B.Voc Software Development

2020-23 Batch

Syllabus

COURSE OBJECTIVES

1. To bridge the knowledge gap on the fundamentals of Software Development

2. To understand the basics of Computers

3. To gain elementary knowledge on Operating System, Computer Networks, Data Structures, Programming, Internet and WWW.

COURSE OUTCOMES

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

1. Exhibit the basic knowledge of Computers, and Software

2. Connect the basic knowledge of Operating System, Computer Networks, Data Structures, Programming, Internet and WWW to the proposed software development programme

3. Use the basic knowledge on various computational aspects into day-to-day routine activities of learning the Software Development process.

Module 1

PRINCIPLES OF OPERATING SYSTEM (2 hrs.)

Overview/ Function and Role/ Types of OS/ Examples/ File System/ Multithreading/Scheduling

Module 2

FUNDAMENTALS OF DATA STRUCTURE (3 hrs.)

Overview/ Introduction to DS/ File Structures/ Basic Data Structures/ Dynamic Arrays

Module 3

FOUNDATIONS OF NETWORKS (3 hrs.)

Fundamentals of Network/ LAN-MAN-WAN/WIFI/ Physical media/ Routers

Module 4

FUNDAMENTALS OF INTERNET AND WEB (2 hrs.)

Concept of Internet/ WWW/ Web pages/ Email/ Browsers/ HTML Basics/ Hyper links

Module 5

SOFTWARE DEVELOPMENT & THE INDUSTRY (1 hr)

Overview of software/ Development Process/ The Industry Overview

REFERENCES

- Computer Fundamentals, P K Sinha
- Programming in C, E. Balagurusamy
- Operating System Concept, Abraham Silberschatz
- Data Structures by Schaum's Outlines
- Data Communications and Networking, Behrouz A.Forouza

Timetable

Date and Day/ Hours	I 1.45 – 2.40 pm	II 2.45 – 3.40 pm	III 3.50 – 4.40 pm	IV 4.45- 5.45 pm
23-11-2020 Monday	Dr Anu Nath	Ms Gayathri T	Mr Alex Iran	Dr Sreelakshmi
24-11-2020 Tuesday	Ms Gayathri T	Dr Anu Nath	Dr Sreelakshmi	Mr Alex Iran
25-11-2020 Wednesday	Dr Anu Nath	Ms Gayathri T	Dr Sreelakshmi	Mr Alex Iran
26-11-2020 Thursday	Ms Gayathri T	Mr Alex Iran	Dr Anu Nath	Dr Sreelakshmi
27-11-2020 Friday	Mr Alex Iran	Dr Sreelakshmi	Ms Gayathri T	Dr Anu Nath

List of Students 2020-23 Batch

Sl No	Class No	Name of the Student
1	202301	ALEN MARTIN
2	202302	SREYA TITUS
3	202303	VINAYAK P M

4	202304	FATHIMA K A
5	202306	ALDRIN SHIBU
6	202307	ASWANI P J
7	202308	NIKHIL JOHNY
8	202309	ATHUL PRASANTH R P
9	202310	ABRAHAM RUSSELL T A
10	202311	JERIN P F
11	202312	JOEL ANTONY
12	202313	ANTONY CYRIL JOSE
13	202314	LEYA BENNY
14	202315	ANTONY JEES T J
15	202316	SANJAY P SHAJI
16	202317	A B HARI
17	202318	JENIN JOSEPH T

18	202319	ASKAR SHAJAHAN
19	202320	AEDRIN REBEIRO
20	202321	ALAN JOY
21	202323	MEHNA FATHIMA P N
22	202324	FELBIN ANTONY LIVERA
23	202325	ATHUL P G
24	202326	JOYEL VARGHESE
25	202327	AJMAL K M
26	202328	SHALWIN C S
27	202329	ERICSON K A
28	202330	JOHN SAMUEL A C
29	202331	ASHNA V T
30	202332	FIDA SALAM
31	202333	ANDRIYA JOJO

32	202334	VIGHNESH A M
33	202335	RIJIN JOSEPH
34	202336	SUDESHNA NATH
35	202337	SEBY JOHN
36	202338	AKHIL P A
37	202339	ANTONY SAMUEL T R
38	202340	ANUSREE MADHU
39	202341	ACEWIN JOS
40	202342	NISMAL T.N
41	202343	ATHUL KRISHNA V S
42	202344	AADHISH GOPAL
43	202345	STINIL STEEPHAN
44	202346	SHARON LIVERA

