **15 Marks** **2/4**
I	14	3	2	0
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	1

B.Voc PROGRAMME- SOFTWARE DEVELOPMENT- CORE COURSE
VSD1S02B18 : PROBLEM SOLVING TECHNIQUES

MODEL QUESTION PAPER
I Semester Examination

Time : 3 Hrs **Total Marks : 80**

PART A
(Answer any 10 questions. Each question carries 2 marks)

1. Write the differences between compiler and interpreter.
2. Define an algorithm.
3. Explain the logic of Fibonacci series up to n terms.
4. Draw the different flow charting symbols and write the function of each symbol.
5. What do you meant by worst case?
6. What you meant by referencing array element?
7. What is the logic of insertion sort?
8. Define merging.
9. Write down the names different types of sorting methods
10. What is hash key
11. Define flowchart.
12. What do you meant by redundant computations?

(10x2=20)

PART B
(Answer any 6 question.Each question carry 5marks)

13. Discuss the fundamental technique for exchange of two numbers
14. Explain factoring method.
15. Draw a flow chart to check the given no is Armstrong or not.
16. Draw a flow chart to check the given string is palindrome or not
17. Define hashing. Explain different methods ?
18. Write an algorithm to the factorial of a given number. Illustrate with an example.
19. Write an algorithm to implement selection sort.
20. Write an algorithm to find the smallest element in an array.
21. What is searching? Explain.

(6x5=30)

PART C
(Answer any 2 questions.Each question carry 15 marks)

22. Explain Algorithm analysis in detail.
23. a).Explain arrays b) basic operations in one dimensional array
24. a) Discuss advantage and disadvantages of algorithm tool
    b) write an algorithm to print the n fibonaccii numbers
25. Explain any one sorting technique in detail with example.

(2x15=30)

SEMESTER I

CA1B02B18 : METHODOLOGY OF PROGRAMMING AND C LANGUAGE

CREDITS : 3

TOTAL LECTURE HOURS : 45 HOURS

Aim of the Course

- The course is aimed to develop problem-solving strategies, techniques and skills that can be applied to computers and problems in other areas which give students an introduction to computer and analytical skills to use in their subsequent course work and professional development.
- To act as an introduction to the thinking world of computers, to help students develop the logic, ability to solve the problems efficiently using C programming. Knowledge in a programming language is prerequisite to the study of most of computer science courses. This knowledge area consists of those skills and concepts that are essential to problem solving and programming practice independent of the underlying paradigm.

Course Overview and Context

C is a widely used language in systems programming. It's a language with lot of capabilities. This subject gives an introduction to programming and basic elements of programming like algorithm, flow chart and Pseudo code. The subject starts with the features of C language and basic elements of the language. Programming constructs like if, for, while and do while are dealt with its syntax and applications. Advanced features like functions, arrays, pointers, structures and unions are also dealt here. Pointer being an important concept is dealt with respect to arrays, structures and functions. The concept of files and preprocessors are also introduced. In general, the subject concentrates in all the areas of C programming which is very much helpful for a beginner in Computer Programming.

Syllabus Content

Module I (9 hours)

Introduction to programming, Classification of computer languages, Language translators (Assembler, Compiler, Interpreter), Linker, Characteristics of a good programming language, Factors for selecting a language, Subprogram, Purpose of program planning, Algorithm, Flowchart, Pseudocode, Control structures (sequence, selection, Iteration), Testing and debugging.

Module II (9 hours)

C Character Set, Delimiters, Types of Tokens, C Keywords, Identifiers, Constants, Variables, Rules for defining variables, Data types, C data types, Declaring and initialization of variables, Type modifiers, Type conversion, Operators and Expressions- Properties of operators, Priority of operators, Comma and conditional operator, Arithmetic operators, Relational operators, Assignment operators and expressions, Logical Operators, Bitwise operators

Module III (9 hours)

Input and Output in C – Formatted functions, unformatted functions, commonly used library functions, Decision Statements If, if-else, nested if-else, if-else-if ladder, break, continue, goto, switch, nested switch, switch case and nested if. Loop control-for loops, nested for loops, while loops, do while loop.

Module IV (9 hours)

Array, initialization, array terminology, characteristics of an array, one dimensional array and operations, two dimensional arrays and operations. Strings and standard functions, Pointers, Features of Pointer, Pointer and address, Pointer declaration, void wild constant pointers, Arithmetic operations with pointers, pointer and arrays, pointers and two dimensional arrays.

Module V (9 hours)

Basics of a function, function definition, return statement, Types of functions, call by value and reference. Recursion -Types of recursion, Rules for recursive function, direct and indirect recursion, recursion vs iterations, Advantages and disadvantages of recursion. Storage class, Structure and union, Features of structures, Declaration and initialization of structures, array of structures, Pointer to structure, structure and functions, typedef, bitfields , enumerated data types, Union, Dynamic memory allocation, memory models, memory allocation functions.

Competencies of the Course

C1 :Understand the problem and identify the tools and programming structure to logically solve the problem.
C2 : Understand the basic concepts of programming language C including variables and operators.
C3 :Choose appropriate conditional and iteration constructs for a given programming task.
C4 : Apply the techniques of structured (functional) decomposition to break a program into smaller pieces.

C5 : Understand memory management using pointers.
C6 : Design, implement, test, and debug a program that uses each of the following fundamental programming constructs: basic computation, simple I/O, standard conditional and iterative structures, and the definition of functions.

Book Of Study:

1. Ashok Kamthane - Programming in C, Third Edition, Pearson Education

2. P K Sinha & Priti Sinha - Computer Fundamentals , Fourth Edition, BPB Publications.

Reference Text

1. E. Balaguruswamy -Programming in ANSI C ,Seventh Edition , McGraw Hill Education
2. Byron Gotfried - Programming with C, Second Edition, Schaums Outline series. McGraw

BLUE PRINT
BVoc I Semester - Core
CA1B02B18 : METHODOLOGY OF PROGRAMMING AND C LANGUAGE

Modules	PART A (short answer) 2 marks 10/12	PART B (short essay) 5 marks 6/9	PART C (essay/problem) 15marks 2/4
I	3	1	1
II	3	2	
III	2	2	1
IV	2	2	1
V	2	2	1
Total	12	9	4

B.Voc PROGRAMME- SOFTWARE DEVELOPMENT- CORE COURSE
CA1B02B18 : METHODOLOGY OF PROGRAMMING AND C LANGUAGE

MODEL QUESTION PAPER
I Semester Examination

Time : 3 Hrs **Total Marks : 80**

PART A
(Answer any 10 questions. Each question carries 2 marks)

1. Explain Testing.
2. What is a Pseudo code.
3. Explain Linker
4. Explain Bitwise operator.
5. Explain Rules for creating identifiers.
6. Explain Type Conversion.
7. Explain setw() in c.
8. Explain any 2 string functions.
9. Explain Goto statements.
10. What is recursion?
11. Explain Enumerated datatype.
12. Explain Realloc().

(2 x 10 = 20)

PART B
(Answer any 6 question.Each question carry 5marks)

13. Explain characteristics of good programming.
14. Explain different language translator.
15. Explain priority and associativity related to operators.
16. Explain different if statements.
17. Explain switch statement.
18. Differentiate union and structure.
19. Explain pointer to function.
20. Differentiate call by value and call by reference.
21. Explain Logical Operators. (6 x 5 = 30)

PART C
(Answer any 2 questions.Each question carry 15 marks)

22. Explain different ways of passing method overloading.
23. Explain different control structures in C.
24. Explain Pointer addition with a example program
25. Explain dynamic memory allocation methods in C

(2 x 15 = 30)

SEMESTER I

VSD1SP01B18 : SOFTWARE LAB-I (PROGRAMMING IN C LANGUAGE)

CREDITS : 4

TOTAL LECTURE HOURS : 4 HOURS/WEEK

1. Programs to familiarize printf() and scanf() functions.
2. Programs Based on Decision statements , break, goto, continue, switch and Loop controls statements.
3. Programs Based on One dimensional and two dimensional arrays.
4. Programs on Strings and string handling functions.
5. Programs based on Pointers, operations on pointers, Arrays & Pointers,
6. Programs based on functions, Call by value, Call by reference, Recursion,
7. Programs based on structure and union, array of structures, Pointer to structure, structure and functions
8. Simple programs using pointers and malloc().

Scheme of Evaluation for software lab I external is as follows:

Division of Marks (Practical - 3 hours External)

First program from part 1& 2 **- 25 marks**

1.Flowchart - 5 marks

2.Logic – 10 marks

3.Successful compilation – 5 marks

4.Result – 5 marks

Second program should be based on advanced concepts ,part 3 to part 5 **- 35 marks**

1.Logic – 20 marks

2.Successful compilation – 10 marks

3. Result – 5 marks)

Viva Voce **- 10 marks** Lab
Record (minimum of 25 Programs) **- 10 marks Total**
Marks **- 80 marks**

SEMESTER I

VSD1SP02B18 : MSOFFICE/ PHOTOSHOP

CREDITS : 3

TOTAL LECTURE HOURS : 3 HOURS/WEEK

Aim of the Course : Examine word processing concepts and explore the Microsoft Office Word environment.

Syllabus Content

Module–I: (9 hours)

Word Basics, Work with Text, Format Documents, Work with Text Objects, Work with References, Work with Illustrations, Specialized Documents, Collaborate with Others, Web Pages.

Excel Basics, Work with Cells and Worksheets Calculate Your Data, Format your Workbook, Add Charts and Graphics, Collaborate with Others, Analyze your Data, Work with Macros and the Web.

Module–II: (9 hours)

PowerPoint Basics, Create Presentations, Insert and Modify Text, Work with Graphics and Media, Final Preparations, Deliver a Presentation.

INTRODUCTION TO ADOBE PHOTOSHOP CS4

About Photoshop - Navigating Photoshop - Menus and panels- Opening new files - Opening existing files-Exploring the Toolbox- The New CS4 Applications Bar & the Options Bar-Exploring Panels & Menus- Creating & Viewing a New Document- Customizing the Interface- Setting Preferences - Zooming & Panning an Image -Working with Multiple Images, Rulers, Guides & Grids -Undoing Steps with History -Adjusting Color with the New Adjustments Panel -The New Masks Panel & Vibrance Color Correction Command.

RESIZING & CROPPING IMAGES : Understanding Pixels & Resolution-The Image Size Command-Interpolation Options-Resizing for Print & Web-Cropping & Straightening an Image-Adjusting Canvas Size & Canvas Rotation.

Module–III: (9 hours)

WORKING WITH BASIC SELECTIONS

Selecting with the Elliptical Marquee Tool-Using the Magic Wand & Free Transform Tool-Selecting with the Regular & Polygonal Lasso Tools-Combining Selections-Using the Magnetic Lasso Tool-Using the Quick Selection Tool & Refine Edge-Modifying Selections.

GETTING STARTED WITH LAYERS

Understanding the Background Layer- Creating, Selecting, Linking & Deleting Layers- Locking & Merging Layers- Copying Layers, Using Perspective & Layer Styles- Filling & Grouping Layers-Introduction to Blending Modes- Blending Modes, Opacity & Fill- Creating & Modifying Text.

PAINTING IN PHOTOSHOP

Using the Brush Tool- Working with Colors & Swatches- Creating & Using Gradients- Creating & Working with Brushes- Using the Pencil & Eraser Tools-Painting with Selections.

PHOTO RETOUCHING

The Red Eye Tool-The Clone Stamp Tool-The Patch Tool & the Healing -brush Tool-The Spot Healing Brush Tool- The Color Replacement Tool-The Toning & Focus Tools-Painting with History.

Module–IV: (9 hours)

INTRODUCTION TO COLOR CORRECTION

Color Spaces & Color Modes-The Variations Command-The Auto Commands- Adjusting Levels-Adjust Curves, Non-Destructively, with Adjustment Layers.

USING QUICK MASK MODE

Quick Mask Options - Painting a Selection- Saving & Removing a Selection from the Background

WORKING WITH THE PEN TOOL

Understanding Paths & the Pen Tool-Creating Straight & Curved Paths- Creating Combo Paths-Creating a Clipping Path

CREATING SPECIAL EFFECTS

Getting Started with Photoshop Filters- Smart Filters- Creating Text Effects- Applying Gradients to Text.

Course Competencies :

1. Examine word processing concepts and explore the Microsoft Office Word environment.
2. Examine spreadsheet concepts and explore the Microsoft Office Excel environment.
3. Examine slide show presentation concepts and explore the Microsoft Office PowerPoint environment.
4. Demonstrate competency in identifying Photoshop interface elements.
5. Construct simple documents utilizing selections, layers, and blending modes.
6. Differentiate between simple graphic file formats and choose the appropriate usage for each.
7. Designing visiting cards, brochures etc.

Resources

1. Adobe Photoshop
2. Adobe Photoshop CS4
3. CorelDraw Graphic Suite

Question Paper Blueprint
(Only practical exam is being conducted for the MS OFFICE , PHOTOSHOP COURSE

SEMESTER II

MT2C03B18 –BASIC MATHEMATICS

CREDITS : 4

TOTAL LECTURE HOURS : 60 hours

Aim of the Course : In this course fundamental ideas of Mathematical Logic , sets and functions and some concepts of matrices like its rank are explained in a detailed manner. The basic concepts of graph theory are also introduced.

MODULE I

Mathematical Logic (20hrs) Logical statement or proposition, Types of propositions, The Propositional Calculus, The negation of proposition, Disjunction, Conjunction, Tautologies & Contradictions,Logical Equivalence, The Algebra of propositions, Conditional propositions, Converse,Inverse & Contrapositive propositions, The negation of a Conditional propositions, Biconditional propositions, Arguments

(Text - 2 Chapter - 1)

MODULE II (18 hours) - MATRIX

Elementary transformation – echelon form – rank using elementary transformation by reducing in to echelon form – solution of linear homogeneous and non – homogeneous equations using elementary transformation

(Relevant sections of Text 3).

MODULE III (14hrs)

Sets, Union, Intersection, Complementation, Symmetric Difference, Power set, Cartesian Products, Generalized set theory, Relation, equivalence relations

(Text - 2 Chapter 2 & Chapter 3: 3.1 & 3.2)

MODULE IV GraphTheory (20hrs)

An introduction to graph. Definition of a Graph, More definitions, Vertex Degrees, Sub graphs, Paths and cycles The matrix representation of graphs (definition & example only) Trees and connectivity. Definitions and Simple properties, Bridges, Spanning trees, Cut vertices and connectivity(definition & example only)

(Relevant sections of Text 1)

Text Books

.1. John Clark Derek Allen Holton - A first look at graph theory, Allied Publishers

2. B.S.Vatsa & Suchi Vatsa : Discrete Mathematics (Fourth revised edition), New Age International Publishers, New Delhi

3. Frank Ayres Jr - Matrices , Schaum's Outline Series, TMH Edition

Competencies of the Course:

- Familiarize with the concepts of mathematical logic.
- Understand the rank of matrices.
- Solve a system of linear equations
- Understand the concepts of set theory.
- Understand the definition of graph
- Identify paths and cycles in a graph
- Represent graphs in terms of matrices.
- Apply the concepts of connectivity of graphs in real life problems.

