Shahada Taluka Educational Society & Co-Operative Educational Society Ltd.
Institute of Management Research and Development
Shahada Dist- Nandurbar
Academic Year 2022-23
TYBCA Sem-V Field Work

No.	Name Of Student	Field Report Name	Guide Name
1	Bafana Arpita Manoj	A Study on user of digital Signature	Asst.Prof. Anil R. Patil
2	Bagul Vinod Devidas	User Satisfaction of Online Job Portal	Asst.Prof. Vijay K. Gaikwad
3	Bedse Rohit Bapu	Comparative Study between Amazon & Flipkart	Asst.Prof. Sonali M Patil
4	Chaudhari Kunal Kanhayalal	A study of e-audio book system	Asst.Prof. Anil R. Patil
5	Chitte Pawan Rajendra	Online Bus Ticket E-Reservation System	Asst.Prof. Vijay K. Gaikwad
6	Choudhary Jignesh Krishna	Women helpline Scheme & its Impact on Women's	Asst.Prof. Sonali M Patil
7	Devare Roshani Prakash	To Study Online Loan Application & Verification System	Asst.Prof. Anil R. Patil
8	Dhole Rinku Shamrao	Customer Satisfaction Analysis Facebook & Instagram	Asst.Prof. Vijay K. Gaikwad
10	Girase Harshal Subhash	To study the Implementation of Digitalization of Z.P. School in rural	Asst.Prof. Anil R. Patil
11	Girase Nilesh Mangalsing	A study on use of Policybazaar web portal	Asst.Prof. Vijay K. Gaikwad
12	Hajare Shruti Pravin	PharmEasy Healthcare App	Asst.Prof. Sonali M Patil
13	Jadhav Avinash Ramesh	A study on uses of online services of IRCTC	Asst.Prof. Anil R. Patil
14	Jadhav Bhavesh Ashok	A Study on Uses of Mahavitaran App.	Asst.Prof. Vijay K. Gaikwad
15	Jadhav Chetan Pravin	Students Opinion On E-Government Scholarship	Asst.Prof. Sonali M Patil
16	Jagtap Rakesh Subhash	A Study on uses of GST Web Portal	Asst.Prof. Anil R. Patil
17	Jain Yamini Champalal	A Study And Analysis on CCTV Camera System	Asst.Prof. Vijay K. Gaikwad
18	Javheri Chetan Yogeshsing	To Study on e-tender Services	Asst.Prof. Sonali M Patil
19	Kadam Aashwini Vijay	To Study on Uses or ERP software in business accounting	Asst.Prof. Anil R. Patil

S.T.E.S. & Co-Op. E.S. Ltd. IMRD Shahada

No.	Name Of Student	Field Report Name	Guide Name
20	Koli Dhananjay Hiralal	A Customer preference Towards OTT Platform Service/System	Asst.Prof. Vijay K. Gaikwad
21	Lohar Hemant Rajesh	Customer Satisfaction Analysis Facebook & Instagram	Asst.Prof. Sonali M Patil
22	Mahale Dnyaneshwar Dadabhai	Pradhan Mantri Gramin Digital Sakashtra	Asst.Prof. Anil R. Patil
23	Manyar Aadil Sk Salim	A Study On Use s Of Online Services Of MSRTC	Asst.Prof. Vijay K. Gaikwad
24	More Harshal Rajendra	Problem Faced By The Rural Area Customers about ATM Banking System	Asst.Prof. Sonali M Patil
25	Nizare Haresh Vishnu	A Study of Customer Satisfaction Telecom Service	Asst.Prof. Anil R. Patil
26	Padavi Terasing Kusana	A Study On Use s Of Online Services Of MSRTC	Asst.Prof. Vijay K. Gaikwad
27	Patil Alesh Madan	Analysis of E-Suvidha in Rural Area	Asst.Prof. Sonali M Patil
28	Patil Bhushan Dnyaneshwar	To Study Of Digital Banner App.	Asst.Prof. Anil R. Patil
29	Patil Harshal Rajendra	GM Fitness App	Asst.Prof. Vijay K. Gaikwad
30	Patil Jaydip Anand	To Study User Adoption & Challenges on Digilocker	Asst.Prof. Sonali M Patil
31	Patil Jayesh Chunilal	A Study on YONO You Only Need One-the Digital Banking App Of SBI	Asst.Prof. Anil R. Patil
32	Patil Nayana Dipak	A study on benefits of online Sarathi Parivahan Services	Asst.Prof. Vijay K. Gaikwad
33	Patil Pankaj Bhika	Analytical study on uses of CoWin Web Portal	Asst.Prof. Sonali M Patil
34	Patil Vinod Bhaskar	To Analysis & Get User Satisfaction About Google MAP Service	Asst.Prof. Anil R. Patil
35	Patil Vishal Suresh	A study on Online PAN Services	Asst.Prof. Vijay K. Gaikwad
36	Patil Yash Santosh	Case Study on Unified Payment Interface (UPI)	Asst.Prof. Sonali M Patil
37	Pawar Krushnakant Suresharao	A Study on Uses of Income Tax returns e-Filing	Asst.Prof. Anil R. Patil
38	Rajput Roshansinh Rajendrasinh	A Study on E-services of MSME (Udyam)	Asst.Prof. Vijay K. Gaikwad
39	Sonavane Gaurav Ravindra	A Study on Usibility of Google Meet for E-Online Meeting	Asst.Prof. Sonali M Patil
40	Sonawane Ganesh Hari	A Study On Online Services Of Pradhan Mantri Kisan Samman Nidhi	Asst.Prof. Anil R. Patil
41	Songare Karina Santosh	To Study The Impact of E-Peek pahani App for Farmers	Asst.Prof. Vijay K. Gaikwad
42	Tamkhane Harshal Atmaram	A study on uses of online yoga and fitness Zones	Asst.Prof. Sonali M Patil

S.T.E.S. & Co-Op.E.S.Ltd. IMRD Shahada

DIRECTOR
S.T.E.S. & Co-Op.Edu. Society Ltd.
Institute of Management
Research & Development
Shahada, Dist. Nandurbar