BVoc Software Development 2021-24 Batch

SYLLABUS

Module 1

COMPUTER FUNDAMENTALS 4 HRS

Computer Basics/ Types of Computers/ Generations/ Components/

Input- Output devices/ Computer Memory/ Storage devices/ Data and Information

Module 2

- PROGRAMMING FUNDAMENTALS 3 HRS

Concept of Programming/ Basics of Programming/ Flow charting/ Flow Charting Symbols

History of Programming Languages/ Algorithms/ High Level Languages

Module 3

PRINCIPLES OF OPERATING SYSTEM 2 HRS

Overview/ Function and Role/ Types of OS/ Examples/ File System/ Multithreading/Scheduling

Module 4

FUNDAMENTALS OF DATA STRUCTURE 3 HRS

Overview/ Introduction to DS/ File Structures/ Basic Data Structures/ Dynamic Arrays

Module 5

FOUNDATIONS OF NETWORKS 3 HRS

Fundamentals of Network/ LAN-MAN-WAN/WIFI/ Physical media/ Routers

Module 6

FUNDAMENTALS OF INTERNET AND WEB 2 HRS

Concept of Internet/ WWW/ Web pages/ Email/ Browsers/ HTML Basics/ Hyper links

Module 7

SOFTWARE DEVELOPMENT & THE INDUSTRY 1 HR

Overview of software/ Development Process/ The Industry Overview

TIMETABLE

Date and Day/ Hours	**I** **1.45 – 2.40 pm**	**II** **2.45 – 3.40 pm**	**III** **3.50 – 4.40 pm**	**IV** **4.45- 5.45 pm**
23-11-2021 Monday	Dr Sreelakshmi	Dr Anu Nath	Mr Alex Iran	Ms Gayathri T
24-11-2021 Tuesday	Ms Gayathri T	Mr Alex Iran	Dr Sreelakshmi	Dr Anu Nath
25-11-2021 Wednesday	Dr Sreelakshmi	Mr Alex Iran	Ms Gayathri T	Dr Anu Nath
26-11-2021		Ms Gayathri T	Dr Sreelakshmi	Dr Anu Nath

Thursday	Dr Anu Nath			
27-11-2021 Friday	Dr Sreelakshmi	Dr Anu Nath	Mr Alex Iran	Ms Gayathri T

Student list 2021-24

Sl No	Class No	Name
1	212301	ALFRED THOMAS
2	212302	ADNAN HANEEFA
3	212303	NICIN KURIAKOSE
4	212304	ALEN FREDARIC FRANCIS
5	212305	ALWIN JAIMON
6	212306	MARIYA CINDRELLA P.F
7	212307	GANESH R NAIR
8	212308	JOHANN LEO HURTIS

9	212309	ARJUN C M
10	212310	ANEX KURIAN A X
11	212311	ALPHIN K J
12	212312	SANDRIN PAUL
13	212313	ASHWIN CHARLY FURTAL
14	212314	DARWISH SAJAN
15	212315	ALEN THOMAS
16	212316	BEN DOMINIC
17	212317	K R VENKATESH
18	212318	EMMANUEL THOMAS
19	212319	MOHAMMED ALTHAF K N
20	212320	ALAN JOSEPH
21	212321	ALAN JOSEPH
22	212322	ROHIT JOLLY

23	212323	BENWIN ANTONY
24	212324	ALRICK ANTONY
25	212325	LEO K LAWRENCE
26	212326	JOFY JOSHUA
27	212327	ABHINAVE K S
28	212328	EBEL SHAJI
29	212329	JOEL V MARTIN
30	212330	SHAYAL P J
31	212331	ANAND K C
32	212332	MILEN SEBASTIAN
33	212333	DHINA K L
34	212334	ABINAND PRADEEP
35	212335	CRISTO BIJU
36	212336	AKSHAY.V.B

37	212337	AKHILA A
38	212338	SALVIN PAUL
39	212339	SANDRA K J
40	212340	IMMANUEL DON
41	212341	NIRANJANA SABU
42	212342	MARIYA ANUGRAHA
43	212343	VANDANA M S
44	212344	AKHILESH P S
45	212345	HRIDHYA H
46	212346	PARVANA K P
47	212348	AMAL GEORGE
48	212350	NIKHIL D S

ST. ALBERT'S COLLEGE (AUTONOMOUS)

ERNAKULAM

Affiliated to Mahatma Gandhi University, Kottayam, Kerala

BRIDGE COURSE SYLLABUS FOR UNDERGRADUATE PROGRAMME

BSc Computer Science

(FOR 2020 ADMISSION)

DEPARTMENT OF COMPUTER SCIENCE

LIST OF FACULTY

No	Name	Designation
1	Ms. Sangeetha J	Head of the Department
2	Mr. Amal M R	Asst. Professor
3	Ms. Dhanya G S	Asst. Professor
4	Ms. Rachana Arora	Asst. Professor

ACKNOWLEDGEMENT

I take this opportunity to express my sincere appreciation to all those who were part of this endeavor for structuring the bridge course syllabus of BSc Computer Science.