References

1. Shanti Narayan - Matrices (S. Chand & Company)
2. Lipschutz: Set Theory and related topics (Second Edition), Schaum Outline Series, Tata McGraw-Hill Publishing Company, New Delhi. (Reprint)
3. P.R. Halmos : Naive Set Theory, Springer.
4. Ian Chiswell & Wifrid Hodges: Mathematical Logic, Oxford university press

BLUE PRINT
BVoc II SEMESTER - CORE

MT2C03B18 –BASIC MATHEMATICS

Modules	**PART A** **(Short Answer)** **2 Marks** **10/12**	**PART B** **(Short Essay)** **5 Marks** **6/9**	**PART C** **(Short Answer)** **15 Marks** **2/4**
I	3	2	1
II	3	2	2
III	2	3	1
IV	4	2	0

SEMESTER II

CA2B03B18 : DATABASE MANAGEMENT SYSTEMS

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

Aim of the course:

At the end of the course, the students will be able to understand the fundamentals of database development and management. Upon successful completion of the course, the students will also be able to design and create database, define queries for database management and data retrieval. Students shall be able to learn and apply the basic database concepts in real world applications.

Course Overview and Context:

The main aim of the course is to introduce database fundamentals to the students. With this course we shall demonstrate database development activities and prepare students for proficiency in developing database for commercial applications. The subject deals with what is a database and how a database should be designed. It also deals the popular relational data model and SQL queries in depth. It also concentrates on various techniques for database protection and query optimization. A brief introduction about network and hierarchical data model gives exposure about how a DBMS can be designed. The subject also deals with distributed databases in brief.

Syllabus Content

Module 1 (12 hours)

Introduction : Characteristics of the Database Approach – Database users -DBA , Database Designers ,End users – Advantages of using the DBMS Approach – Data models, Schemas, and Instances – Three-Schema Architecture and Data Independence.

DBMS Languages: DDL, DML – The Database System Environment: DBMS Component Modules.

Module II (12 hours.)

Relational Model : **Entity Relationship Modeling**: Introduction –Entity Types, Entity Sets, Attributes and Keys – Relationship Types ,Relationship Sets, Roles , and Structural Constraints – Weak Entity Types – Notation for ER diagrams – Sample ER diagrams.

Relational Model concepts: Domains ,Attributes, Tuples, and Relations – Characteristics of Relations – Relational Model Constraints and Relational Database Schemas : Domain Constraints, Key Constraints , Relational Database Schemas , Entity Integrity , Referential Integrity, and Foreign Keys .

Module III (12 hours.)

SQL : **Data Types** – Data Definition commands : CREATE , ALTER ,DROP - Adding constraints in SQL – Basic SQL Queries : INSERT ,SELECT ,DELETE ,UPDATE - Substring comparison using LIKE operator ,BETWEEN operator – Ordering of rows – SQL set operations UNION , EXCEPT , INTERSECT – Complex Queries : Comparison involving NULL and Three-valued logic, Nested queries , EXISTS and UNIQUE functions, Renaming of attributes and Joining of tables, Aggregate functions ,Grouping – Managing Views.

Module IV (12 hours.)

Normalization and Indexing Structures for Files : **Normalization**: Informal Design Guidelines for Relational Schemas –Functional Dependencies – Normal forms : First Normal Form , Second Normal Form , Third Normal Form – General Definitions of Second and Third Normal Forms –BCNF.

Indexing Structures for files: -Types of Single-Level Ordered Indexes: Primary Indexes, Clustering Indexes, and Secondary Indexes.

Module V (12 hours.)

Transaction Processing and Database Security : **Transaction Processing**: Introduction to Transaction Processing - Transaction and System Concepts – Desirable properties of Transactions.

Database Security and Authorization: Types of Security – Control measures – Database Security and DBA – Access Control , User Accounts, and Database Audits –Access Control based on Granting and Revoking Privileges.

Course Competencies

- Understand, appreciate and effectively explain the underlying concepts of database technologies
- Design and implement a database schema for a given problem-domain
- Normalize a database
- Populate and query a database using SQL DML/DDL commands.
- Programming PL/SQL including stored procedures, stored functions, cursors, packages.
- Declare and enforce integrity constraints on a database using RDBMS

Books of study:

1.Ramez Elmasri and Shamkant B.Bavathe - DATABASE SYSTEMS , Sixth Edition, PearsonEducation.

References:

1. C.J Date- An Introduction to Database Systems, Eighth edition, Pearson Education,2003

2. Reghu Ramakrishnan and Johannes Gehrke- Database Management Systems , Third edition, Mc Graw Hill International Edition.
3. Dipin Desai , An Introduction to Database Systems , First Edition, Galgoria Publications

BLUE PRINT

BVoc II Semester - Core

CA2B03B18 : DATABASE MANAGEMENT SYSTEMS

Modules	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Short Answer) 2 Marks 2/4
I	3	1	1
II	3	2	
III	2	2	1
IV	2	2	1
V	2	2	1
Total	12	9	4

SEMESTER II

CA2B04B18 : OBJECT ORIENTED PROGRAMMING USING C++

CREDITS : 3

TOTAL LECTURE HOURS : 45 HOURS

Aim of the course:

- Demonstrate a thorough understanding of the object-oriented programming concepts of encapsulation, data abstraction and composition by designing and implementing classes including the use of overloaded functions and constructors.
- Demonstrate a thorough understanding of the concept of pointers and dynamic memory allocation by designing and implementing programs using pointers and dynamic memory allocation.
- Demonstrate a thorough understanding of the implementation of programmer-defined functions and classes by writing code, performing unit testing and debugging of multiple complex programs.
- Demonstrate a thorough understanding of stream input/output for both console and files.
- Demonstrate a thorough understanding of stream input/output for both console and files.

Course Overview and Context:

- This course provides a solid foundation for object-oriented programming using the C++ programming language.. The major emphasis of this course is on the most effective use of the advanced language features, presented in the context of modern software engineering themes of modularity, abstraction, information hiding, and reusability. Fundamental principles of object-oriented design and programming are also introduced.

Syllabus Content

Module I **(9 hours)**

Principles of Object Oriented Programming, Beginning with C++

Procedure Oriented Programming-Object Oriented Programming-Basic concepts of object-oriented programming- Benefits of OOP- Applications of OOP-A simple C++program-Structure of C++ program-C++ data types- Symbolic constants- Reference by variables-Operators in C++- Operator precedence-Control structures- Function in C++ - The main function, Function prototyping- Call by reference- Return by reference- Inline function- Default arguments- Function overloading.

Module II **(9 hours)**

Classes and Objects : Specifying a class- Defining member functions- Nesting of member functions - Private member functions - Arrays within a class - Memory allocation for objects-Static data members -Static member functions - Arrays of objects - objects as function arguments -Friendly functions- Returning Objects.

Module III **(9 hours)**

Constructers and Destructors, Overloading : Constructors- Default constructor-Parameterized constructor-Copy constructor- Multiple constructors- Constructors with default arguments- Dynamic constructor-Destructors- Operator overloading- Unary and Binary operator overloading- Overloading using friends- Rules for overloading- Type conversion.

Module IV **(9 hours)**

Inheritance : Inheritance- Defining derived classes-Visibility modes-Single,Multilevel,Multiple, Hierarchical And Hybrid inheritance- Virtual base classes- Abstract classes- Constructors in derived classes- Nesting of classes.

Module V **(9 hours)**

Pointers, Virtual Functions and Polymorphism, Working with Files : Pointers- Pointers to objects- this pointer-Pointers to derived classes- Virtual functions- Pure virtual functions- File Stream classes, Opening and closing a file- File opening modes- File pointers and their manipulations- Sequential input and output operations.

Competencies of the Course

- Understand basic object-oriented programming concepts
- Effectively use the main features of the object-oriented programming language C++.
- Gain experience in implementing object-oriented programs in C++, in particular, a real system example.

Book of Study

1. E. Balagurusamy - Object Oriented Programming with C++, Fifth edition, Tata McGraw Education Hill , 2011.

Reference

1. Ashok N. Kamthane, Object oriented Programming with ANSI & Turbo C++, First Edition, Pearson India
2. Robert Lafore, Object Oriented Programming in Turbo C++, First Edition, Galgotia Publications.
3. D Ravichandran, Programming with C++, Second edition, Tata McGraw- Hill

BLUE PRINT
BVoc II Semester - Core
CA2B04B18 : OBJECT ORIENTED PROGRAMMING USING C++

Modules	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Short Answer) 15 Marks 2/4
I	3	1	1
II	3	2	
III	2	2	1
IV	2	2	1
V	2	2	1
Total	12	9	4

SEMESTER II

VSD2SP03B18 : Software Lab III (OBJECT ORIENTED PROGRAMMING USING C++)

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

I. SQL Commands (2 hrs. per week)

1. Data definition commands - CREATE, ALTER, DROP, Adding Constraints Primary key, foreign key, unique key, check, not null.
2. Basic SQL queries INSERT, SELECT, DELETE, UPDATE, Using multiple tables, ordering of rows using ORDER BY option, Set operations using UNION, EXCEPT, INTERSECT, Substring Comparison using LIKE operator, BETWEEN operator.
3. Complex Queries Nested Queries, EXISTS and UNIQUE/DISTINCT functions, NULL values, Renaming of attributes and Joining of tables, Aggregate functions and grouping.
4. Managing views, Simple stored procedures.
5. Data Control commands - Access Control and Privilege commands.

II. Object Oriented Programming using C++ (3 hrs. per week)

1. Programs based on default arguments, function overloading.
2. Programs based on array of objects, friend functions, passing objects as arguments to function.
3. Programs based on operator overloading (binary, unary) using member functions and friend functions.
4. Programs based on constructors, different types of constructors.
5. Programs based on inheritance, different types of inheritance.

Scheme of Evaluation for software lab II external is as follows:
(There will be two questions; the first from DBMS and second from C++)

Division of Marks (Practical - 3 hours External)

First program - questions from DBMS **- 25 marks**

1. Logic – 10 marks
2. Successful compilation – 8 marks
3. Result – 7 marks

Second program – questions from Object Oriented Programming using C++ **- 35 marks**

1. Logic – 20 marks
2. Successful compilation –10 marks
3. Result – 5 marks

SEMESTER II

VSD2SP04B18 : SOFTWARE LAB IV (ACCOUNTING WITH TALLY)

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

Aim OF the Course :

To enable the students to acquire basic knowledge in the computerised accounting systems and its applications in the area of business.

Syllabus Content

Module I (12 hours)

Introduction to accounting - accounting basis and terms - branches of accounting - mode of accounting - manual accounting - computerized accounting fundamentals.

Module II (12 hours)

Accounting with Tally - Introduction to Tally - tally interface - f11 features-f12 configuration - company creation - accounting groups - accounting ledgers - accounting vouchers – vouchers entry.

Module III (12 hours)

Inventory management with tally - stock groups - stock items - stock category - unit of measures – godown inventory vouchers (Pure inventory and inventory vouchers)

Module IV (12 hours)

Integration of accounting with inventory - bill wise details – invoicing - voucher entry – cost centre - cost category - budget and control - bank reconciliation - interest calculation – order processing - stock valuation methods - reorder levels - tracking numbers - bill of material - inventory ageing analysis.

Module V (12 hours)

Goods and Service tax as per goods and service tax 2017-Introduction-Supply- assessment-kinds of supply, returns.

SEMESTER III

CA3B07B18 : SYSTEM ANALYSIS AND SOFTWARE ENGINEERING

CREDITS : 5

TOTAL LECTURE HOURS : 75 HOURS

Aim of the Course :

- To introduce software process models such as the waterfall and evolutionary models.
- To be familiar with the role of project management including planning, scheduling, risk management, etc.
- To understand software requirements and the SRS document.
- To understand different software architectural styles.
- To be familiar with implementation issues such as modularity and coding standards.
- To understand the approaches to verification and validation including static analysis, and reviews.
- To understand the software testing approaches such as unit testing and integration testing.
- To familiarize software evolution and related issues such as version management.
- An understanding on quality control and how to ensure good quality software.
- An understanding of some ethical and professional issues those are important for software engineers.

Course Overview and Context:

In this course, students will gain a broad understanding of the discipline of software engineering and its application to the development of and management of software systems.

Syllabus Content

Module I (15 hours)

Information systems concepts, Business information systems; Describing the business organization – organization chart , organization function list ; information system levels - operational, lower, middle, top management; the system development life cycle concepts; hardware and software end products. Life cycle activities- life cycle flow chart, task, management review, baseline specifications, role of system analyst.

Module II (15 hours)

Introduction to Software Engineering - Definition, Program Vs Software, and Software process, Software Characteristics, Brief introduction about product and process, Software process and product matrices. Software life cycle models - Definition, Waterfall model, Increment process models, Evolutionary process models, Selection of a life cycle model.

Module III (15 hours)

Software Requirement Analysis and Specification Requirements Engineering type of requirements, Feasibility Studies, Requirement Elicitation, Various steps for requirement analysis, Requirement documentation, Requirement validation, an example to illustrate the various stages in Requirement analysis. Project planning-Size estimation, cost estimation, the constructive cost model (COCOMO).

Module IV (15 hours)

Software Design - Definition, Various types, Objectives and importance of Design phase, Modularity, Strategy of design, Function oriented design, IEEE recommended practice for software design descriptions. Steps to Analyze and Design Objected Oriented System. Software Reliability Definition, McCall software quality model, Capability Maturity Model.

Module V (15 hours)

Software Testing What is testing?, Test, Test case and Test Suit, Verification and Validation, Alpha, beta and acceptance testing, functional testing, techniques to design test cases, boundary value analysis, Equivalence class testing, decision table based testing, cause effect graphing technique, Structural testing path testing, Graph matrices, Data flow testing; Levels of testing Unit testing, integration testing, system testing, validation testing, a brief introduction about debugging and various testing tools.

Competencies of the Course

C1 : Understand the Organization structure.

C2 : Identify software requirements specifications.

C3 : Exhibit software analysis and design skills.