Shahada Taluka Educational Society & Co-Operative Educational Society Ltd.
Institute of Management Research and Development
Shahada Dist- Nandurbar
Academic Year 2022-23
TYBCA- VI Project Report – 2022- 23

No	Student Name	Guide Name	Project Name
1	Bafana Arpita Manoj	Asst. Prof. Gayatri P. Patil	Warehouse management system
2	Bedse Rohit Bapu	Asst. Prof. Sonali M. Patil	Loan Management System
3	Chaudhari Kunal Kanhayalal	Asst. Prof. Tahir Mansuri	Judging Management System
4	Chitte Pawan Rajendra	Asst. Prof. Gayatri P. Patil	Simple Real State Portal System
5	Choudhary Jignesh Krishna	Asst. Prof. Anil R. Patil	Ware House Management System
6	Devare Roshani Prakash	Asst. Prof. Gayatri P. Patil	Online Project Time Management System
7	Dhole Rinku Shamrao	Asst. Prof. Anil R. Patil	Simple Social Network Site Like Instagram
8	Girase Harshal Subhash	Asst. Prof. Gayatri P. Patil	Online Messaging System
9	Girase Nilesh Mangalsing	Asst. Prof. Tahir Mansuri	Train Schedule App
10	Hajare Shruti Pravin	Asst. Prof. Gayatri P. Patil	Online Diagnosis Lab Management App
11	Jadhav Avinash Ramesh	Asst. Prof. Gayatri P. Patil	Pharmacy Management System
12	Jadhav Bhavesh Ashok	Asst. Prof. Sonali M. Patil	Online Food Ordering System
13	Jadhav Chetan Pravin	Asst. Prof. Tahir Mansuri	Library Management System with QR Code
14	Jagtap Rakesh Subhash	Asst. Prof. Sonali M. Patil	Wither Forecast Management
15	Jain Yamini Champalal	Asst. Prof. Anil R. Patil	Pharmacy Sales and Inventory System
16	Javheri Chetan Yogeshsing	Asst. Prof. Tahir Mansuri	Secure ATM using Card Scanning Plus OTP
17	Kadam Aashwini Vijay	Asst. Prof. Sonali M. Patil	Online book store
18	Koli Dhananjay Hiralal	Asst. Prof. Anil R. Patil	Student Result Management System
19	Lohar Hemant Rajesh	Asst. Prof. Tahir Mansuri	Simple E-Learning System
20	Mahale Dnyaneshwar Dadabhai	Asst. Prof. Sonali M. Patil	Online Railway Reservation System
21	Manyar Aadil Sk Salim	Asst. Prof. Gayatri P. Patil	Sentiment based Movie Rating System
22	More Harshal Rajendra	Asst. Prof. Gayatri P. Patil	Online Employee Attendance System
23	Padavi Terasing Kusana	Asst. Prof. Sonali M. Patil	Online Lead Management System
24	Patil Vishal Suresh	Asst. Prof. Anil R. Patil	Wedding Planner App
25	Patil Alesh Madan	Asst. Prof. Anil R. Patil	Inventory & Sales Management System
26	Patil Bhushan Dnyaneshwar	Asst. Prof. Anil R. Patil	Water Billing Management System
27	Patil Harshal Rajendra	Asst. Prof. Gayatri P. Patil	Fitness App
28	Patil Jaydip Anand	Asst. Prof. Sonali M. Patil	Online Birth Certificate Management System
29	Patil Jayesh Chunilal	Asst. Prof. Sonali M. Patil	Online Job Portal
30	Patil Nayana Dipak	Asst. Prof. Tahir Mansuri	School Management System

S.T.E.S. & Co-Op.E.S.Ltd. IMRD Shahada

No	Student Name	Guide Name	Project Name
31	Patil Pankaj Bhika	Asst. Prof. Gayatri P. Patil	Automatic Question Paper Generator System
32	Patil Vinod Bhaskar	Asst. Prof. Tahir Mansuri	Hotel Management System
33	Patil Yash Santosh	Asst. Prof. Anil R. Patil	Covid-19 Travel Pass Management System
34	Pawar Krushnakant Suresharao	Asst. Prof. Tahir Mansuri	Ingredient Stock management System
35	Rajput oshansinh Rajendrasinh	Asst. Prof. Sonali M. Patil	Online Veterinary Appointment System
36	Sonavane Gaurav Ravindra	Asst. Prof. Gayatri P. Patil	Bus Pass Management System
37	Sonawane Ganesh Hari	Asst. Prof. Sonali M. Patil	Attendance Management System
38	Songare Karina Santosh	Asst. Prof. Anil R. Patil	Online School Document Processing
39	Tamkhane Harshal Atmaram	Asst. Prof. Gayatri P. Patil	GST Billing
40	Thakare Dhanraj Zulal	Asst. Prof. Anil R. Patil	Air Cargo Management System
41	Thakare Mayur Rupsing	Asst. Prof. Tahir Mansuri	School Club Management System
42	Thakare Urvendrakumar Vijay	Asst. Prof. Gayatri P. Patil	Design and Implementation of Covid-19 Directory on Vaccination System
43	Varude Pankaj Bhila	Asst. Prof. Tahir Mansuri	Automatic Question Paper Generator System

S.T.E.S. & Co-Op.E.S.Ltd. IMRD Shahada

DIRECTOR
S.T.E.S. & Co-Op.Edu. Society Ltd.
Institute of Management
Research & Development
Shahada, Dist. Nandurbar

S.T. Co-Op. ESs Institute of Management
Research and Development
Shahada, Dist :Nandurbar

List of Student

FYBCA Field Report : Environmental Studies (55557)