We express profound gratitude to the Manager and Principal of St. Albert's College for their leadership and guidance for completion of this work.

I place on record my wholehearted gratitude to all the faculty members of the Department of Computer Science for their untiring efforts.

We also place on record my gratitude to all professionals, academicians and other stakeholders who gave valuable suggestions in this regard.

TABLE OF CONTENTS

- PROGRAMME OBJECTIVES
- PROGRAMME OUTCOMES
- SYLLABUS
- COURSE OBJECTIVE
- COURSE OUTCOMES

PREFACE

The pandemic Covid-19 has jeopardised the academic calendars. Though online classes have become the cornerstone of modern education, the majority of the class 12 students were deprived of the same due to various reasons. To bridge the learning gaps that arose due to this pandemic situation, a bridge course would strengthen the fundamentals of the course for which they have chosen to pursue their degree. Bridge courses are aimed at prepping up students mentally, emotionally and academically for a new beginning. Bridge courses are recommended to bridge the learning gaps of students who come from various systems of education.

St. Albert's College (Autonomous) Ernakulam, design the bridge course every year for the new entrants to familiarize them with the fundamentals of the basic subjects and boost their level of confidence which they would endure. It has proved to be one of the best ways of minimizing the difficulties of academics as well as non-academics. It's a comfortable

platform for the students to interact with their faculty members and with each other.

Towards the end of the course, on the basis of examination/other evaluation strategies, students would be categorized into three groups. (1) Advanced Learners and (2) Average Students and (3) Below average students. Based on this categorisation the students will be given further coaching.

PRINCIPAL

PROGRAMME OBJECTIVES

- Identify and fill the learning gaps in their respective subjects.
- Provide strong foundation in their respective courses
- Active learning with the help of other students.
- To provide adequate time for the transition to hardcore degree courses.
- To help slow learners who have fallen behind to learn to the best of their ability and to bring them back into the mainstream classes as far as possible.

PROGRAMME OUTCOMES

- Helps in bridging the gap between the plus two syllabus (school syllabus and the level needed to understand the applications and concepts in the degree course.
- Helps in easy transition from school curriculum to college curriculum.
- Aid in achieving expected competencies in their courses
- Helps to impart basic knowledge to students about the advanced subjects that will be taught to them in the upcoming future.
- After the completion of the bridge course all the students will have a thorough understanding of the basic concepts.

REGULATIONS

The duration of the course is 18 hours with 1 credit.

SYLLABUS

Bootstrap - Bridge Course in Computer Science

18HOURS 1 CREDIT

COURSE OBJECTIVE

The main objective of the course is to bridge the gap between subjects studied at school level and subjects they would study in BSc Computer Science programme.

COURSE OUTCOME

After successful completion of this bridge course, the students shall be able to

- Understand basic programming skills in C language and develop simple computer programs in C
- Understand the working of a computer system and its components.
- Understand the basics of computer networks and architecture
- Possess a background knowledge of mathematical structures used in computer science and computer applications.

COURSE OUTLINE

The bridge course is based on the syllabus of BSc Computer Science to get basic ideas in programming, fundamentals of computers, basics of networking, computer architecture and discrete Mathematics.

Module 1: - Fundamentals of Computers (3 Hours)

Introduction to computers, Generations of Computers, Computer Science, Careers in Computer Science

Module 2: - Fundamentals of Networks (3 Hours)

Introduction to Operating System; History of internet; Introduction to network; Types of network and connectors

Module 3: - Basics of Computer Architecture (3 Hours)

Memory Hierarchy; ASCII and EBCIDIC Codes; Binary Language; Binary Operations

Module 4: - Introduction to Programming (3 Hours)

Data and Information; Introduction to Computer Programs; Programming Languages; Algorithms and flowchart

Module 5: - Introduction to Discrete Mathematics (6 Hours)

Set Theory: Definition, Representation, Types of Sets, Operations on Sets, Applications; Relations & Functions: Definitions, Arrow Diagrams, Equivalence Relations, Definitions and Graphs; Logic: Statements, Propositions, Logical Operators, Truth Tables, Predicates & Quantifiers; Number Theory: The Integers, Primes, GCD, Applications; Graph Theory: Graphs, Graph Models, Applications; Trees: Trees, Applications, Algorithms; Theory of Matrices: Types of Matrices, Operations on Matrices