C4 : Exhibit Implementation skills.

C5 : Exhibit project management skills.

C6 : understand the quality management criteria

Book of Study

1. Marvin Gore & John Stubbe -Elements Of System Analysis, Fourth Edition, Galgotia

2. K K Aggarwal, Yogesh Singh - Software Engineering,Third Edition, New Age International Publications.

References

1. Roger S Pressman - Software Engineering: A Practitioner's Approach, Sixth Edition, McGraw-Hill Higher Education.
2. Ian Sommerville - Software Engineering , Seventh Edition, Pearson Education.
3. Pankaj Jalote - An Integrated approach to Software Engineering, Second Edition, Narosa Publishing Company.

BLUE PRINT
BVoc III Semester - Core
CA3B07B18 : SYSTEM ANALYSIS AND SOFTWARE ENGINEERING

Modules	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Short Answer) 15 Marks 2/4
I	3	1	1
II	3	2	
III	2	2	1
IV	2	2	1
V	2	2	1
Total	12	9	4

SEMESTER III

CA3B05B18 : DATA STRUCTURES USING C++

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

Aim of the Course

- Demonstrate a familiarity with major algorithms and data structures.
- To introduce the basic techniques of algorithm analysis.
- Be familiar with several sorting algorithms including bubble sort, selection sort and searching algorithms such as linear search and binary search.
- Master the implementation of linked data structures such as linked lists and binary trees
- Be familiar with advanced data structures such as balanced search trees, hash tables, priority queues etc.

Course Overview and Context :

This course introduces the design of data structures for representing information in computer memory. Topics include: Abstract data types and their implementations; Stacks; Queues; Priority queues; Sorting; Recursion.This course assumes that students know how to analyze simple algorithms and data structures. It introduces students to the design of computer algorithms, as well as analysis of sophisticated algorithms.

Syllabus Content

Module I (12 hours)

Concept of Structured data - Data structure definition, Different types and classification of data structures, Arrays – Memory allocation and implementation of arrays in memory, array operations, Applications - sparse matrix representation and operations, polynomials representation and addition, Concept of search and sort – linear search, binary search, selection sort, insertion sort, quick sort.

Module II (12 hours)

Stacks – Concepts, organization and operations on stacks using arrays (static), examples, Applications - Conversion of infix to postfix and infix to prefix, postfix evaluation, subprogram calls and execution, Multiple stacks representation. Queues - Concepts, organization and operations on queues, examples. Circular queue – limitations of linear queue, organization and operations on circular queue. Double ended queue, Priority queue.

Module III (12 hours)

Linked list: Concept of dynamic data structures, linked list, types of linked list, linked list using pointers, insertion and deletion examples, circular linked list, doubly linked lists, Applications- linked stacks and queues, memory management basic concepts, garbage collection.

Module IV (12 hours)

Trees - Concept of recursion, trees, tree terminology, binary trees, representation of binary trees, strictly binary trees, complete binary tree, extended binary trees, creation and operations on binary tree, binary search trees, Creation of binary search tree, tree traversing methods – examples, binary tree representation of expressions.

Module V (12 hours)

File - Definition, Operations on file (sequential), File organizations - sequential, Indexed sequential, random files, linked organization, inverted files, cellular partitioning, hashing – hash tables, hashing functions, collisions, collision resolving methods.

Competencies of the Course

C1 : Show how data structures map onto physical memory.
C2 : Identify linear versus nonlinear data structures.
C3 : Manipulate data structures with basic operations.
C4 : Compare different implementations of the same data structure.
C5 : Gain a thorough knowledge of different techniques for calculating a hash function.

C6 : Understand different algorithm analysis method

Books of Study

1. G.S Baluja - Data Structures Through C++ (A Practical Approach), Second Edition-2004, Danapat Rai & Co.

2. Ellis Horowitz and Sartaj Sahni - Fundamentals of Data Structures in C++ , Second Edition, Galgotia Publications.

References

1. Seymour Lipschutz, Theory and Problems of Data Structures, Schaums Outline Series,2006, McGraw Hill

2. Yedidyah Langgsam, Moshe Augustein, Aaron M Tenenbaum- Data structures using C and C++ , Second Edition, Prentice Hall

BLUE PRINT

BVoc III Semester - Core

CA3B05B18 : DATA STRUCTURES USING C++

Modules	PART A- (short answer) 2 marks 10/12	PART B- (short essay) 5 marks 6/9	PART C- (essay/problem) 15marks 2/4
I	3	1	1
II	3	2	
III	2	2	1
IV	2	2	1
V	2	2	1
Total	12	9	4

SEMESTER III

VSD3SP05B18 : Software Lab V (DATA STRUCTURES USING C++)

CREDITS : 5

TOTAL LECTURE HOURS : 75 HOURS

Syllabus Content

Module I (20 Hours)

Array – Insertion , Deletion, Polynomial addition using arrays
Sort – Selection, Insertion, Quick
Search – Linear search, Binary search
Sparse matrix – Sparse form representation, transpose and addition using the sparse form

Module II (20 Hours)

Stack - Implementation using arrays (linear stack), Infix to postfix conversion, Postfix evaluation
Queue – Implementation using arrays (linear queue), Implementation of circular queue

Module III (20 Hours)

Singly linked list – Implementation using dynamic memory allocation techniques, arrange the list based on the ascending or descending order of the information field, concatenate two linked lists, interchange any two nodes in a list, Implementation of circular list, Implementation of linked stacks and queues.
Doubly linked list – Implementation of doubly linked list, Implementation of circular doubly linked list.

Module IV (15 Hours)

Creation of binary search trees, Insertion and deletion of nodes, Tree traversals.

Scheme of Evaluation for software lab III external is as follows:

(There will be two questions)

Division of Marks (Practical - 3 hours External)

First program - questions from module 1 & II **- 25 marks**

1. Logic – 10 marks
2. Successful compilation – 8 marks
3. Result – 7 marks

Second program – questions from module III & IV **- 35 marks**

1. Logic – 20 marks
2. Successful compilation –10 marks
3. Result – 5 marks

Viva Voce **- 10 marks**
Lab Record - **- 10 marks** (Minimum of 25 Programs)
Total Marks - 80 marks

SEMESTER III

VSD3SP06B18 : HTML5 AND CSS3 (PRACTICAL ONLY)CREDITS

CREDITS : 5CREDITS (Practicals)

TOTAL LECTURE HOUR : 5 HOURS/WEEK

Aim of the Course

In this course, the student will gain an understanding of the latest approaches to web site design and consistency. Students will work with images and learn to add formatting and style with CSS to encourage consistency and easy editing in web site design.

Syllabus Content

Module I (15 HOURS)

Overview of HTML5

Defining HTML5 - HTML5 markup - Key HTML5 elements - Web forms - New HTML5 elements - HTML5 APIs and supporting technologies - Geolocation in action - Web workers - Web storage - CSS animations - CSS transitions - CSS 2D and 3D transformations - CSS3 backgrounds, borders, RGBa colors, gradients, drop shadows, and rounded corners - @font-face web fonts.

Fundamentals of HTML, XHTML, and CSS

Web languages - Details of XHTML syntax - W3C and page validation - HTML structure - Placing images in HTML - Role of CSS - Styling a heading - Class styles and the element - Three ways to use styles - Internal vs. external style sheet

Module II (15 HOURS)
Formatting Text with CSS

Importance of typography on the web - Challenges of fonts on the web - Setting a font-family - Sizing text with CSS - Pixels and points are not the best choices - Using a combination of percent and the em measurement - Using margins to modify space between your text - Setting paragraph line-height - Transforming text with CSS - Working with HTML lists - Styling HTML lists

Basic (X)HTML Formatting (15 HOURS)

Making Text Bold or Italic - Changing the Size of Text and Using a Monospaced Font - Using Preformatted Text - Quoting, Superscripts, and Subscripts - Marking Changed Text .

Module III

Introduction to CSS Layout

Working with the CSS reset file - Brief history of layout techniques on the Web - Page layout options - element: creating a two-column fixed-width CSS layout - CSS float property - Creating columns with the float property - Working with the clear property - Creating a list-based navigation using floats - Adding text styles - Effect of margins and padding on your fix-width layout - Using margins and padding for layout - Styling your footer with a background image.

Module IV(15 HOURS)

Advanced CSS Layout

Building your page layout - Removing the background color - Working with CSS background images - Using hacks to solve layout problems - Enhancing your CSS navigation bar - Moving internal styles to the external style sheet - Creating a style for the active page - Adding images to sidebar - Working with absolute positioning

Module V(15 HOURS)

Creating HTML5 Forms

Need for updated forms – Forms - Components of a form - Adding new HTML5 input types and attributes - Creating an order form with new HTML5 input type and attributes - HTML5 form features under development.

Offline Storage in HTML5

Offline storage in HTML5 - HTML5 storage types – Local Storage methods and example

Course Competencies

- Build effective web sites with HTML5
- Comprehend the benefits of CSS3 to web pages
- Acknowledge browser variations in handling CSS

References

Beginning HTML5 and CSS3 , Christopher Murphy, Richard Clark, Oli Studholme, Divya Manian, Apress

SEMESTER IV

VSD4S04B18 : OPERATING SYSTEMS

CREDITS : 4

TOTAL LECTURE HOURS : 60 Hours

Aim of the Course :

- To explore the necessary components and functions of operating system
- To give a clear idea on different scheduling algorithms
- Memory management policies handles by OS.
- Deadlock ,Synchronizations Concepts
- Case study about UNIX .

Course Overview and Context :

Operating system is the manager of computer resources.This course is intended to introduce the concepts,structures,features,trends and design mechanism of OS.It covers the fundamentals of multiple operating systems and their associated applications.Students will gain insight into both the difference and similarities between os architecture.

Syllabus Content

Module I: (12 hrs)

Introduction: OS Definition, Functions, Evolution of OS,OS Structure Operating System Operations,Operating System Services, User Operating System Interface, System Calls, Types of System Calls.

Module II:(12 hrs)

Process: Basic Concepts, Process Scheduling, Operations on Processes, Inter process communication, Process Scheduling - Scheduling Criteria, Scheduling Algorithms, Multiple Processor Scheduling.

Module III:(12 hrs)

Process Coordination: Synchronization - The Critical Section problem, Semaphores, Classic Problems of Synchronization, Monitors. Deadlocks: System Model, Deadlock Characterization, Methods of handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock.

Module IV: (12 hrs)

Memory Management: Memory Management Strategies - Swapping, Contiguous memory allocation,Paging, Segmentation. Virtual Memory Management- Demand paging, Page Replacement.

Module V: (12 hrs)

Storage Management: File System: - File Concept, Access Methods, Directory structure. Implementing File Systems:-File System Structure, Allocation Methods, Free Space Management, Disk Scheduling.

Course Competencies

C1: Describe the types of OS and its service provided

C2: Describe how an OS manages processes and threads.

C3: Compare and contrast alternative CPU scheduling and threads

C4: Understanding the operating system UNIX

Book of study*:*

1. Abraham Silberschatz, Peter Galvin and Greg Gagne - Operating System Principles, Seventh Edition, John Wiley

2. William Stallings - Operating Systems, Sixth Edition, Prentice Hall of India, Pearson

Reference:

1. Milan Kovic - Operating Systems, 2ndEdition, (TMH)

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BVoc IV Semester - Core
VSD4S04B18 : OPERATING SYSTEMS

Modules	PART A (short answer) 2 marks 10/12	PART B (short essay) 5 marks 6/9	PART C (essay/problem) 15marks 2/4
I	3	1	1
II	3	2	
III	2	2	1
IV	2	2	1
V	2	2	1
Total	12	9	4

SEMESTER IV

VSD4S05B18 : PROGRAMMING IN JAVA

CREDITS : 4

TOTAL LECTURE HOURS : 60 Hours

Aim of the Course :

This course is designed to give you exposure to basic concepts of object-oriented technology. This course will help in learning to write programs in Java using object-oriented paradigm. Approach in this course is to take Java as a language that is used as a primary tool in many different areas of programming work.

Course Overview and Context : In this course student will become familiar with features of Java language, they will learn how to write Java code according to Object-Oriented Programming principles, how to design GUI applications and Applets using AWT, how to develop multithreaded and Networking applications and how to create dynamic pages.

Syllabus Content:

Module I (12 hours)

Object oriented programming-Encapsulation-Inheritance-Polymorphism-Genesis of Java-characteristics of java- program structure-identifiers-operators-variables-literals-data types-Arrays. Control Statements-selection statements-iterative statements-jump statements - Loops- while loop-do while loop- for loop

Module II (12 hours)

Classes-declaration –object references-instantiation- method declaration-method calling – this operator-constructor- method overloading-constructor overloading-method overriding-inheritance-super class-dynamic method dispatch-final-static-abstract classes – String Handling.

Module III (12 hours)

Packages - creating packages-using packages-Interfaces-Exception Handling Techniques-try-catch-throw-throws-finally -Multithreading- creation of multithreaded program-Thread class-Runnable interface- thread priorities.

Module IV (12 hours)

The Applet class - Event Handling - Working with windows, Graphics and Text using AWT Classes- AWT Controls - Layout Managers and menus - Images. Java I/O Programming

Module V **(12 hours)**

JDBC: JDBC Architecture - Installing the ODBC Driver - Connecting to a Database – StructuredQuery language. JDBC programming concept: Database URL - Executing the action commands –
Introducing Swing: swingcomponentsand containers - the swing packages - Painting in a Swing - Exploring Swing: JlabelandImageIcon - JtextField - The Swing Buttons - Jtabbed Pane - Jscroll Pane - Jlist - JcomboBox -Trees- Jtable.

Course Competencies

C1 : Understand and apply object oriented principles.

C2 : Write a java program using predefined java classes available in JDK.

C3 : Use efficiently conditional and looping constructs in Java code.

C4 : Define and use a class in Java.

C5 : Understand Applets.

Learning Resources

Text Books:

1. Herbert Schildt - The Complete Reference Java - Tata McGraw Hill Publishing CompanyLimited Edition 7, 2007.
2. Cays Horstmann and Gary Cornell - Core Java Volume II, Pearson Edition, 2001
3. Phil Hanna - JSP 2.0: The Complete Reference -Tata McGraw Hill Publishing CompanyLimited, Edition 2, 2003

References:

1. E. Balaguruswamy, "Programming with Java: A Primer", 5E,TMH, 1998.
2. P. Naoughton and H. Schildt - Java2: The Complete Reference - Tata McGraw Hill PublishingCompany Limited, Edition 3, 1999.
3. K. Arnold and J. Gosling - The Java Programming Language - Edition 2, Publication, 2000
4. Deitel&Deitel,"Java How to program", 8th ed., PHI.