Academic Year :2022-23

Sr.No	Name Of Student
1	Bachhav Ishwar Kailas
2	Badgujar Riteshkumar Rajendra
3	Badgujar Yogesh Suresh
4	Behere Prajwal Ganesh
5	Beldar Awais Aayub
6	Beldar Syd Waseem Syd Yunus
7	Borse Hitesh Ravindra
8	Chaudhari Pranav Mahesh
9	Chavhan Mayuri Ratilal
10	Chitrakathe Rohan Bhagwan
11	Choudhari Kalpesh Ramakant
12	Chouhan Shivkanya Sunil
13	Desale Gokul Ranchod
14	Gangurde Shubham Santosh
15	Girase Kaveri Mithesing
16	Girase Krushna Indrasing
17	Girase Pankaj Jaypalsing
18	Girase Prashant Rupsing
19	Girase Sopan Padsing
20	Girase Suyog Yogendra
21	Girase Tejaswini Bharatsing
22	Jadhav Darshan Vinayak
23	Jadhav Mayur Ashok
24	Jadhav Pradip Masaribhai
25	Jadhav Umesh Suresh
26	Jagtap Mayur Tejraj
27	Jagtap Vinay Dhanraj
28	Kachwala Mustufa Tejun
29	Khanvilkar Raj Sunil
30	Khatik Faizan Shaikh Riyaz

S.T.E.S. & Co-Op. E.S. Ltd. IMRO Shahada

Sr.No	Name Of Student
31	Khatik Mahek Siraj
32	Koli Harshal Ravindra
33	Koli Vishal Vasant
34	Kuwar Umesh Suresh
35	Mahajan Yash Krushna
36	Mansuri Danish Jamil
37	Mansuri Hassan Rahim
38	Marathe Bhagyashri Shriram
39	Mistari Darshan Ravindra
40	More Nilesh Shivram
41	Mothe Tejal Manoj
42	Nikum Vijay Arjun
43	Nikumbhe Dipali Jagadish
44	Patel Ajay Bharat
45	Patil Chetan Arun
46	Patil Chetan Avinash
47	Patil Chinmay Chhagan
48	Patil Hemraj Arun
49	Patil Hitesh Satish
50	Patil Kalpesh Gulab
51	Patil Khushal Vitthal
52	Patil Lalit Gotu
53	Patil Neha Bhagwan
54	Patil Prafull Sunil
55	Patil Vivek Nimba
56	Pawar Jayesh Uttamrao
57	Pinjari Mohammad Raza Gulam Husen
58	Rajput Devendra Ranjitsing
59	Rajput Rupsing Bhikesing
60	Sadarao Sandip Ratilal
61	Saindane Sarthak Sunil
62	Salunke Snehal Suresh
63	Salunke Divya Harish
64	Salunkhe Nitesha Bhatu
65	Sayyed Aftab Khalid
66	Sheikh Umer Shakil
67	Shirsath Dipak Dinesh
68	Sonar Jayesh Shantilal
69	Sonawane Manthan Ravindra
70	Suryawanshi Neha Ravindra

Sr.No	Name Of Student
71	Suryawanshi Shailesh Chatur
72	Suryawanshi Uday Limba
73	Tamboli Harshal Chunilal
74	Teli Amir Ansar
75	Thakare Devid Subhash

DIRECTOR
S.T.E.S. & Co-Op.Edu. Society Ltd.
Institute of Management
Research & Development
Shahada, Dist. Nandurbar

S.T.Co. Op.Education Society LTD.
Institute of Management Research and Development,
Shahada Dist. Nandurbar
(Affiliated to Kavayitri Bahinabai Chaudhari North Maharashtra Universtiy, Jalgaon)

Prof. Anil R. Patil
Director

Website:- www.stcimrd.ac.in
e-mail – stcoopimrdshahada@gmail.com

College Phone- (02565) – 223122, 223532

CERTIFICATE

This is to certify that Mr. **RAJPUT ROSHANSINH RAJENDRASINH** Student of IMRD, shahada has Successfully completed the Fieldwork Report on **"A Study on e-services of MSME (Udyam) "** as a part of BCA 3rd year fieldwork Report for the **INSTITUTE OF MANAGEMENT RESEARCH AND DEVELOPMENT, SHAHADA** during the Academic year 2022-23.

During the Fieldwork he conducted, his behavior was found Good and gave satisfactory encouragement.

Asst. Prof. Vijay K. Gaikwad
Project Guide

Asst. Prof. Anil R.Patil
DIRECTOR
Director
S.T.Co.op.Edu.Society's Ltd.
Institute of Managemant
Research and Development
Shahada,Dist.Nandurbar

Examiner 1:

Examiner 2:

S.T.Co. Op.Education Society LTD.

Institute of Management Research and Development,

Shahada Dist. Nandurbar

(Affiliated to Kavayatri Bahinabai Chaudhari North Maharashtra Universtiy, Jalgaon)

Prof. Anil R. Patil
Director

Website:- www.stcimrd.ac.in
e-mail - stcoopimrdshahada@gmail.com

College Phone- (02565) – 223122, 223532

CERTIFICATE

This is to certify that **Mr. THAKARE URVENDRAKUMAR VIJAY** Student of IMRD, shahada has Successfully completed the Fieldwork Report on **"A Study on Remote Desktop Softwares"** as a part of BCA 3rd year fieldwork Report for the **INSTITUTE OF MANAGEMENT RESEARCH AND DEVELOPMENT, SHAHADA** during the Academic year 2022-23.

During the Fieldwork he conducted, his behavior was found Good and gave satisfactory encouragement.

Asst. Prof. Sonali M. Patil
Project Guide

Asst. Prof. Anil R.Patil
Director

DIRECTOR
S.T.Co.op.Edu.Society's Ltd.
Institute of Managemant
Research and Development
Shahada,Dist.Nandurbar

Examiner 1:

Examiner 2:

S.T.Co. Op.Education Society LTD.

Institute of Management Research and Development, Shahada Dist. Nandurbar

(Affiliated to Kavayitri Bahinabai Chaudhari North Maharashtra Universtiy, Jalgaon)

Prof. Anil R. Patil
Director

Website:- www.stcimrd.ac.in
e-mail - stcoopimrdshahada@gmail.com

College Phone- (02565) – 223122, 223532

CERTIFICATE

This is to certify that Mr. **CHAUDHARI KUNAL KANHAYALAL** Student of IMRD, shahada has Successfully completed the Fieldwork Report on **"A Study on e-audio book system"** as a part of BCA 3rd year fieldwork Report for the **INSTITUTE OF MANAGEMENT RESEARCH AND DEVELOPMENT, SHAHADA** during the Academic year 2022-23.