PEDAGOGICAL TOOLS

1. Lecture Method

2. Problem-solving

INTERNAL EVALUATION METHODS

1. Assignments

2. Assessment

REFERENCES

- E. Balaguruswamy - Programming in ANSI C, Seventh Edition, McGraw Hill Education
- Behrouz, Frozen, Introduction to Data Communications and Networking-Tata MC-Graw Hill.
- Rajaraman V, Fundamentals of Computers, PHI 5. Seymour Lipschutz,

Marc Lars Lipson, Discrete mathematics, McGraw-Hill international editions, Schaum's series

- Floyd and Jain- Digital Fundamentals, Eighth Edition, Pearson Education

2020-23 BATCH

MON	PROG(SJ)	FC(AMR)	ENG	DM	CA (AN)
TUE	FN(DGS)	PROG(SJ)	ENG	FC(AMR)	PROG LAB (SJ)
WED	PROG(SJ)	DM	ENG	FN(DGS)	C LAB (SJ)
THU	DM	FC(AMR)	ENG	DM	CA (AN)
FRI	CA (AN)	FN(DGS)	DM	ENG	DM

Fundamentals of Computers (FC)

Fundamentals of Networks (FN)

Basics of Computer Architecture (CA)

Introduction to Programming (PROG)

Introduction to Discrete Mathematics (DM)

Ms. Sangeetha J (SJ)

Ms. Agnes Neenu (AN)

Mr. Amal MR (AMR)

Ms. Dhanya G S (DGS)

STUDENT LIST	
Class No	Name
201701	JOSEPH JOSHWIN M J
201702	BINCY ASHMA
201703	ARDRA ANILKUMAR
201704	GOKUL S MENON

201705	DION RAPHAEL
201706	ROSHAN RAYMAND
201707	JOYAL TOMY
201708	DIYA ROY
201709	DINTO MARTIN
201710	ATHIRA K.BIJU
201711	ALWIN RODRIGUES
201712	ANAGHA AJITH
201714	MERIN PRAKASIYA
201715	AJAIKRISHNAN K M
201717	MARIYA ROSE K M
201718	ANANDU AJITH
201719	AGNA T A
201720	SURYA A S
201721	NIHAL NAVAS K
201722	AAGNA PAUL
201723	SHILJA RAJU V R
201724	ROCKEY XAVIER JOYEL

2021-24 BATCH

Time Table

MON	PROG(SJ)	FC(AMR)	ENG	DM	CA (AN)
TUE	FN(DGS)	PROG(SJ)	ENG	FC(AMR)	PROG LAB (SJ)
WED	PROG(SJ)	DM	ENG	FN(DGS)	C LAB (SJ)
THU	DM	FC(AMR)	ENG	DM	CA (AN)

FRI	CA (AN)	FN(DGS)	DM	ENG	DM

Fundamentals of Computers (FC)

Fundamentals of Networks (FN)

Basics of Computer Architecture (CA)

Introduction to Programming (PROG)

Introduction to Discrete Mathematics (DM)

Ms. Sangeetha J (SJ)

Ms. Agnes Neenu (AN)

Mr. Amal MR (AMR)

Ms. Dhanya G S (DGS)

Student List 2021-24

211702	AYSHA RAHEENA K P
211703	ARYA V.U
211704	SANDRA BALAN
211705	AMBADI K J

211706	ADITHYA MANOJ
211707	NANDANA M B
211708	V SIVAPRASAD
211709	JOEL ANTONY P V
211710	SHINESON SEBASTINE
211711	K B PAVISANKER
211712	FATHIMA K.A
211713	ADARSH SURESH
211714	MILAD. A.S
211717	JOBSON JOLLY
211718	ELTEN JOHN ARUJA
211719	SOLAMAN SAVIO
211721	AKHILA ROBY
211723	NEVIN JAMES V.M
211724	NOYAL XAVIER
211725	ALEN ANTONY
211726	ABY ANGEL . K. R
211727	NIMA T MOSES
211728	SANGEETHA V A
211729	SANIL SEBASTIAN
211730	JOSNA A J
211731	LENA XAVIER
211732	ANN MARIYA SABU
211733	ALLEN ALBERT N
211734	NIYA NISHIN
211735	TESWIN BENNAN
211736	ALFIN KJ
211737	NEEL EMMANUEL T R
211738	RICHU GEORGE

211739	ENOSH JOSEPH P. A
211740	AKASH AUGUSTINE ANTONY
211741	EMMANUEL SENAIJ
211742	ASWIN PRAVEEN
211743	AKHIL K
211744	ATHUL M R
211745	AVIN ANTONY
211746	ANET SRUTHY V T
211747	STERIN ELSA FERNANDEZ
211748	STEMY JIJI
211749	ANJALI KB
211750	DAJOL KJ
211751	SHARON ANTONY M. A
211752	SAHLA FARSANA