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BVoc IV Semester - Core
VSD4S05B18 : PROGRAMMING IN JAVA

Modules	PART A (short answer) 2 marks 10/12	PART B (short essay) 5 marks 6/9	PART C (essay/problem) 15marks 2/4
I	3	1	1
II	3	2	
III	2	2	1
IV	2	2	1
V	2	2	1
Total	12	9	4

SEMESTER IV

VSD4SP07B18 : SOFTWARE LAB VII (PROGRAMMING IN JAVA)

CREDITS : 4

TOTAL LECTURE HOURS : 60 Hours

Syllabus Content:

Part I. Applet, JDBC connection and swing based Programs

Part II (using class and read inputs from keyboard)

Java Programs: Method Overloading-Method Overriding-inheritance-abstract class interfaces-packages-Exception Handling-Multithreading

Scheme of Evaluation for software lab V external is as follows:

(There will be two questions; the first from PartI and second from PartII)

Division of Marks (Practical-3 hours External)

First program-questions from Part I	**-25marks**
1.Logic – 10 marks	
2.Successful compilation – 8 marks	
3. Result – 7 marks	
Second program– questions from Part II	**-35marks**
1.Logic – 20 marks	
2.Successful compilation –10 marks	
3. Result – 5 marks	
VivaVoce	**-10marks**
Lab Record (Minimum of 25 Programs)	**-10marks**
Total Marks	**-80marks**

SEMESTER IV

VSD4SP08B18 : SOFTWARE LAB VIII (PHP & SQL)

CREDITS : 2

TOTAL LECTURE HOURS : 30 Hours

1) Creatingsimple programs based on PHP
2) Programs usingPHP functions
3) Programs based on MYSQL

Scheme of Evaluation for software lab IV external is as follows:

(There will be two questions; the first from LINUX and second from PHP)

Division of Marks (Practical-3 hours External)

First program-questions fromLINUX **-25marks**

1. Logic – 10 marks
2. Successful compilation – 8 marks
3. Result – 7 marks

Second program– questions from PHP **-35marks**

1. Logic – 15 marks
2. Successful compilation –15 marks
3. Result – 5 marks

VivaVoce **-10marks** Lab
Record **-10marks**
Minimum of 10 Programs PHP -Minimum of 15 Programs)

Total Marks -80marks

SEMESTER V

VSD5S06B18 : Computer Networks

CREDITS : 3

TOTAL LECTURE HOURS : 45 Hours

Aim of the Course :

To understand basics of data communication and networking

Course Overview and Context

The subject introduces the concept of networks, different topologies and network devices. The OSI reference model is dealt to introduce different layers. The layers are discussed in detail in later chapters of the subject. Error detection and correction mechanisms are dealt to give an exposure about how actually the network handles the data. The discussion about routing algorithms gives exposure to the sending of information in a network. Congestion handling is also dealt in the subject

Syllabus Content

Module 1 (9 hours)

Introduction to Networks, Data and signals-analog and digital, periodic analog signals, digital signals, bit rate, baud rate, bandwidth. Transmission impairments - attenuation, distortion and noise.
Data communication protocols and standards, Network models - OSI model-layers and their functions. TCP/IP protocol suite.

Module II (9 hours)

Bandwidth utilization Multiplexing: FDM, TDM, spread spectrum. Transmission Media- guided media and unguided media. Switching: message, Circuit and packet switched networks, datagram networks, virtual- circuit networks.

Module III (9 hours)

Data link layer: Error Detection and Correction, Framing, flow and error control, Protocols - Noiseless channels (Simplest, Stop and Wait) and Noisy channels (Stop and Wait and Piggy Backing).
Multiple Access Protocols. Random Access-ALOHA, CSMA. Wired LANs-IEEE standards, wireless LANs-Bluetooth, Cellular Telephony

Module IV (9 hours)

Network layer and Transport layer: Repeaters, Bridges, Gateways and routers. Logical addressing – IPV4 and IPV6 addressing, Internet protocol - IPV4 and IPV6. Connectionless and Connection Oriented Services: UDP and TCP. Congestion Control, Quality of Service.

Module V **(9 hours)**

Application layer: HTTP, FTP, SMTP, DNS. Network security: Common Threats- Firewalls (advantages and disadvantages), Cryptography.

Competencies of the Course

C1 : Define the basic concept of data communications

C2 : Explain the fundamentals principles of data communications.

C3 : List the characteristics of the various media used in data communications.

C4 : Relate how data is transmitted in a data communications network.

C5 : Describe protocols used in data communications.

Book of study:

1. B. A. Forouzan - Data communication and Networking, Fourth edition-,TMH
2. Andrew S Tanenbaum - Computer Networks ,Fourth Edition, Prentice Hall of India.

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BVoc V Semester - Core
VSD5S06B18 : Computer Networks

Modules	PART A (short answer) 2 marks 10/12	PART B (short essay) 5 marks 6/9	PART C (essay/problem) 15marks 2/4
I	3	1	1
II	3	2	
III	2	2	1
IV	2	2	1
V	2	2	1
Total	12	9	4

SEMESTER V

VSD5S07B18 : PYTHON PROGRAMMING

CREDITS : 4

TOTAL LECTURE HOURS : 60 Hours

Aim of the Course :

To know the basics of algorithmic problem solving

Course Overview and Context :

- To do input/output with files in Python.
- To use Python data structures –- lists, tuples, dictionaries.
- To define Python functions and call them.
- To develop Python programs with conditionals and loops.
- To read and write simple Python programs.

Module I (12 hours)

Introduction to python, features,downloading and installing python, running python, python virtual machine(PVM),python implementation alternatives,Python interpreter and interactive mode; values and types: int, float, boolean, string, and list; variables, expressions

Module II (12 hours)

DATA, EXPRESSIONS, STATEMENTS

Statements, tuple assignment, precedence of operators, comments; modules and functions, function definition and use, flow of execution, parameters and arguments; Illustrative programs: exchange the values of two variables, circulate the values of n variables, distance between two points.

Module III (12 hours)

CONTROL FLOW, FUNCTIONS

Conditionals: Boolean values and operators, conditional (if), alternative (if-else), chained conditional (if-elif-else); Iteration: state, while, for, break, continue, pass; Fruitful functions: return values, parameters, local and global scope, function composition, recursion; Strings: string slices, immutability, string functions and methods, string module; Lists as arrays.

Module IV (12 hours)

LISTS, TUPLES, DICTIONARIES

Lists: list operations, list slices, list methods, list loop, mutability, aliasing, cloning lists, list parameters; Tuples: tuple assignment, tuple as return value; Dictionaries: operations and methods; advanced list processing – list comprehension

Module V **(12 hours)**

FILES, MODULES, PACKAGES

Files and exception: text files, reading and writing files, format operator; command line arguments, errors and exceptions, handling exceptions, modules, packages

Competencies of the Course

Upon completion of the course, students will be able to

- Develop algorithmic solutions to simple computational problems
- Read, write, execute by hand simple Python programs.
- Structure simple Python programs for solving problems.
- Decompose a Python program into functions
- Represent compound data using Python lists, tuples, dictionaries
- Read and write data from/to files in Python Programs.

Book of Study

1. Allen B. Downey, ``Think Python: How to Think Like a Computer Scientist‘‘, 2nd edition, Updated for Python 3, Shroff/O‘Reilly Publishers, 2016 (http://greenteapress.com/wp/thinkpython/)
2. Guido van Rossum and Fred L. Drake Jr, ―An Introduction to Python – Revised and updated for Python 3.2, Network Theory Ltd., 2011.

REFERENCES:

1. John V Guttag, ―Introduction to Computation and Programming Using Python‘‘, Revised and expanded Edition, MIT Press , 2013
2. Robert Sedgewick, Kevin Wayne, Robert Dondero, ―Introduction to Programming in Python: An Inter-disciplinary Approach, Pearson India Education Services Pvt. Ltd., 2016.
3. Timothy A. Budd, ―Exploring Python‖, Mc-Graw Hill Education (India) Private Ltd.,, 2015.
4. Kenneth A. Lambert, ―Fundamentals of Python: First Programs‖, CENGAGE Learning, 2012.
5. Charles Dierbach, ―Introduction to Computer Science using Python: A Computational ProblemSolving Focus, Wiley India Edition, 2013.
6. Paul Gries, Jennifer Campbell and Jason Montojo, ―Practical Programming: An Introduction to Computer Science using Python 3‖, Second edition, Pragmatic Programmers, LLC, 2013

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BVoc V Semester - Core
VSD5S07B18 : PYTHON PROGRAMMING

Modules	**Hours**	**PART A** **(Short Answer)** **2 Marks** **10/12**	**PART B** **(Short Essay)** **5 Marks** **6/9**	**PART C** **(Essay / Problem)** **15 Marks** **2/4**
I	14	3	2	1
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	0

SEMESTER V

VSD5S08B18 : JAVA SCRIPT AND JQUERY

CREDITS : 3

TOTAL LECTURE HOURS : 45 Hours

Aim of the Course :

1. To develop the skill & knowledge in JavaScript and JQuery-enhanced web page.
2. Students will understand the knowhow and can function either as an entrepreneur or cantake up jobs in the multimedia and Web site development studio and other information technology sectors.

Syllabus Content

Module I (9 hours)

The Nature of JavaScript

The Evolution of Scripting Languages, JavaScript -Definition, Essential features of javascript, Lexical structure, Datatypes and values- Numbers, Strings, Functions, Objects, Boolean Values, Arrays, null, defined, date object, Variables - variable typing, variable declaration, variable scope. First javascript program.

Module II (9 hours)

Script Writing Basics

Expressions and operators, Using Conditional Statements for Decision Making,if Statements,if-else Conditional Statements, while Conditional Statements , break and continue Statements, for Conditional Statements,for in conditional statement, with statement, switch statement,Creating objects, object properties, checking property existence, deleting properties.

Module III (9 hours)

Adding Interactivity to a Web Page

Arrays, reading and writing array elements, adding new elements to an array, deleting array elements, array length, iterating through arrays, array methods, ,Creating Functions in JavaScript, DeclaringFunction, Designing a Simple Function,basic event handling,mouse events,keyboard events,onload event.

Module IV (9 hours)

Introduction to jQuery

Introduction,advantages,getting jquery,adding jquery to a page, selectors in jquery,jquery filters, understanding jquery selections,adding content to a page, setting and reading tag attributes, classes, reading and removing html attributes, Events, using events the jquery way, jquery events, event object, Jquery effects- showing and hiding elements, fading elements in and out,sliding elements.

Module V **(9 hours)**

jQuery and AJAX

Using the ajax() API, Loading data with GET & POST, Working with JSON data, Serialising your form handling with serialize() Handling a completed AJAX request.

Book of Study

1. JavaScript & jQuery: The Missing Manual, 2nd Edition By David Sawyer McFarland Publisher: O'Reilly Media.
2. Javascript : the definitive guide ,By David Flanagan.

References

1. JavaScript and JQuery: Interactive Front-End Web Development,Jon Duckett
2. HTML5 Black Book: Covers CSS3, Javascript, XML, XHTML, Ajax, PHP and Jquery Paperback – 2011 by Kogent Learning Solutions Inc. (Author)

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BVoc V Semester - Core
VSD5S08B18 : JAVA SCRIPT AND JQUERY

Modules	Hours	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Essay / Problem) 15 Marks 2/4
I	14	3	2	1
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	0

SEMESTER V

VSD5SP09B18 : SOFTWARE LAB IX (JAVA SCRIPT AND JQUERY)

CREDITS : 4

TOTAL LECTURE HOURS : 60 Hours

Aim of the Course

To write, test, and debug simple javascript programs using browsers.
To implement javascript programs with conditionals and loops.
Use functions for structuring javascript programs.

LIST OF PROGRAMS:

1. Compute the GCD of two numbers.
2. Compute the sum of n natural numbers.
3. Implement a calculator
4. Find the factorial of a number
5. Write programs that implements javascript functions.
6. Use jquery selectors to dynamically add html elements
7. Use jquery selectors to change css properties to add dynamism to web pages.
8. Write jquery programs to handle various events.
9. Write jquery programs using various selectors.

SEMESTER V

VSD5SP10B18 : SOFTWARE LAB X (PYTHON PROGRAMMING)

CREDITS : 4

TOTAL LECTURE HOURS : 60 Hours

Aim of the Course:

- To write, test, and debug simple Python programs.
- To implement Python programs with conditionals and loops.
- Use functions for structuring Python programs.
- Represent compound data using Python lists, tuples, dictionaries.
- Read and write data from/to files in Python.

LIST OF PROGRAMS:

1. Compute the GCD of two numbers.
2. Compute the sum of n natural numbers.
3. Find the square root of a number (Newton's method)
4. Find the factorial of a number
5. Find the maximum of a list of numbers
6. Linear search and Binary search
7. Selection sort, Insertion sort
8. Merge sort
9. First n prime numbers
10. Programs that take command line arguments (word count)
11. Find the most frequent words in a text read from a file

SEMESTER VI

CA6B12aB18 : DATA MINING

CREDITS : 6

TOTAL LECTURE HOURS : 90 Hours

Aim of the Course :

This course helps the students to understand the overall architecture of a data warehouse and techniques and methods for data gathering and data pre-processing using OLAP tools. The different data mining models and techniques will be discussed in this course. Data mining and data warehousing applications in bioinformatics will also be explored

Course Overview and Context :

Students would learn data mining techniques and methods in integrating and interpreting the bioinformatics data sets and improving effectiveness, efficiency and quality for data analysis.

Syllabus Content:

Module I **(18 hours)**

Introduction Data Mining, Data Ware House, Transactional Databases, Data Mining Functionalities Characterization and Discrimination, Mining frequent patterns, Association and correlation, Classification and Prediction, Cluster Analysis, Classification of Data Mining Systems, Data Mining Task Primitive, Integration of Data Mining systems, Major issues in Data Mining, Data integration and transformation, Data reduction, Data discretization.

Module II **(18 hours)**

Data Warehouse and OLAP technology Data Warehouse, Multidimensional data Model, Data warehouse architecture, Data Warehouse implementation, OLAP, Data Warehouse and data mining.

Module III **(18 hours)**

Association Rules and Classification Concepts Efficient and Scalable Frequent item set Mining methods, Mining various kind of association rules, from association mining to Co-relation analysis, Classification and prediction, Issues, Classification by Decision tree induction, Bayesian Classification, Rule-based classification, Support Vector Machines, Learning from your neighbors, Prediction.