During the Fieldwork he conducted, his behavior was found Good and gave satisfactory encouragement.

Asst. Prof. Anil R.Patil
Project Guide

Asst. Prof. Anil R.Patil
Director

DIRECTOR
S.T.Co.op.Edu.Society's Ltd.
Institute of Management
Research and Development
Shahada,Dist.Nandurbar

Examiner 1:

Examiner 2:

S.T.Co. Op.Education Society LTD.

Institute of Management Research and Development,

Shahada Dist. Nandurbar

(Affiliated to Kavayitri Bahinabai Chaudhari North Maharashtra Universtiy, Jalgaon)

Prof. Anil R. Patil
Director

Website:- www.stcimrd.ac.in
e-mail – stcoopimrdshahada@gmail.com

College Phone- (02565) – 223122, 223532

CERTIFICATE

This is to certify that **Mr. JAGTAP RAKESH SUBHASH** Student of IMRD, shahada has Successfully completed the Fieldwork Report on **"A Study on Uses of GST Web Portal"** as a part of BCA 3rd year fieldwork Report for the **INSTITUTE OF MANAGEMENT RESEARCH AND DEVELOPMENT, SHAHADA** during the Academic year 2022-23.

During the Fieldwork he conducted, his behavior was found Good and gave satisfactory encouragement.

Asst. Prof. Anil R.Patil
Project Guide

Asst. Prof. Anil R.Patil
Director

DIRECTOR
S.T.Co.op.Edu.Society's Ltd.
Institute of Management
Research and Development
Shahada,Dist.Nandurbar

Examiner 1:

Examiner 2: 01/03/22

S. T. Co. Op. Edu. Society's Institute of Management Research and Developement, Shahada, Dist. Nandurbar (MS)

CERTIFICATE

This is to certify that

PATIL BHUSHAN DNYANESHWAR

PRN No. - 2020015400222435

Has satisfactorily completed Project Work entitled

Water Billing Management System

As prescribed by Kavayitri Bahinabai Chaudhari, North Maharashtra University Jalgaon as a part of the syllabus for the partial fulfillment in Bachelor of Computer Applications in Third Year for the Academic year 2022-23.

Guide
Asst. Prof. Anil R. Patil

Director
Asst. Prof. Anil R Patil
DIRECTOR
S.T.Co.op.Edu.Society's Ltd.
Institute of Managemant
Research and Development
Shahada, Dist. Nandurbar

External 1

S. T. Co. Op. Edu. Society's Institute of Management Research and Developement, Shahada, Dist. Nandurbar (MS)

CERTIFICATE

This is to certify that

DEORE ROSHANI PRAKASH

PRN No. - 2020015400222605

Has satisfactorily completed Project Work entitled

Online Project Time Management System

As prescribed by Kavayitri Bahinabai Chaudhari, North Maharashtra University Jalgaon as a part of the syllabus for the partial fulfillment in Bachelor of Computer Applications in Third Year for the Academic year 2022-23.

Guide
Asst. Prof. Gayatri P. Patil

Director
Asst. Prof. Anil R Patil

DIRECTOR
S.T.Co.op.Edu.Society's Ltd.
Institute of Management
Research and Development
Shahada, Dist.Nandurbar

External 1

External 2

S. T. Co. Op. Edu. Society's
Institute of Management Research and Developement, Shahada,
Dist. Nandurbar (MS)

CERTIFICATE

This is to certify that

RAJPUT ROSHANSINH RAJENDRASINH

PRN No. - 2020015400223512

Has satisfactorily completed Project Work entitled

Online Veterinary Appointment System

As prescribed by Kavayitri Bahinabai Chaudhari, North Maharashtra University Jalgaon as a part of the syllabus for the partial fulfillment in Bachelor of Computer Applications in Third Year for the Academic year 2022-23.

Guide
Asst. Prof. Sonali M. Patil

Director
Asst. Prof. Anil R Patil

DIRECTOR
S.T.Co.op.Edu.Society's Ltd.
Institute of Managemant
Research and Development
Shahada Dist.Nandurbar

External 1

External 2

S. T. Co. Op. Edu. Society's Institute of Management Research and Developement, Shahada, Dist. Nandurbar (MS)

CERTIFICATE

This is to certify that

THAKARE DHANRAJ ZULAL

PRN No. - 2020015400222563

Has satisfactorily completed Project Work entitled

Air Cargo Management System

As prescribed by Kavayitri Bahinabai Chaudhari, North Maharashtra University Jalgaon as a part of the syllabus for the partial fulfillment in Bachelor of Computer Applications in Third Year for the Academic year 2022-23.

Guide
Asst. Prof. Anil R. Patil

Director
Asst. Prof. Anil R Patil

DIRECTOR
S.T.Co.op.Edu.Society's Ltd.
Institute of Managemant
Research and Development
Shahada Dist.Nandurbar

External 1

External 2

|| अंतरी पेटवू ज्ञानज्योत ||

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव
Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

अभ्यास मंडळ विभाग

जा.क्र. :उमवि/२१/Environmental Studies/ 527 /२०१८ दिनांक:- २२/११/२०१८

प्रति,
क.ब.चौ.उमविशी संलग्न सर्व महाविद्यालयांचे मा.प्राचार्य
व मान्यता प्राप्त परिसंस्थांचे मा. संचालक आणि
मा.विभाग प्रमुख विद्यापीठ शैक्षणिक प्रशाळा / विभाग यांना...

विषय :- Environmental Studies या विषयाचे अभ्यासक्रमा संदर्भात.