Module IV **(18 hours)**

Cluster Analysis Definition, Types of data in cluster analysis, A categorization major Clustering methods- Partitioning methods, K-means and k-medoids, from k-medoids to CLARANS,Hierarchicalmethods,Density based methods.

Module IV **(18 hours)**

Mining Complex Data Spatial Data Mining, Multimedia Data Mining, Text Mining.

Competencies of the Course

C1 : Understand and express the business value of data ware housing and business analytics.

C2 : Understand different data models.

C3 : Define Cluster Analysis Process.

Book of Study

1.Jiawei Han and Micheline Kamber,"Data Mining - Concepts and Techniques" (Second Edition),Elsevier, 2006

REFERENCES:

1. Witten and Frank ,"Data Mining Practical Machine Learning Tools and Techniques" (Second Edition) Elsevier, 2005

2. Soman, Divakar and Ajay,"Data Mining Theory and Practice" PHI, 2006

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Modules	PART A (short answer) 2 marks 10/12	PART B (short essay) 5 marks 6/9	PART C (essay/problem) 15marks 2/4
I	3	1	1
II	3	2	
III	2	2	1
IV	2	2	1
V	2	2	1
Total	12	9	4

SYLLABI
FOR
B.Voc. SOFTWARE DEVELOPMENT
GENERAL COURSES

SEMESTER I

VSD1G01B18: LE FRANÇAIS ÉLEMENTAIRE

Credits : 4

Total Lecture Hours : 60 hrs

Aim of the course: It aims at building a solid foundation in the acquisition of standard French through basic sound patterns of the French language and fundamental French grammar to the students.

Course Overview and Context: It focuses on basic sound patterns of the French language and rudiments of French grammar.

Syllabus Content:

Module I (16 hours)

Bienvenue – Qui est-ce ? Les alphabets – Les sons – les accents - saluer-se présenter quelqu'un - faire connaissance avec quelqu'un –les nombres – les verbes être, s'appeler – l'article défini

Module II (14 hours)

Ça va bien ? – correspond@nce.com Les verbes aller et avoir – l'adjectif possessif au singulier – l'article indéfini – la politesse – demander des nouvelles d'une personne – chercher un(e) correspondant(e)

Module III (14 hours)

Trouvez l'objet – Portrait-robot Nommer, monter et situer des objets – exprimer la possession – indiquer les couleurs – les pronoms toniques – le pluriel des articles, des verbes, des adjectifs possessifs, la négation

Module IV (14 hours)

Shopping – Le coin des artistes Caractériser un objet – faire des achats - exprimer des goûts – l'adjectif interrogatif – les adjectifs interrogatifs – l'interrogation – comprendre un texte court

Module V (14 hours)

Appartement à louer – C'est par où ? Situer un lieu sur un plan – décrire un appartement – indiquer une direction – indiquer un moyen de transport – les prépositions – l'impératif – l'adverbe y – comprendre une annonce immobilière – présenter des informations touristiques

Competencies of the course:

- Develop language skills
- Introduce oneself to a group
- Understand and use familiar everyday expressions and basic phrases
- Develop vocabulary and grammar skills

Learning Resources

Textbook

Guy Capelle, Robert Menand : Le Nouveau Taxi 1, Hachette Livre 2009, Lessons 1-10, (Pp 13 - 37)

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B.Voc I Semester – General Component (French)

VSD1G01B18: LE FRANÇAIS ÉLEMENTAIRE

Modules	Hours	Part A 2 marks 10/12	Part B 5 marks 6/9	Part C 15 marks 2/4
I	16	3	1	0
II	14	2	2	1
III	14	2	1	1
IV	14	2	2	1
V	14	3	3	1

B.Voc PROGRAMME- SOFTWARE DEVELOPMENT- CORE COURSE
VSD1G01B18: LE FRANÇAIS ÉLEMENTAIRE

MODEL QUESTION PAPER
I Semester Examination

Time : 3 Hrs **Total Marks : 80**

PART A
(Answer any 10 questions. Each question carries 2 marks)

I. Répondez à **dix** questions.

1. Vous habitez où ? Quelle est votre nationalité ?
2. Écrivez les nombres en lettres de dix à trente.
3. Rédigez une carte de visite.
4. Vous avez quel âge ? Quelle est votre profession ?
5. Nommez quatre pays francophones.
6. À qui est ce sac ? Il est de quelle couleur ?
7. Quels vêtements est-ce que vous portez ? Quel est le prix de ces vêtements ?
8. Écrivez quatre couleurs que vous préférez en français.
9. Écrivez deux phrases pour demander son chemin.
10. Faites deux phrases avec contre et dans.
11. Écrivez deux phrases pour s'informer sur un lieu.
12. Où se trouve votre chambre ? À quel étage ?

(10x2=20 marks)

PART B
(Answer any 6 question.Each question carry 5marks)

II. Répondez à **six** questions.

13. Saluez votre voisin et présentez-vous.
14. Que signifie les mots suivants ?
    a. étg. b. chbre c. imm. d. sdb e. cuis.
15. Choisissez la bonne réponse.
    a. La femme a une robe … (vert/verte)
    b. L'homme et la femme ont des chaussures … (noirs/noires)
    c. La femme n'a pas de lunettes … (blancs/blanches)
    d. L'homme et la femme sont … (petits/petites)
    e. L'homme porte une chemise … (bleue/bleu)
16. Vous voulez participer à Bingo-Bingo. Complétez la fiche.
17. Trouvez la question.
    Ex : 42 – Quelle est la taille de ce pantalon, s'il vous plaît ?
    a. Elle est rouge.
    b. 125 euros.

c. J'aime beaucoup.
d. Il est grand.
e. Gris, noir et blanc.

18. Complétez avec ce, cette ou ces.
    a. J'aime bien la couleur de … chaussures.
    b. Et … pantalon bleu ? Il est cher, non ?
    c. … sacs sont très grands.
    d. … robe est très jolie, j'aime beaucoup.
    e. Comment est-ce que vous trouvez … lunettes ?
19. Complétez les questions avec quel ou quelle puis associez les phrases.

a. … est votre nom ?	i. J'habite 20, rue de Bourgogne, à Paris.
b. … est votre âge ?	ii. C'est le 01 26 32 41 60.
c. … est votre adresse ?	iii. Je m'appelle Thurame.
d. … est votre numéro de téléphone ?	iv. J'ai 25 ans.

20. Trouvez les contraires.
    a. petit b. récent c. sombre d. calme
21. Répondez en utilisant y.
    a. Elle est dans le jardin ? Oui, ….
    b. Tu passes à la poste ? Oui, …
    c. Il entre au musée ? Oui, …
    d. Vous arrivez au Louvre ? Oui, …
    e. Vous allez dans ce magasin ? Oui, …

(6x5=30 marks)

PART C
(Answer any 2 questions.Each question carry 15 marks)

III. Répondez à **deux** questions en quinze phrases.
22. Écrivez un e-mail à une personne de votre famille pour décrire votre chambre.
23. Présentez-vous et votre famille. Écrivez un e-mail à votre correspondante.
24. Vous êtes devant votre fac. Indiquez à votre ami comment aller à la poste.
25. Vous entrez dans une boutique de vêtements. Vous demandez un pantalon, puis un pull. Jouez la scène avec votre voisin.

(2x15=30 marks)

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SEMESTER I

CA1B01B18 : COMPUTER FUNDAMENTALS AND DIGITAL PRINCIPLES

Credits : 4

Total Lecture Hours : 60 hrs

Aim of the course:

- To explain and apply the basic concepts of number systems and the use of Binary, Decimal and Hexadecimal number systems, and demonstrate competence in the conversion of numbers from one representation to another.
- To define the basic logic gates, such as AND, OR NOT in terms of Truth Tables and utilize Truth Tables to prove the functionality of simple gate networks. Explain the universality of NAND and NOR gates.
- To demonstrate familiarity with Boolean Operations, the Laws of Boolean Algebra, DeMorgan's Theorems and the application of Boolean Algebra and Karnaugh Maps to simplify logic circuits.
- To describe and employ Combinatorial Logic to create Adders, Comparators, Decoders, Encoders, Multiplexers and De-multiplexers.
- To implement flip-flops and related storage devices, use sequential logic to create counters, registersTo explain and describe the basic memory components of a computer

Course Overview and Context:

Introduction to the basics of digital systems and their design; the analysis of digital circuits using Boolean Algebra and logic reduction; concepts of memory systems and examination of the various designs, flip-flops, counters. Introduction to memory systems, micro-processors and computer architecture. This is a core course for the students to gain more insights to the actual working principles of computing systems.

Syllabus Content:

Module I (12 hours)

Introduction: Functional units of a computer system, Different types of computers, Computer Software and Hardware, Types of software-System software and Application program. Characteristic of computers. Input Devices – Keyboard, Mouse, Optical input devices, Output devices – Monitors and Printers.

Module II (12 hours)

Introduction to Operating Systems and Networking: Definition of an Operating System - Different types of PC Operating Systems. Computer Networks- categories of networks - LAN,WAN, MAN. The Internet - Working of Internet - Major Features of Internet.

Module III (12 hours)

Number Systems: Base or radix ,Positional number system, Popular number systems(Decimal, Binary, Octal and Hexadecimal), Conversion-From one number system to another, Concept of binary addition and subtraction, Complements in binary number systems,1^S Complement, 2^S Complement and their applications, Signed magnitude form, BCD numbers- concept and addition.

Module IV (12 hours)

Boolean Algebra and Gate Networks: Logic gates- AND, OR, NOT, NAND and NOR Truth tables and graphical representation, Basic laws of Boolean Algebra, Simplification of Expressions, De Morgans theorems, Dual expressions, Canonical expressions, Min terms and Max terms, SOP and POS expressions, Simplification of expression using K-MAP (up to 4 variables), Representation of simplified expressions using NAND/NOR Gates, Dont care conditions, XOR and its applications, parity generator and checker.

Module V (12 hours)

Sequential and Combinational Logic. Flip flops- Latch, Clocked, RS, JK, T, D and Master slave , Adders-Half adder, Full adder(need and circuit diagram), Encoders, Decodes, Multiplexers and Demultiplexers (working of each with diagram), Analog to digital and digital to analog converters (Diagram and working principle), : Concept of Registers, Shift Registers

Course Competencies

C1 :Convert a given number from one system to an equivalent number in another system.

C2 : Illustrate the construction of a binary code.

C3 : Determine the output and performance of given combinational and sequential circuits.

C4 : Describe the significance of different criteria for design of digital circuits.

C5 : Compare the performances of various combinational and sequential circuits.

C6 : Able to analyze, design and evaluate digital circuits, of medium complexity.

Book of Study

1. Peter Nortons- Introduction to Computers, Sixth Edition, Published by Tata McGraw Hill

2. P K Sinha & Priti Sinha - Computer Fundamentals, Fourth Edition, BPB Publications.

3. M Morris Mano-Digital Logic and Computer design, Fourth Edition, Prentice Hall.

References

1. Thomas C Bartee- Digital computer Fundamentals, Sixth Edition, TATA McGraw Hill Edition

2. Thomas L Floyd- Digital Fundamentals, Ninth edition, PEARSON Prentice Hall.

3. Malvino & Leach- Digital Principles and Applications, Sixth Edition, Tata McGraw Hill, 2006

BLUE PRINT
BVoc I Semester - Core
CA1B01B18 : COMPUTER FUNDAMENTALS AND DIGITAL PRINCIPLES

Modules	PART A- (short answer) 2 marks 10/12	PART B- (short essay) 5 marks 6/9	PART C- (essay/problem) 15marks 2/4
I	3	1	1
II	3	2	
III	2	2	1
IV	2	2	1
V	2	2	1
Total	12	9	4

B.Voc PROGRAMME- SOFTWARE DEVELOPMENT- CORE COURSE
CA1B01B18 : COMPUTER FUNDAMENTALS AND DIGITAL PRINCIPLES

MODEL QUESTION PAPER
I Semester Examination

Time : 3 Hrs **Total Marks : 80**

PART A
(Answer any 10 questions. Each question carries 2 marks)

1. Define control unit.
2. Explain Mainframe computer.
3. What is an Assembler?
4. What is an OS?
5. Explain Topology.
6. Expand MAN.
7. Find Decimal equivalent of $(AFD5)_{16}$
8. Explain EBCDIC.
9. Explain Redundany in Boolean alebra
10. What is Absorption law.
11. Explain Decoder.
12. Explain what is a Latch.

PART B
(Answer any 6 question.Each question carry 5marks)

13. Explain Functional Unit of Computer with a neat diagram.
14. Explain instruction execution and sequencing.
15. Explain Master-Slave JK flip-flop.
16. Convert the boolean expression (AB+AC'+B'C) into canonical SOP form.
17. Discuss the steps to convert OCTAL number to HEXADECIMAL number.
18. Explain digital to analog conversion techniques.
19. Discuss XOR and its applications.
20. Explain excitation table of flip-flops.
21. Explain types of memory.

PART C
(Answer any 2 questions.Each question carry 15 marks)

22. Explain different types of computer.
23. Explain
    a) Explain K map.

    b) Simplify using K-map X=AB'C+A'BC+A'B'C+AB'C'
24. Explain Basic, Universal and combinational logic gates with truth tables and logic symbols
25. Explain various registers

SEMESTER II

VSD2G02B18 : LE FRANÇAIS INTERMEDIAIRE (INTERMEDIATE FRENCH)

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

Aim of the course: It aims at increasing the students' linguistic competency which would enable them to apply the grammatical structures correctly to create original sentences.

Course Overview and Context: This module is comprised of an in-depth study of grammar categories and structures with practice drills to enable the students to use it more confidently.

Syllabus Content:

Module I (12 hours)

Bon Voyage – Marseille Donner un conseil – décrire un lieu – C'est + lieu – les prépositions de lieu – on – les moyens de transport – localisation – comprendre et présenter des informations touristiques

Module II (12 hours)

Un aller simple – À Londres Demander et donner l'heure – indiquer une date – demander poliment – situer dans le temps – les verbes partir, faire au présent – les professions – réserver un billet de train – s'informer sur les activités des autres

Module III (10 hours)

Le dimanche matin – Un journée avec Laure Manaudou S'informer sur une activité en cours, habituelle – dire quel sport on fait – parler des activités quotidiennes les verbes lire et écrire au présent – le genre des noms - les verbes pronominaux – faire de, jouer à + sport – comprendre un article de journal simple

Module IV (13hours)

On fait des crêpes ? – Il est comment ? Demander et exprimer des besoins – s'informer sur des habitudes – indiquer des quantités – les articles partitifs – rapporter des événements passés – exprimer une opinion – le passé composé avec avoir – la formation du participe passé – parler des ses habitudes alimentaires – parler de sa journée

Module V (13 hours)

Chère Léa… - Les fêtes Interroger sur le moment et la durée – comprendre des souvenirs – le passé composé avec être – pour et dans + durée future – écrire une carte postale – évoquer des fêtes traditionnelles

Competencies of the course:

- To write a post card
- To talk about one's day, daily activities
- Understand and use familiar everyday expressions
- Develop vocabulary and grammar skills
- Describe one's immediate environment

Learning Resources

Textbook

Guy Capelle, Robert Menand : Le Nouveau Taxi 1, Hachette Livre 2009, Lessons 1-10, (Pp 38 - 64)

BLUE PRINT
BVoc II Semester - Core
VSD2G02B18 : LE FRANÇAIS INTERMEDIAIRE

Modules	Hours	Part A 2 marks 10/12	Part B 5 marks 6/9	Part C 15 marks 2/4
I	14	3	1	1
II	14	2	3	1
III	12	3	1	1
IV	16	2	3	0
V	16	2	1	1

B.Voc PROGRAMME- SOFTWARE DEVELOPMENT- CORE COURSE
VSD2G02B18 : LE FRANÇAIS INTERMEDIAIRE
MODEL QUESTION PAPER
II Semester Examination

Time : 3 Hrs **Total Marks : 80**

PART A
(Answer any 10 questions. Each question carries 2 marks)

I. Répondez à **dix** questions.

1. Où se trouve la Martinique ? Nommez un musée en Martinique.
2. Que savez-vous de Zinedine Zidane ?
3. Nommez deux musées à Marseille.
4. Quelle heure est-il maintenant ? Et indiquez la date d'aujourd'hui.
5. Qu'est-ce que Farid fait ? Il travaille où ?
6. Écrivez deux activités que vous le dimanche.
7. Écrivez quatre sports que vous aimez.
8. Qu'est-ce que vous savez de Laure Manaudou ?
9. Qu'est-ce que la Chandeleur ? Qu'est-ce qu'on fait ce jour ?
10. Écrivez quatre mots qu'on utilise pour exprimer une opinion.
11. Citez quatre fêtes françaises.
12. Qu'est-ce que vous faites pour Noël ?

(10x2=20 marks)

PART B
(Answer any 6 question.Each question carry 5marks)

I. Répondez à **six** questions.

13. Complétez les phrases avec en, au sud de, sur dans, au bord de, à, en face de.
    a. Nice est … la France.
    b. On visite la ville … pied ou … bus ?
    c. La visite continue … la Seine.
    d. On est … un hôtel.
14. Dites l'heure.
    a. 8 h 20 b. 17 h 30 c. 11 h 55 d. 6 h 45 e. 9 h 15
15. Transformez la question avec est-ce que.
    a. Tu habites où ?
    b. Vous arrivez quand ?
    c. Vous faites quoi, maintenant ?
    d. Comment tu vas ?

e. Ils partent à quelle heure ?

16. Trouvez la profession correspondant à la définition.
    a. Je travaille dans un bar.
    b. Je joue de la guitare dans un groupe de rock.
    c. Je travaille avec des ordinateurs.
    d. Je fais des photos pour un journal.
    e. Je fais du cinéma.

17. Complétez avec des formes des verbes faire, lire et écrire.
    a. Qu'est-ce que tu … ?
       Je … le journal et après j'… à des amis.
    b. Vous … souvent le journal ?
       Tous les jours.
    c. Qu'est-ce que vous … ?
       Une lettre. C'est pour Charlotte.
18. Transformez comme dans l'exemple.
    Ex : Tu bois au du Coca au déjeuner ?
         Non, je ne bois pas de Coca, je bois de l'eau.
    a. Il y a de la salade avec la viande ?
    b. Tu bois du thé au petit-déjeuner ?
    c. Vous mangez des légumes le soir ?
    d. Vous buvez du vin avec le poisson ?
    e. Tu prends du fromage le matin ?
19. Combien de temps ? Complétez.
    a. Tu es restée … ?
       Trois semaines.
    b. Elles sont parties … ?
       Pour un mois.
    c. Tu reviens … ?
       Dans trois jours.
    d. … est-ce qu'il faut pour aller en ville ?
       Dix minutes en voiture.
20. Écrivez les phrases suivantes au passé composé.
    Bon, alors, aujourd'hui, je fais les courses. J'achète un sac pour Mathieu et un tee-shirt pour Alex. Ensuite, je déjeune avec Anne. Je prends le train pour Lyon à 15 heures. Et le soir, je dîne chez ma mère.
    Hier, …
21. Trouvez la question.
    Ex : J'ai acheté un pantalon noir très joli.

Qu'est-ce que tu as acheté ?

a. Elle a fait les magasins.
b. Non, nous avons mangé à la maison.
c. Oui, ils ont passé une très bonne journée.
d. Non, j'ai pris le bus.
e. Il a bu un café au restaurant.

(6x5=30 marks)

PART C
(Answer any 2 questions.Each question carry 15 marks)

II. Répondez à **deux** questions.

22. Racontez par écrit un très on souvenir de fête en famille ou avec des amis.
23. Que fait-on, en général, le week-end dans votre pays.
24. Vous prenez le train pour Nantes. Demandez les renseignements à un employé. Écrivez le dialogue.
25. Écrivez une carte postale de votre ville à votre ami.

(2x15=30 marks)

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SEMESTER II

VSD2G03B18: COMPANY LAW

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

Aim of the course:

The course introduces the meaning of company. The standard of business integrity and conduct in promotion ***and*** management of companies. Effective participation and control by shareholders and the protection of their legitimate interests.

Syllabus Content

Module I (12 Hours)

Legal structures of business, Forms of business association contrasted, Meaning and types of companies, Formation and incorporation of a company, ; advantages and disadvantages of incorporation; corporate personality.

Module II (12 Hours)

Promoters of company, Duties and Liabilities of Promoter, Memorandum and Articles of Association, Prospectus and Issue of Shares, Share Capital and Shareholders, 'Lifting the corporate veil', Doctrine of indoor management.

Module III (12 Hours)

Company Management, officers and organs of the company; Company Meetings and Proceedings; legal rules governing the enforceability of transactions with companies.

Module IV (12 Hours)

Directors. Appointment and tenure; Powers and Liabilities of Directors, executive and non-executive directors; Managerial Remuneration and Winding up of Company.

Module V (12 Hours)

Corporate accountability- requirement of keeping book of accounts, statutory books and statistical books, Annual accounts, Auditors- appointment, qualification, remuneration, removal of auditors.

Competencies of the Course

1. A minimum standard of good behaviour and business honesty in company promotion and management.

1. Recognition of the legitimate interest of shareholders and creditors and of the duty of managements not to prejudice to jeopardise those interests.
2. Provision for greater and effective control over and voice in the management for shareholders.
3. Proper standard of accounting and auditing.

4. Recognition of the rights of shareholders to receive reasonable information and facilities for exercising an intelligent judgement with reference to the management.

References

1. N.D.Kapoor, Mercantile Law,
2. Dr S M Shukla and Dr O P Gupta, Mercantile Law
3. S S Gulshan, Excel Book, Mercantile Law
4. Maheshwari & Maheshwari, .Business Law,

BLUE PRINT
BVoc II Semester - Core
VSD2G03B18: COMPANY LAW

Modules	Hours	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Essay / Problem) 15 Marks 2/4
I	14	3	2	1
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	0

B.Voc PROGRAMME- SOFTWARE DEVELOPMENT- CORE COURSE

VSD2G03B18: COMPANY LAW

MODEL QUESTION PAPER
II Semester Examination

Time : 3 Hrs **Total Marks : 80**

PART A
(Answer any 10 questions. Each question carries 2 marks)

1. What are the contents of Memorandum of Association?
2. Distinguish between dissolution and winding up.
3. What is Table A and when it is adopted?
4. Define a prospectus.
5. Write an explanatory note on 'proxy'.
6. How are the Directors appointed?
7. What is a statement in lieu of prospectus?
8. What are the requisites of a valid meeting?
9. Briefly explain a company limited by shares.
10. Who is a contributory?
11. List out the main four stages in the formation of a company
12. Explain the content of object clause.

(10×2=20)

PART B
(Answer any 6 question.Each question carry 5marks)

13. Distinguish between Memorandum of Association and Articles of Association.
14. What are the rules regarding the issue of prospectus?
15. Explain the procedure for removal of Directors.
16. What are the circumstances under which the Tribunal might consider just and equitable to wind up a company?
17. Explain the various advantages and limitations of incorporation.
18. Explain the provisions of the Companies Act regarding the duties of an auditor.
19. What are the fundamental clauses of Memorandum of Association?
20. What is meant by lifting of corporate veil?
21. What is special resolution? For what purpose are such resolutions necessary? (6×5=30)

PART C
(Answer any 2 questions.Each question carry 15 marks)

22. Briefly explain the qualification,appointment and removal of auditors.
23. Define a company.What are the characteristic features of a company?
24. Explain in detail the powers, duties and liabilities of Directors of a company.
25. What is a statutory meeting? When is it held? What business is transacted in such business?

SEMESTER III

VSD3G04B18: PRINCIPLES AND PRACTICES OF MANAGEMENT

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

Aim of the course:

This course provides a basic framework for understanding the role and functions of a manager and to explain the principles, concepts, and techniques that can be used in carrying out these functions. Specific topics include planning, decision making, organizing, leading, controlling, and innovating.

Course Overview and Context :

In modern business environments of constant change and turbulent external environments, the effective management of the organisation is paramount to achieving corporate success. This course introduces the theories, concepts and frameworks of management and how these lead to the effective management of a modern-day organisation. Students are introduced to the rich context and approaches of the theory and practice of management and explore the four critical dimensions of planning, organising, leading and controlling within an organisation. The course examines these four dimensions at three levels: the individual, the group and the organisation and applies them to case studies and other real-world contexts.

Module I : Management (12 hours)

Definition, nature, importance, evolution of management thought, Contribution made by Taylor, Fayol, Hawthrone experiments. Maslow; Is managing a science or art? Functions of manager, ethics in managing and social responsibility of managers.

Module II : Planning & Control (12 hours)

Why Management process starts with planning, steps in planning, types of planning, barriers to effective planning, operational plan, strategic planning, Mckinsey's 7's Approach, SWOT analysis, Controlling- concept, Planning- control relationship, process of control, human response to control, dimensions of control, MBO.

Module III : Decision Making & Organizing (12 hours)

Nature, process of decision making, decision making under Certainty and Uncertainty, decision-tree, group-aided decision, brain-storming.

Organizing – concept, nature and process of organizing, authority and responsibility, delegation and empowerment, centralization and decentralization, concept of departmentation.

Module IV : Staffing & Motivation (12 hours)

Concept, Manpower planning, Job design, recruitment & selection, training and development, performance appraisal, motivation, motivators and satisfaction, motivating towards organizing objectives, morale building.

Module V : Leadership & Communication (12 hours)

Defining leadership and its role, should managers lead, leadership style, leadership development, Leadership behavior.
Communication- Process, Bridging gap-using tools of communication, electronic media in Communication.

Course Competencies

- Describe students own view of management, values, ethics, and perception, and what students bring to their role as manager.
- Comment on what is expected of managers in terms of general competencies.
- Explain the differing approaches to defining management and the standard cycle of the management process.
- Explain how the values that management holds can impact an organization.
- Examine how a manager can add value to an organization.
- Recognize the value of delegating.
- Analyze the leadership styles of managers.

References

1. Koontz – Principles of Management (Tata McGrew Hill, 1st Edition 2008)
2. Robbins & Caulter – Management (Prentice Hall of India, 8th Edition)
3. L.M. Prasad – Principles & Practices of Management (Sultanchand & Sons , New Delhi)
4. Parag Diwan – Management Principles and Practices (Excel Books, New Delhi)
5. Stoner, Freeman, Gilbert. Jr. – Management (Prenlice Hall of India, 6th Edition)
6. Koontz, weihrich – Essentials of Management (TMH, 5th Edition)

BLUE PRINT
BVoc III Semester - Core
VSD3G04B18: PRINCIPLES AND PRACTICES OF MANAGEMENT

Modules	Hours	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Essay / Problem) 15 Marks 2/4
I	14	3	2	1
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	0

B.Voc PROGRAMME- SOFTWARE DEVELOPMENT- CORE COURSE
VSD3G04B18: PRINCIPLES AND PRACTICES OF MANAGEMENT MODEL QUESTION PAPER
III Semester Examination

Time : 3 Hrs **Total Marks : 80**

PART A
(Answer any 10 questions. Each question carries 2 marks)

1. Define Scientific Management.?
2. Steps involved in strategic planning?
3. Define forecasting.
4. What is Organization Structure??
5. State two important characteristics of Directing?
6. What is brainstorming?
7. What is Concurrent Control?
8. What are the 4 'P's of management?
9. What is decentralisation?
10. Name the various types of communication?
11. What is SWOT analysis?
12. Define managerial grid.

(10× 2= 20 marks)

PART B

(Answer any 6 question.Each question carry 5marks)

13. Explain the nature of management?
14. Explain the importance of planning.?
15. Define organisational chart.What are the different types of organisational chart?
16. Define leadership and its role?
17. Define the process of selecting employees?
18. What is Two-Way communication? And problems in Two-Way communication?
19. What are the leadership qualities that you would look for in a manager ?Distinguish between innate and acquirable qualities with example?
20. Distinguish between authority and responsibility.
21. Explain the process of selecting employees.

(6 × 5= 30 marks)

PART C

(Answer any 2 questions.Each question carry 15 marks)

22. Explain the contributions of F.W.Taylor to Management.?
23. Explain the various types of planning.? Mention and explain the steps in planning with neat diagram.
24. What is controlling?Explain the basic steps involved in the process of controlling?
25. What do you mean by communication network?Discuss the relative merits and demerits of oral and written communication?

(2× 15= 30 marks)

SEMESTER III

VSD3G05B18 : HUMAN RIGHTS

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

Aim of the course:

The objective of Human Rights is to motivate students to take positive and peaceful action in support of human rights.