महोदय / महोदया,

उपरोक्त विषयांस अनुसरुन आपणांस कळविण्यात येते की, मा.सर्वोच्च न्यायालयाचे निर्णयानुसार पर्यावरण संतुलन राखण्यासाठी प्रथम वर्षास प्रवेशित विद्यार्थ्यांसाठी सहा महिन्यांचा पर्यावरणशास्त्र विषयाचा अभ्यासक्रम जून, २००४ पासून सर्व विद्याशाखांमध्ये समाविष्ट करण्यात आलेला आहे.

शैक्षणिक वर्ष २०१८-१९ पासून प्रथम वर्ष कला विज्ञान व वाणिज्य वर्गांना Choice Based Credit System लागू करण्यात आलेली असल्याने Environmental Studies या विषयाचा अभ्यासक्रम Ability Enhancement Course अंतर्गत Choice Based Credit System प्रमाणे तयार करणेसाठी नियुक्त समितीच्या सभेत Environmental Studies विषयाच्या गुणांची विभागणी (Marks Pattern) देखील ६०:४० प्रमाणे करण्यात यावी, व गुणांकन (Marks Pattern) पुढील प्रमाणे करण्यात यावे, असे ठरले आहे.

लेखी परीक्षा (Theory)	**६० गुण**
अंतर्गत (Internal) परीक्षा फिल्ड वर्क /व्हायवा	**४० गुण**
एकूण	**१०० गुण**

अंतर्गत ४० गुणांची विभागणी पुढील प्रमाणे करण्यात यावी.

उपस्थिती (Attendance)	०५ गुण
वर्तणूक (Behaviour)	०५ गुण
व्हायवा (Viva-voce)	१० गुण
फिल्ड वर्क (Report of field Work)	२० गुण
	४० गुण

त्याअनुषंगाने Environmental Studies या विषयाचा अभ्यासक्रम विद्यापीठ अनुदान आयोगाने दिलेला असून तो जसाचे तसा लागू करण्यात आलेला असल्याने अभ्यासक्रमात बदल न करता अभ्यासक्रम तोच ठेवण्यात आला आहे. सदरचा अभ्यासक्रम उमविच्या संकेत स्थळावर अपलोड करण्यात आला आहे. तरी वरील आशय सर्व संबंधित प्राध्यापक व विद्यार्थी यांचे निदर्शनास आणून देवून पुढील योग्य ती कार्यवाही करुन विद्यापीठास सहकार्य करावे, ही विनंती.

म.कळावे,

आपला विश्वासू,

(ए.सी.मनोरे)
उपकुलसचिव
अभ्यास मंडळ विभाग

☎ : (९१) ०२५७- २२५७२९४, २९७
फॅक्स : (९१) ०२५७- २२५८४०६
वेबसाईट : www.nmu.ac.in
ई-मेल : acmanore@nmu.ac.in

Six Months Module Syllabus for Environmental Studies for Under Graduate Courses

UNIVERSITY GRANTS COMMISSION
BAHADURSHAH ZAFAR MARG
NEW DELHI- 110 002

2003

CORE MODULE SYLLABUS FOR ENVIRONMENTAL STUDIES FOR UNDER GRADUATE COURSES OF ALL BRANCHES OF HIGHER EDUCATION

Vision

The importance of environmental science and environmental studies cannot be disputed. The need for sustainable development is a key to the future of mankind. Continuing problems of pollution, loss of forget, solid waste disposal, degradation of environment, issues like economic productivity and national security, Global warming, the depletion of ozone layer and loss of biodiversity have made everyone aware of environmental issues. The United Nations Coference on Environment and Development held in Rio de Janerio in 1992 and world Summit on Sustainable Development at Johannesburg in 2002 have drawn the attention of people around the globe to the deteriorating condition of our environment. It is clear that no citizen of the earth can afford to be ignorant of environment issues. Environmental management has captured the attention of health care managers. Managing environmental hazards has become very important.

Human beings have been interested in ecology since the beginning of civilization. Even our ancient scriptures have emphasized about practices and values of environmental conservation. It is now even more critical than ever before for mankind as a whole to have a clear understanding of environmental concerns and to follow sustainable development practices.

India is rich in biodiversity which provides various resources for people. It is also basis for biotechnology.

Only about 1.7 million living organisms have been diescribed and named globally. Still manay more remain to be identified and described. Attempts are made to

conserve them in ex-situ and in-situ situations. Intellectual property rights (IPRs) have become importanat in a biodiversity-rich country like India to protect microbes, plants and animals that have useful genetic properties. Destruction of habitats, over-use of energy resource and environmental pollution have been found to be responsible for the loss of a large number of life-forms. It is feared that a large proportion of life on earth may get wiped out in the near future.

Inspite of the deteriorating status of the environment, study of environment have so far not received adequate attention in our academic programmes. Recognizing this, the Hon'ble Supreme Court directed the UGC to introduce a basic course on environment at every level in college education. Accordingly, the matter was considered by UGC and it was decided that a six months compulsory core module course in environmental studies may be prepared and compulsorily implemented in all the University/Colleges of India.

The experts committee appointed by the UGC has looked into all the pertinent questions, issues and other relevant matters. This was followed by framing of the core module syllabus for environmental studies for undergraduate courses of all branches of Higher Education. We are deeply conscious that there are bound to be gaps between the ideal and real. Geniune endeavour is required to minimize the gaps by intellectual and material inputs. The success of this course will depend on the initiative and drive of the teachers and the receptive students.

SYLLABUS

Unit 1 : Multidisciplinary nature of environmental studies

Definition, scope and importance

(2 lectures)

Need for public awareness.

Unit 2 : 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 resoureces for sustainable lifestyles.

(8 lectures)

Unit 3 : Ecosystems

- Concept of an ecosystem.

- 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)

Unit 4 : 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

- 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.

(8 lectures)

Unit 5 : 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 and industrial wastes.
- Role of an individual in prevention of pollution.
- Pollution case studies.
- Diaster management : floods, earthquake, cyclone and landslides.