Module I

THE CONCEPT OF HUMAN RIGHTS

Introduction
Nature and Meaning of Human Rights
Origin of Human Rights Movement
UN Charter and its Agencies
International Movements for the Protection of Human Rights

Module II

PROTECTION OF HUMAN RIGHTS UNDER THE INDIAN CONSTITUTION

Introduction
Indian Constitution vis-à-vis International Human Rights
Human Rights, Politics and Indian Judiciary
Public Interest Litigation

Module III

IMPLEMENTATION OF HUMAN RIGHTS IN INDIA

Introduction
Position of Judiciary Under Indian Constitution
The Concept of 'Judicial Review' and Human Rights
Development of Human rights Through different Tools and Technique

Module IV

HUMAN RIGHTS AND WEAKER SECTIONS

Introduction
Women and International Human Rights
Women and Human Rights in India
National Legislations
Children and Human Rights in India

Module V

HUMAN RIGHTS OF ARRESTED PERSONS, UNDER TRIALS AND PRISONERS

Rights of Arrested Persons
Power of and Procedure for Arrest
Rights of under trial Prisoners
Rights of Prisoners

References:

1. S.K.Kapoor ,International law & Human Rights in India.

BLUE PRINT
BVoc III Semester - Core
VSD3G05B18 : HUMAN RIGHTS

Modules	Hours	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Essay / Problem) 15 Marks 2/4
I	14	3	2	1
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	0

SEMESTER III

ST3C04B18 : BASIC STATISTICS AND SPSS

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

Aim of the course:

1. To introduce basic concepts in Statistics
2. To explain different techniques used in a statistical investigation.
3. To familiarize statistical tools MS Excel and SPSS

Syllabus Content

Hours per week – 4

Module I **(10 Hours)**

Data and its organization: Data - Sources of data - Types of data - Collection of data Tabulation–frequency distribution - graphic representation- Histogram, frequency polygon, frequency curve, ogives

Analysis of Data: Measures of Central Tendency - Mean, Median and Mode. Requisites for an ideal measure of central tendency. Measures of Variation - Range, Quartile deviation, Mean deviation, Standard deviation & Coefficient of variation, Characteristics of an ideal measure of dispersion. Concepts of correlation and regression. Scatter diagram, Correlation table, correlation coefficient, regression coefficient, linear regression and prediction(Theory only)

Module II **(20 Hours)**

Interpretation of Data: Normal distribution - Importance and properties of Normal distribution.

Theory of attributes - introduction, independence of attributes, criterion of independence, association of attributes, Yule's coefficient of association, coefficient of colligation.

Tests of significance- Null Hypothesis, level of significance, confidence interval, large sample tests for single proportion, single mean and difference of means, difference of standard deviations. Small sample tests-t test and F' test-t test of significance for single mean, paired t - test for related samples, difference in means and observed correlation coefficients, F test of significance for equality of population variances. - Chi square - test of goodness of fit, independence of attributes.

Module III **(14 Hours)**

Data Handling using Excel: Getting started with Using functions - Statistical Functions – Frequency, Average, Median, Mode, Quartile, Standard Excel - Work Book and Work Sheet – Moving around in a work sheet - Building a work sheet working with more than one cell at a time - Formula and rules for using formula - Functions - Deviation, Variance, Correlation, Chi test - Printing Data and Results. Charts: Column- Pie- XY (Scatter) - Frequency Polygon, Frequency curve - Ogives- Formatting Charts - Printing Charts. Data Analysis Using Excel: Frequency Distribution – Histogram - Descriptive Statistics Correlation - Regression. Inferential Statistics: Statistical Tests: Testing a mean, t-test for a mean, two sample Z test for Means- Two sample t-test for means, Paired t- test, Chi-square test for Variance, Goodness of fit, Independence of Attributes.

Module IV **(16 Hours)**

Introduction to SPSS and its Applications: Defining variables - Numeric and String Variables – Assigning Names and Labels to variables and values - Entering Data - Summary Statistics – Frequencies - Descriptive Statistics Means - Crosstab - Graphs - Histograms and Bar charts- Scatter diagram, Pie Diagram - Bivariate Correlation - Linear regression - Test of mean - One Sample t-test, Independent sample t-test- Paired samples t-test – Chi-square test.

References

1. Scientific Methods and Social Research - Gosh, B.N.- Sterling Publishers Pvt. Ltd. New Delhi,
2. Research Methodology, Methods and Techniques - Kothari, C.R. Wiey Eastern Limited, New Delhi, 1990.
3. Research Methods in Social Science -Sharma, B.A.V. Prasad RD. and Satyanarayana, P. Sterling Publishers Pvt. Ltd, 1985.
4. Methodology and Techniques of Social Research - Wilkinson, T.S. and Bhandarkar, P.L.Himalaya Publishing House, Bombay, 1984.
5. Statistical Methods - Agarwal. Y.P. - Sterling Publishers Pvt. Ltd, 1990.
6. Statistical Methods - Gupta. S.P. Sultan Chand & Sons, New Delhi, 1996.
7. Statistical Methods for Biologists - Palanisamy S. and Manobaran M.Paramount Publications, Palani, 1991.
8. Statistics Theory, Methods and Application - Sancheti, D.C. and. Kapoor.V.K. - Sultan Chand & Sons, New Delhi, 1993.
9. Methods in Bio Statistics for medical students & Research workers - B.K. Mahajan - Jaypee Brothers.
10. An Introduction to Bio Statistics (A manual for students in Health Science) - P.S.S. Sundar Rao & J. Richard - Prentice Hall of India
11. Statistics made simple - Do it yourself on PC - K.V.S Sharma - Prentice Hall of India, New Delhi.

12. A first Course in Computers - Sanjay Saxena - Vikas publishing house Pvt. Ltd.
13. Microsoft Office 2003 Bible - Edward C. Willett - Wiley Publishing, Inc.
14. Microsoft Office Excel 2003, A Beginners Guide - Guy Hart - Davis - dream tech Press.
15. Introduction to Computers & MS Office - Sanjay Saxena - Vikas Publishing House Pvt. Ltd.
16. SPSS Explained - Perry R. Hinton, Charlotte Brownlow, Isabella Mc Murray and Bob Cozens - Routledge Taylor and Francis Group, London & New York.

Competencies of the Course

- Understand the basic concepts in Statistics as well as different steps in a statistical investigation.
- Choose appropriate test for a given Statistical problem.
- Use MS Excel and SPSS to carry out statistical tests.

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BVoc III Semester - Core
ST3C04B18 – Basic Statistics and SPSS

Module	Part A 2Marks 10/12	Part B 5 Marks 6/9	Part C 15 Marks 2/4
I	3	3	1
II	3	3	1
III	4	2	1
IV	2	1	1

SEMESTER IV

CA4B09B18 : WEB PROGRAMMING USING PHP

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

Aim of the Course : Knowledge of PHP is an essential skill for a wide variety of careers in business and information technology. Many emerging and growing career opportunities including webdesigning . The course curriculum is focused on the following objectives:

- To create MySQL users and grant privileges
- To test PHP and MySQL installations
- To configure PHP

Syllabus Content

Module I (12 hours)

Introduction to PHPInstallation of PHP and MySQL.PHP configuration in IIS & Apache Web Server and features of PHP.Writing PHP-How PHP code is parsed, Embedding PHP and HTML,Executing PHP and viewing in Browser, Data types, Operators, PHP variables: static and global variables, Comments in PHP

Module II (12 hours)

Control Structures
Condition statements-If…Else, Switch,? Operator,Loops-While, Break Statement,Continue Do…While,For,For each, Exit, Die, Return, Arrays in PHP.Working With Data- FORM element, INPUT elements, Validating the user input, Passing variables between pages,Passing variables through GET, Passing variables through POST,Passing variables through REQUEST.

Module III (12 hours)

Working With Functions-Built-in functions ,Sring Functions: chr, ord, strtolower, strtoupper, strlen, ltrim, rtrim, substr, strcmp,strcasecmp, strpos, strrpos, strstr, stristr, str_replace, strrev, echo, print,Math Functions: abs, ceil, floor, round, fmod, min, max, pow, sqrt, rand Array Functions: count, list, in_array, current, next, previous, end, each, sort, rsort,
assort, array_merge, array_reverse, User Defined Functions

Module IV (12 hours)

Sessions and cookies- Concept of Session,Starting session,Modifying session variables,Un registering and deleting session variable, Concept of Cookies

Module V (12 hours)

Introduction of MySQL- Types of tables in MySQL,Query in MySQL: Select, Insert, Update, Delete, Truncate, Alias, Order By, Database connectivity of PHP with MySQL

Course Competencies

C1 : Understand the PHP structure.

C2 : Identify Tags specifications.

C3 : understand Data Management.

Text Book/References:

1. Core PHP Programming Leon Atkinson Pearson publishers
2. The Complete Reference PHY Stever Holzner McGraw Hill
3. Beginning PHP 5.0 Database Christopher Scollo, Harish
4. Rawat, Deepak Thomas Wrox Press
5. PHP – A beginners Ashok Appu Wiley
6. PHP 5.0 and MySql Bible Tim Converse, Joyce Park, Clark Morgan John Wiley & Sons
7. MySQL Bible Steve Suehring John Wiley &Sons
8. PHP Black Book Peter Moulding -
9. PHP 5 and Mysql Tim converse, Joyce Park and Clark Morgan Bible Wiley
10. Beginning PHP 5.3 Matt Doyle Wrox Publication

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BVoc IV Semester - Core
CA4B09B18 : WEB PROGRAMMING USING PHP

Modules	Hours	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Essay / Problem) 15 Marks 2/4
I	14	3	2	1
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	0

SEMESTER IV

VSD4G06B18: ADVANCED SQL WITH ORACLE

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

Aim of the course:

- To introduce advanced sql features with Oracle.
- To be familiar with database management.

Syllabus Content

Module - I Structured Query Language : (12 hours)

- Writing Basic SQL Select Statements, Restricting and Sorting Data, Creating and managing tables, including constraints, creating views, creating other database objects(Sequences, Indexes and Synonyms)

Module - II Advanced SQL (12 hours)

- using SET operators, single row functions,Joins(Displaying data from multiple tables), aggregating data using group functions, grouping data from tables in sql- GROUPBY clause,having clause, subqueries.

Module - III PL/SQL (12 hours)

- Introduction, Overview and benefits of PL/SQL, Subprograms, types of PL/SQL blocks, Simple
- Anonymous Block, Identifiers, types of identifiers, Declarative Section, variables, Scalar Data Types, The % Type attribute, bind variables in PL/SQL expressions, Executable statements, PL/SQL block syntax, comment the code, deployment of SQL functions in PL/SQL, Convert Data Types.Invoke SELECT Statements in PL/SQL.

Module – IV Control Structures : (12 hours)

Conditional processing using IF statements and CASE statements, Loop Statement, while loop statement, for loop statement, the continue statement composite data types : PL/SQL records, The % ROWTYPE attribute, insert and update with PL/SQL records

Module - V (12 hours)

- SQL cursor concept, -implicit and explicit cursors,declare cursor, Fetch data from the Cursor, Close the Cursor, Cursor FOR loop,

TEXT BOOKS:

1. C.J. Date, Database Systems, Addison Wesley, 2000

References

2. Chip Dawes, Biju Thomas, Introduction to Oracle 9i SQL, BPB, 2002
3. Bob Bryla, Biju Thomas, Oracle 9i DBA Fundamental I, BPB, 2002
4. Doug Stums, Matthew Weshan, Oracle 9i DBA Fundamental I, BPB, 2002
5. Joseph C. Johnson, Oracle 9i Performance Tuning., BPB, 2002

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BVoc IV Semester - Core
VSD4G06B18: ADVANCED SQL WITH ORACLE

Modules	Hours	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Essay / Problem) 15 Marks 2/4
I	14	3	2	1
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	0

SEMESTER IV

VSD4G07B18 : INDIAN CONSTITUTION

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

Aim of the Course :

- Understand the need for a constitution
- Explain the role of constitution in a democratic society
- List the key features of the constitution
- Appreciate the fundamental rights of the citizens of india

Syllabus Content

Module I (15 Hours)

Constitution

Definition and Classification - Sources of Constitution - Constitutional Conventions - Salient features and provisions of Indian Constitution - Rule of Law - Separation of powers

Module II (15 Hours)

Distributive of Powers between Center and States

Legislative Powers - Administrative Powers - Financial Power

Doctrine of Territorial Nexus–Doctrine of Harmonious Construction-Doctrine of Pith and Substance-Doctrine of Repugnancy

Module III (15 Hours)

Constitutional Organs

(a) Parliament (b) Parliamentary Sovereignty (iii) Parliamentary Privileges (iv) Anti Defection

Law (v) Executive Power (vi) Collective Responsibility of Cabinet (vii) Judiciary-Jurisdiction of

Supreme Court and High Courts (viii) Independence of Judiciary

(ix) Public Interest Litigation (x) Power of Judicial Review

Module IV (15 Hours)

Emergency Provisions, Amendment of Constitution, Doctrine of Basic Structure,

Contractual and Tortious Liability of State, Right to Property and Freedom of Trade & Commerce

Text Book :

1. J.N.Pandey – Constitutional Law of India

References:

1. Bakshi – Constitutional law
2. V.N.Shukla – Constitutional law

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BVoc IV Semester - Core
VSD4G07B18 : INDIAN CONSTITUTION

Modules	Hours	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Essay / Problem) 15 Marks 2/4
I	14	3	2	1
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	0

SEMESTER V

VSD5G08B18 : ENVIRONMENT STUDIES

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

Syllabus Content

Module I : (12 hours)

Multidisciplinary nature of environmental studiesDefinition, scope and importance

Need for public awareness.

Module II : (12 hours)

Natural Resources :Renewable and non-renewable resources : Natural resources and associated problems. a) Forest resources : Use and over-exploitation, deforestation, case studies.Timber extraction, mining, dams and their effects on forest and tribal people.

b) Water resources : Use and over-utilization of surface and ground water,floods, drought, conflicts over water, dams-benefits and problems.

c) Mineral resources : Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

d) Food resources : World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

e) Energy resources : Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies.

f) Land resources : Land as a resource, land degradation, man induced landslides, soil erosion and desertification. • Role of an individual in conservation of natural resources. • Equitable use of resources for sustainable lifestyles.

Module III : (12 hours)

Ecosystems

• Concept of an ecosystem. IV

• Structure and function of an ecosystem.

• Producers, consumers and decomposers.

• Energy flow in the ecosystem.

• Ecological succession.

• Food chains, food webs and ecological pyramids.

• Introduction, types, characteristic features, structure and function of the

following ecosystem :-a. Forest ecosystem

b. Grassland ecosystem ,c. Desert ecosystem

d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

(6 lectures)

Module IV : Biodiversity and its conservation

• Introduction – Definition : genetic, species and ecosystem diversity.

• Biogeographical classification of India

• Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic

and option values

• Biodiversity at global, National and local levels.

• Inida as a mega-diversity nation V

• Hot-sports of biodiversity.

• Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts.