(8 lectures)

Unit 6 : Social Issues and the Environment

- From Unsustainable to Sustainable development
- Urban problems related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rahabilitation of people; its problems and concerns. Case Studies
- Environmental ethics : Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment Protection Act.
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and control of Pollution) Act
- Wildlife Protection Act
- Forest Conservation Act
- Issues involved in enforcement of environmental legislation.
- Public awareness.

(7 lectures)

Unit 7 : Human Population and the Environment

- Population growth, variation among nations.
- Population explosion – Family Welfare Programme.

- Environment and human health.
- Human Rights.
- Value Education.
- HIV/AIDS.
- Women and Child Welfare.
- Role of Information Technology in Environment and human health.
- Case Studies.

(6 lectures)

Unit 8 : Field work

- Visit to a local area to document environmental assets-river/forest/grassland/hill/mountain
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural
- Study of common plants, insects, birds.
- Study of simple ecosystems-pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours)

SIX MONTHS COMPULSORY CORE MODULE COURSE IN ENVIRONMENTAL STUDIES : FOR UNDERGRADUATES

Teaching Methodologies

The core Moudle Syllabus for Environment Studies includes class room teaching and Field Work. The syllabus is divided into eight units covering 50 lectures. The first seven units will cover 45 lectures which are class room based to enhance knowledge skills and attitute to environment. Unit eight is based on field activites which will be covered in five lecture hours and would provide student first hand knowledge on varios local environmental aspects. Field experience is one of the most effective learning tools for environmental concerns. This moves out of the scope of the text book mode of teaching into the realm of real learning in the field, where the teacher merely acts as a catalyst to interpret what the student observes or discovers in his/her own environment. Field studies are as essential as class work and form an irreplaceable synergistic tool in the entire learning process.

Course material provided by UGC for class room teaching and field activities be utilized.

The universities/colleges can also draw upon expertise of outside resource persons for teaching purpose.

Environmental Core Module shall be integrated into the teaching programmes of all undergraduate courses.

Annual System : The duration of the course will be 50 lectures. The exam will be conducted along with the Annual Examination.

Semester System : The Environment course of 50 lectures will be conducted in the second semester and the examination shall be conducted at the end of the second semester.

Credt System : The course will be awarded 4 credits.

Exam Pattern : In case of awarding the marks, the question paper should carry 100 marks. The structure of the question paper being :

Part-A, Short answer pattern	-	20 marks
Part-B, Essay type with inbuilt choice	-	40 marks
Part-C, Field Work	-	40 marks

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)

j) Heywood, V.H & Waston, R.T. 1995. Global Biodiversity Assessment. Cambridge Univ. Press 1140p.

k) Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284 p.

l) Mckinney, M.L. & School, R.M. 1996. Environmental Science systems & Solutions, Web enhanced edition. 639p.

m) Mhaskar A.K., Matter Hazardous, Techno-Science Publication (TB)

n) Miller T.G. Jr. Environmental Science, Wadsworth Publishing Co. (TB)

o) Odum, E.P. 1971. Fundamentals of Ecology. W.B. Saunders Co. USA, 574p

p) Rao M N. & Datta, A.K. 1987. Waste Water treatment. Oxford & IBH Publ. Co. Pvt. Ltd. 345p.

q) Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House, Meerut

r) Survey of the Environment, The Hindu (M)

s) Townsend C., Harper J, and Michael Begon, Essentials of Ecology, Blackwell Science (TB)

t) Trivedi R.K., Handbook of Environmental Laws, Rules Guidelines, Compliances and Stadards, Vol I and II, Enviro Media (R)

u) Trivedi R. K. and P.K. Goel, Introduction to air pollution, Techno-Science Publication (TB)

v) Wanger K.D., 1998 Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p

(M) Magazine
(R) Reference
(TB) Textbook

Mmbers of the Expert Committee on Environmental Studies

1. Prof. Erach Bharucha
   Director
   Bharati Vidyapeeth
   Institute of Environment Education &
   Research, Pune

2. Prof. C. Manoharachary
   Department of Botany
   Osmania University
   Hyderabad

3. Prof. S. Thayumanavan
   Director
   Centre for Environmental Studies
   Anna University, Chennai

4. Prof. D.C. Goswami
   Head, Deptt. Of Environment Science
   Gauhati University
   Guwahati-781 014

5. Shri R. Mehta
   Director EE Division
   Ministry of Environment & Forest
   Prayavaran Bhawan, CGO Complex
   Lodhi Road, New Delhi-110 003

UGC OFFICIALS

6. Dr. N. K. Jain
   Joint Secretary
   UGC, New Delhi

NORTH MAHARASHTRA UNIVERSITY, JALGAON

'A' Grade NAAC Re-Accredited (3rd Cycle)

Faculty of Science and Technology
Syllabus

BACHELOR IN COMPUTER APPLICATION (BCA)

With effect from June- 2017-18

NORTH MAHARASHTRA UNIVERSITY, JALGAON
BACHELOR IN COMPUTER APPLICATION
STRUCTURE
(W.E.F. June 2017)

Course Name: Bachelor in Computer Application

Short Title of Degree: B C A

Faculty to which assigned: Science and Technology

Duration: 3 years full time

Pattern: Semester

Examination Pattern: 60 (External) + 40 (Internal)

No of paper per semester: 4 Theory + 3 Practical

Eligibility: Passed Higher Secondary Examination in Any Stream

OR

Diploma recognized by Board of Technical Education with minimum Duration of 3 years

Medium of Instruction: English

Objectives:

- BCA COURSE strives to create outstanding computer professionals with ethical and human values to reshape the nation's destiny. This programme aims to prepare young minds for the challenging opportunities in the IT industry, nourished and supported by experts in the fields.
- The BCA Course aims at inculcating essential skills as demanded by the global software industry through interactive learning process. This also includes team-building skills, audio- visual presentations and personality development programmes.
- The programme enhances analytical, managerial and communication skill besides inculcating the virtues of self-study. The Curriculum has been designed to cater to the ever changing demands of information technology along with necessary inputs from the Industry.
  The OBJECTIVE of the course is to develop skilled manpower in the various areas of software industry and Information Technology.