• Endangered and endemic species of India

• Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.

Module V : (12 hours)

Environmental Pollution Definition • Cause, effects and control measures of ,a. Air pollution, b. Water pollution,c. Soil pollution,d. Marine pollution,e. Noise pollution,f. Thermal pollution, g. Nuclear hazards

• Solid waste Management : Causes, effects and control measures of urban andindustrial wastes.•

Role of an individual in prevention of pollution.

• Pollution case studies.

• Diaster management : floods, earthquake, cyclone and landslides.

REFERENCE

a) Agarwal, K.C. 2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.

b) Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd.,

Ahmedabad – 380 013, India, Email:mapin@icenet.net (R)

c) Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p

d) Clark R.S., Marine Pollution, Clanderson Press Oxford (TB)

e) Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001,

Environmental Encyclopedia, Jaico Publ. House, Mumabai, 1196p

f) De A.K., Environmental Chemistry, Wiley Eastern Ltd.

g) Down to Earth, Centre for Science and Environment (R)

h) Gleick, H.P. 1993. Water in crisis, Pacific Institute for Studies in Dev.,

Environment & Security. Stockholm Env. Institute Oxford Univ. Press. 473p

i) Hawkins R.E., Encyclopedia of Indian Natural History, Bombay Natural

History Society, Bombay (R)

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BVoc V Semester - Core
VSD5G08B18 : ENVIRONMENT STUDIES

Modules	Hours	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Essay / Problem) 15 Marks 2/4
I	14	3	2	1
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	0

MODEL QUESTION PAPER - ENVIRONMENT STUDIES

VSD5G08B18 : ENVIRONMENT STUDIES

Maximum Marks: 80

Part A

I. Answer any 10 questions. Each question carries 2marks.

1. Define Environment?
2. Write the components of environment?
3. Define deforestation?
4. Define Surface water
5. Define Ecosystem?
6. Define Food chain ?
7. What are the 4 kinds of diversity?
8. Define biodiversity?
9. What is meant by pollution?
10. What is meant by acid rain?
11. Explain Forest exploitation
12. Define Web of Life

(10 x 2 =20)

Part B

II. Answer any 6 questions each not exceeding *two* pages. Each question carries 5 marks:

13. Define Surface water
14. What do you mean by desertification?
15. Give the characteristic features of desert ecosystem.?
16. Distinguish between food chain and food web?
17. What are consumers?
18. State the significance of ecological pyramid?
19. What is poaching of wild life?
20. What is genetic diversity?

(6x5=30)

Part D

IV. Answer any 2 question . Each question carries 15 marks:

13. Explain how forest is exploited?
14. Explain the energy flow in an eco system? What is an energy cycle?
15. Discuss the various biogeographical realms and biogeographic regions?
16. Write an essay on the cause ,effects and control measures employed for solid waste?

(2 x 15=30)

SEMESTER V

VSD5G09B18 : ENTREPRENEURSHIP

CREDITS : 4

TOTAL LECTURE HOURS : 60 HOURS

Aim of the Course:

The students develop and can systematically apply an entrepreneurial way of thinking that will allow them to identify and create business opportunities that may be commercialized successfully

Syllabus Content

Module I (12 hours)

Entrepreneurship & Marketing
Entrepreneurship – Entrepreneur, Characteristics, Entrepreneurial Decision Process, Functions, Types and Need of Entrepreneur, Intrapreneur.
Marketing – Functions and problems of marketing, Marketing Segmentation & Marketing Mix

Module II (12 hours)

Role of Entrepreneur in Economic Development
Entrepreneurship in Economic Development, Women Entrepreneur – Functions, Growth and Problems of Women Entrepreneurship. Developing Women Entrepreneurship and its Limitations.

Module III (12 hours)

Entrepreneurship Development Programmes

EDP – Objectives, Course Contents and Curriculum of EDPs, its phases, Evaluation and Problems of Entrepreneurship Development Programmes.

Module IV (12 hours)

Project Development and Project Formulation

Module V (12 hours)

Project Planning and Project Report

Learning Resources

Textbook:

- Dr. S.S. Khanka, "Entrepreneurial Development"

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BVoc V Semester - Core
VSD5G09B18 : ENTREPRENEURSHIP

Modules	Hours	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Essay / Problem) 15 Marks 2/4
I	14	3	2	1
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	0

SEMESTER V

VSD5G10B18 : LINUX OPERATING SYSTEMS

CREDITS : 4

TOTAL LECTURE HOURS : 4 HOURS/WEEK

Aim of the Course : Knowledge of Linux is an essential skill for a wide variety of careers in business and information technology. Many emerging and growing career opportunities including big data, cloud computing, cyber security, information systems, networking, programming and software development require basic to advanced knowledge of the Linux command line. The course curriculum is focused on the following objectives:

- Understand Linux as an operating system
- Explain some of the considerations for choosing an operating system
- Understand some of the basics of open source software and licensing
- Acquire basic knowledge of working with Linux
- Learn basic Linux command line skills
- Learn how to use help commands and navigate help systems when using Linux
- Basics of how to work with Linux files and directories
- Searching and extracting data from Linux files
- Basic understanding of the concept of scripting
- Knowing where data is stored on a Linux system
- Identifying various types of users on a Linux system
- Creating users and groups on a Linux system
- Managing Linux file permissions and ownership
- Understanding special Linux directories and files

Course Overview and Context:

This course covers the fundamentals of the Linux operating system and command line. The goal of this course is to provide a "starting place" for learning the Linux operating system. Individuals who complete this course should understand Linux as an operating system, basic open source concepts, how Linux is used and the basics of the Linux command line and shell programming.

Syllabus Content:

Module I: (12 hours)

Linux introduction and file system - Basic Features, Advantages, Installing

requirement, Basic Architecture of Unix/Linux system, Kernel, Shell - Linux File system - Boot block, Super block, Inode table, Data blocks, Linux standard directories. Commands for files and directories – cd, ls, cp, rm, mkdir, rmdir, pwd, file, more, less, Creating and viewing files using cat, file comparisons, View files, disk related commands, checking disk free spaces.

Module II: (12 hours)

Essential Linux commands, Understanding shells, Processes in Linux, process fundamentals, connecting processes with pipes, redirecting input/output, Background processing, managing multiple processes, scheduling of processes. Batch commands, kill, ps, who, Printing commands, find, sort, touch, file, file processing commands - wc, cut, paste etc - mathematical commands - expr, factor etc. Creating and editing files with vi editor.

Module III: (12 hours)

System administration - Common administrative tasks, identifying administrative files – configuration and log files, Role of system administrator, Managing user accounts-adding & deleting users, changing permissions and ownerships, Creating and managing groups, modifying group attributes, Temporary disabling of user's accounts, creating and mounting file system, checking and monitoring system performance - file security & Permissions, becoming super user using su. Getting system information with uname, host name, disk partitions & sizes, users, kernel, installing and removing packages with rpm command

Module IV: (12 hours)

Shell programming - Basics of shell programming, various types of shell available in Linux, comparisons between various shells, shell programming in bash

Conditional and looping statements, case statement, parameter passing and arguments, Shell variables, system shell variables, shell keywords, Creating Shell programs for automating system tasks

Module V :Simple filter commands – pr, head, tail, cut, sort, uniq, tr - Filter using regular expression – grep, egrep, sed

Understanding various Servers —DHCP, DNS, Squid, Apache, Telnet, FTP,Samba.

Competencies of the Course

C1 : Understand concepts and components of Linux.
C2 : Use common Linux commands and utilities for general file system operations.

Learning Resources

Textbook :

1. Red Hat Linux Bible" by Cristopher Negus, Wiley DreamtechIndia,Enterprise Edition
2. "UNIX Shell Programming" by YeswantKanethkar, BPB,2nd Edition

References :

1. Official Red Hat Linux User's guide" by Redhat, Wiley Dreamtech India
2. "UNIX for programmers and users" by Graham Glass & King Ables, PearsonEducation

3. "Beginning Linux Programming" by Neil Mathew & Richard Stones, Wiley Dreamtech Indi**BLUE PRINT**

BVoc V Semester - Core

VSD5G10B18 : LINUX OPERATING SYSTEMS

Modules	Hours	PART A (Short Answer) 2 Marks 10/12	PART B (Short Essay) 5 Marks 6/9	PART C (Essay / Problem) 15 Marks 2/4
I	14	3	2	1
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	0

SEMESTER VI

VSD6G11B18 : BUSINESS ETHICS

CREDITS : 5

TOTAL LECTURE HOURS : 75 HOURS

Aim of the Course

The objective of the course is to give a basic idea about the principles of business ethics. The students must learn about the importance of ethics in day to day life.

Syllabus Content

Module I (15 hours)

Introduction-Concept, relevance and importance, Ethical principles and relevance in business, Normative and Justice & Fairness .

Module II (15 hours)

Ethics and the organization

Organizational ethics, basic elements of an ethical organization, designing of code of ethics of an organization, dimensions of organizational ethics, benefits of managing ethics in the organization, current ethical related issues in organizations.

Module III (15 hours)

Environmental Ethics

Sustainable Development, Industrial Pollution & Environmental Issues.

Module IV (15 hours)

Corporate Governance

Introduction to corporate governance, Importance, Issues and Obligations.

Module V (15 hours)

Consumer Protection

Consumer & Consumer protection and Legal Protection to consumers.

References

1. Business Ethics Concepts & Cases ,Velasquez, TMH Publication.

2. Ethics & the conduct of Business, Boatright, Pearson Publication
3. Business Ethics text and Cases Viswanath Ghosh, Vikas Publication
4. Business Ethics, S.K.Chakravorty, TMH Publication.
5. Business ethics in the Indian social system-kirandeeep kaur sumedha guptha

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BVoc VI Semester - Core
VSD6G11B18 : BUSINESS ETHICS

Modules	**Hours**	**PART A (Short Answer) 2 Marks 10/12**	**PART B (Short Essay) 5 Marks 6/9**	**PART C (Essay / Problem) 15 Marks 2/4**
I	14	3	2	1
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	0

SEMESTER VI

VSD6G12B18 : SOFTWARE TESTING

CREDITS : 5

TOTAL LECTURE HOURS : 75 HOURS

Syllabus Content

Module I (15 hours)

Fundamentals Of Testing: Human and errors ,Testing and Debugging, objectives of Testing,General Principles of Testing,Role of Tester,Software Quality Assurance (SQA)

Module II (15 hours)

Testing Techniques : Structural versus functional Technique Categories,Verification versus Validation ,Static versus Dynamic Testing

Module III (15 hours)

Test Case Design : Introduction to testing design strategies – The smarter tester – Test case design strategies – Using black box approach to test case design – Equivalence class partitioning – Boundary value analysis – Other black box test design approaches –Using white box approach to test design – Test adequacy criteria – Coverage and control flow graphs – Covering code logic – Paths – Their role in white box based test design

Module IV (15 hours)

LEVELS OF TESTING : The need for Levers of Testing – Unit Test – Unit Test Planning – Designing the Unit Tests – –Running the Unit tests and Recording results – Test Harness-Integration tests – Designing Integration Tests – Integration Test Planning –-System Testing – Acceptance testing – Performance testing – Regression Testing – Ad-hoc testing – Alpha, Beta Tests

Module V (15 hours)

Test Automation : Software test Automation-Skill needed for Automation-Scope for Automation-Design and Architechture for Automation-Requirements for Test tool-Challenges in automatioTest metrics and measurements

Refernces

1. Srinivasan Desikan and Gopalaswamy Ramesh, " Software Testing – Principles and Practices", Pearson education, 2006.

2. Software Testing – Principles andTechniques and tools"M G Limaye MC GrawHill Education

3. Aditya P.Mathur, "Foundations of Software Testing", Pearson Education,2008.

4.Software Testing Foundations,Andreas Spillner,Tilo Linz,Hans Scharfer,Shoff Publishers and Distributors

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BVoc VI Semester - Core
VSD6G12B18 : SOFTWARE TESTING

Modules	**Hours**	**PART A (Short Answer) 2 Marks 10/12**	**PART B (Short Essay) 5 Marks 6/9**	**PART C (Essay / Problem) 15 Marks 2/4**
I	14	3	2	1
II	14	3	2	1
III	14	2	2	1
IV	15	2	2	1
V	15	2	1	0

SEMESTER VI

VSD6G13B18 : CLOUD COMPUTING

CREDITS : 5

TOTAL LECTURE HOURS : 75 HOURS

Aim of the Course

1. Understanding the key dimensions of the challenge of Cloud Computing
2. Assessment of the economics, financial, and technological implications for selecting cloud computing for own organization
3. Assessing the financial, technological, and organizational capacity of employer's for actively initiating and installing cloud-based applications.
4. Assessment of own organizations' needs for capacity building and training in cloud computing-related IT areas

Syllabus Content

Module I (15 hours)

Introduction:
Historical development, Vision of Cloud Computing, Characteristics of cloud computing as per NIST , Cloud computing reference model ,Cloud computingenvironments, Cloud services requirements, Cloud and dynamic infrastructure, CloudAdoption and rudiments Applications- Satellite Image Processing ,Social networking .

ModuleII (15 hours)

Cloud Computing Architecture:
Cloud Reference Model, Types of Clouds, CloudInteroperability & Standards, Scalability and Fault Tolerance,
Cloud Solutions:
CloudEcosystem, Cloud Business Process Management, Cloud Service Management.

Module III (15 hours)

Cloud Management & Virtualization Technology:
Virtualization: Fundamental concepts of compute, storage, networking, desktopand application virtualization. Virtualization benefits, server virtualization, Block and file level storage virtualization.

Module IV (15 hours)

Cloud Security:
Security risks in cloud, security attacks in virtualization, security solutions in virtualization, securing the cloud, security boundary, CSA cloud reference model with security mechanisms, encryption, establishing identity and presence

Module V (15 hours)

Market Based Management of Clouds, Federated Clouds/Inter Cloud: Characterization &Definition, Cloud Federation Stack, and Third Party Cloud Services.

Textbook

1. Buyya, Selvi ," Mastering Cloud Computing ",TMH Pub

References

1. Kumar Saurabh, "Cloud Computing" , Wiley Pub
2. Krutz , Vines, "Cloud Security " , Wiley Pub
3. Velte, "Cloud Computing A Practical Approach" ,TMH Pub
4. Sosinsky, " Cloud Computing" , Wiley Pub

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Modules	PART A (short answer) 2 marks 10/12	PART B (short essay) 5 marks 6/9	PART C (essay/problem) 15marks 2/4
I	3	1	1
II	3	2	
III	2	2	1
IV	2	2	1
V	2	2	1
Total	12	9	4