COURSE STRUCTURE
Bachelor Of Computer Application (BCA)
w.e.f. –Academic Year 2017-18

First Year BCA - (Sem I & II) w.e.f. - July 2017-18			
Paper	**Semester -I**	**Paper**	**Semester –II**
BCA 101	Foundation Course for Managers	BCA 201	Financial Accounting
BCA 102	Computer Fundament and Networking	BCA 202	Professional Communication
BCA 103	Essential of Web Design I	BCA 203	Essential of Web Design II
BCA 104	Programming In C	BCA 204	Programming In C++
BCA 105	Practical on Computer & Internet	BCA 205	Practical on Professional Communication
BCA 106	Practical on Web Design-I	BCA 206	Practical on Web Design-II
BCA 107	Practical on C Programming	BCA 207	Practical on C++ Programming

Second Year BCA - (Sem III & IV) w.e.f. - July 2018-19			
Paper	**Semester -III**	**Paper**	**Semester –IV**
BCA 301	Mathematics and Statistics for Managers	BCA 401	Introduction to Information System Audit
BCA 302	Management Information System	BCA 402	RDBMS
BCA 303	Java Programming	BCA 403	C#.NET
BCA 304	Linux Operating System	BCA 404	Data Structure
BCA 305	Practical on Java	BCA 405	Practical on C#.NET
BCA 306	Practical on Linux	BCA 406	Practical on RDBMS using Oracle
BCA 307	Practical on Tally ERP	BCA 407	Practical on Data Structure using CPP

Third Year BCA - (Sem V & VI) w.e.f. - July 2019-20			
Paper	**Semester –V**	**Paper**	**Semester -VI**
BCA 501	Entrepreneurship Development	BCA 601	E-Commerce & M-Commerce
BCA 502	Cyber Security	BCA 602	Cloud Computing
BCA 503	ASP.NET	BCA 603	Android Application Development
BCA 504	Software Engineering	BCA 604	Server Side Scripting using PHP
BCA 505	Practical on ASP.Net	BCA 605	Practical on Android &PHP
BCA 506	Practical on CASE Tool with MS-VISIO and Software Testing	BCA 606	Practical on Employability Skills
BCA 507	Field Work on IT Project Assessment	BCA 607	Project Report and Viva

NORTH MAHARASHTRA UNIVERSITY, JALGAON
BACHELOR IN COMPUTER APPLICATION
NOTES TO STRUCTURE
(W.E.F. June 2017)

1. English medium is allowed for instructions to all the courses under this programme.

2 For all the courses (except course no 507 & 607 at semester V & VI) there shall be a semester pattern of examination (Theory / Practical) of 100 marks, comprising of external examination of 60 marks, and 40 marks for continuous internal assessment for every course.

Theory Examination	Maximum marks
Internal Assessment ***	**40**
External Examination (Term end examination)	**60**
Total Marks	**100**

a. ***

Two internal tests are to be conducted by the subject teacher. Each test shall be of 20 marks and the concerned teacher shall consider both internal tests for Internal Assessment.

Internal Assessment	Maximum marks
Internal test-I	**20**
Internal test-II	**20**
Total Marks	**40**

3 For course no 507 & 607 at Semester V & VI, Field work & Project has been prescribed for 100 marks, comprising maximum of 50 marks each to be awarded by an external examiner and an internal examiner, based on the field work / project report submitted and the viva-voce thereon. The said examination is to be conducted at the end of the V / VI Semester. In case of course no 507 & 607 of Semester V/VI the 60:40 patterns will not be applicable.

Field Work / Project Report	Maximum marks
Internal Assessment	**50**
External Viva - voce	**50**
Total	**100**

4 There shall be External Examination (Viva-Voce) for Field work and Project Report. The project must be based Computer Software Application (Desktop or Web)

5 The syllabus of each course shall be taught in 4 lectures per week during the semester.

Question Paper Pattern for External Examination

Marks: 60 **Times: 2hrs**

· Attempt any Five.

· Each Question carries 12 marks.

Que.1	**(12 Marks)**
Que.2	**(12Marks)**
Que.3	**(12Marks)**
Que.4	**(12Marks)**
Que.5	**(12Marks)**
Que.6	**(12Marks)**
Que.7	**(12Marks)**
Que.8	**(12Marks)**

Semester –I

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 101 - Foundation Course for Managers

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objectives-

- ✓ **To study the fundamental Accounting concepts, terms, jargons and learn the process of recording of financial transactions in the books of Accounts.**
- ✓ **To develop the foundation for higher studies in the field of accounting.**

Unit1- Introduction to Accounting:(theory only) **[10L] [15M]**

1.1 Meaning and definition of Financial Accounting.
1.2 Objectives and scope of Financial Accounting,
1.3 Meaning and use of Book Keeping
1.4 Accounting v/s Book Keeping
1.5 Advantages and Limitations of Financial Accounting.

Unit 2- Basics of Accounting (theory only) **[10L] [15M]**

2.1 Types of Accounting
2.2 Golden Rules of Accounting.
2.3 Double entry system in Accounting
2.4 Terms used in accounting : Debtors, Creditors, Bill Receivable, Bills Payable, Credit Note ,Debit Note ,Petty Cash ,Contra Entry ,Trade Discount ,Cash Discount,Suspense A/c
2.5 Users of accounting information

Unit 3-Recording of transactions: (theory & Practical Problems) **[10L] [15M]**

3.1 Accounting Process from Journal to Final Accounts
3.3 Journals& Problems on Journal Entries
3.4 Subsidiary Books
3.5 Cash Book& Problems on Preparation of Cash Book
3.6 Ledger
3.7 Balancing of Ledger – Balance c /d and Balance b/d (Opening & Closing Balance)
3.8 Rectification of Errors: meaning
3.9 Types of Errors
3.10 Problems on Rectification of Errors

Unit 4- Preparation of final accounts: (theoryonly) **[10L] [15M]**

4.1 Preparation of Trading and Profit & Loss Account and Balance Sheet of sole proprietor
4.1.1 Pro-forma of Trading Accounts
4.1.2 Pro-forma of Profit & Loss Accounts
4.1.3 Pro-forma of Balance sheet
4.2Importance of final accounts to the Businessman, Government,Creditors and other stakeholders of Business.

Unit 5- Conceptual Frame work: (theory only) **[10L] [15M]**

5.1 Brief review of Accounting Standards in India
5.2 Accounting Standards-concept, objectives and Scope
5.3Accounting Principles, Conventions and Concepts
5.4 Accounting Policies

Unit 6: Corporate Banking: (theory only) **[10L] [15M]**

6.1 Bank Pass Book,
6.2 Cheque-meaning and Types
6.4 Discounting of Cheques, Dishonour of Cheque
6.4 Current Account & Savings Accounts (CASA)
6.5 Bank Overdraft, (BOD)
6.6 Cash Credit (CC)
6.7 Internet Banking: meaning & Advantages
6.8 Plastic Money :Debit Card & Credit Card
6.9 RTGS: Real Time Gross Settlement
6.10 NEFT: National Electronic Fund Transfer

Reference Books

Recommended Books

1. Financial accounting: By Jane Reimers (Pearson Education) *ISBN*: 9780136115274
2. Accounting Made Easy By Rajesh Agarwal & R Srinivasan (Tata McGraw –Hill) *ISBN* 0070600600
3. Financial Accounting for Management: By Amrish Gupta (Pearson Education) ISBN - 9788131754528

4. Financial Accounting for Management: By Dr. S. N.Maheshwari (Vikas Publishing House) *ISBN* : 9789325956193
5. Fundamentals of Accounting: S.K Paul

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 102 - Computer Fundament and Networking

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective- To make students well familiar with computer and networking fundamentals.

Unit 1. Introduction: **[10L] [15M]**

History & generation of computer, Block diagram of computer system, Types of computers
Definition- Software, Hardware, Compiler, Interpreter, Characteristics & applications ofComputer,
Data Representation: Introduction to Number system: decimal, binary, octal and hexadecimal, Conversion in Number System, Character representation: ASCII.

Unit 2. Memory Concepts and Input Output Devices: **[10L] [15M]**

Concepts of Memory cell, Types of memory, Primary- RAM, ROM, PROM, EPROM
Secondary - Magnetic disk, hard disk, CD , Input devices - keyboard, mouse, scanner, web camera Output device - printers, plotters, LCD projector

Unit3. Algorithm & flowcharts: **[10L] [15M]**

Definition - Algorithm, flowchart, Flowchart symbols,
Examples for constructing algorithmand flowchart for simple programs (Minimum 5)

Unit 4. Operating System Concepts: **[10L] [15M]**

Definition,Need and Function of an operating system,
Types of operating system,
Comparative study of various operating systems.

Unit 5. Introduction to Network: **[10L] [15M]**

What is Computer Network. Types of Networks: LAN, MAN, WAN, Wireless Networks, Transmission Path: Twisted Pair, Coaxial Cable, Fiber Optics, Working of Internet, Use of Internet, Applications of Internet, Study of Web Browsers, Search Engines, Creating an E-mail Account, Sending & Receiving E-mail (with attachment)

Unit 6.Topologies & Switching **[10L] [15M]**

Topologies: Star, Tree, Bus, Ring, Mesh, Fully Connected.
Switching: Circuit Switching, Packet Switching, Message Switching

Reference Books

1) Fundamentals of computer - V. Raja Raman (PHI Publication) ***ISBN*** 10: 8120340116
2) Computer and commonsense - Roger Hunt and John Shelley (PHI Publication) ***ISBN*** 10: 0131646737
3) Andrew S.Tanenbaum Computer Networks – Fourth Edition. ***ISBN number*** 0130661023

.

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 103 - Essential of Web Design I

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective- - To make students well familiar Internet and Web designing

Unit 1 - Internet & Web Designing Concepts **[10L] [15M]**

Internet**:** Introduction to Internet, Internet Services, WWW, Hypertext Transfer Protocol (HTTP), URL, Web server, Proxy servers

Web Site Concepts: Web page, static and Dynamic web page, Web site development Phases,

Unit 2 - HTML Fundamentals **[10L] [15M]**

Hypertext Basics, Basic Components of HTML, HTML Tags,Head, and Title Tags, Body Tags, Creating HTML Code using different editor (notepad, EditPlus, TextPad etc.)

Viewing in aBrowser.

Unit 3 - Formatting Text **[10L] [15M]**

Importance of Formatting, Paragraphs and Alignment, Bold Text, Italic Text, Underline, HTML Headings, Ordered List Tags and Attributes, Unordered List Tags and Attributes Nested Lists, Font Tags, Font Attributes, Marquee Tag and Attributes.Heading Tag.

Unit 4 – Images **[10L] [15M]**

Different Image Formats, Image Tags and Attributes,

Background Images and Color

Inserting Audio and Video Files, images Link

Unit 5 - Links & Tables **[10L] [15M]**

How Hyperlinks Work, Anchor Tag and HREF. Attributes, Absolute vs. Relative Links, Border E-Mail Links, and Table Tags & Table Attributes, RowAttributes, Cell Attributes, Merging Rows & Columns.

Unit 6 - Frames and Forms **[10L] [15M]**

Frames, Pros and Cons of Using Frames, Creating Framesets, Frameset Attributes & Frameset Examples, Frame Tag and Attributes,No frames Tag,

Anatomy of A Form, Form Tag And Attributes, Text Boxes, Check Boxes, Radio Buttons, Text Areas, List Box Submit and Reset Buttons

Reference Books

1) Textbook of Web Designing By Joel Sklar, Cengage Learning Publication 2009
2) Web designing in Nut Shell (Desktop Quick Reference) by Jennifer Niederst Publication – O'Reilly publication
3) Designing web navigation by James Kalbach Publication – O'Reilly publication Textbook of
4) Web Designing By Joel Sklar, Cengage Learning Publication 2009 ***ISBN***, 1423901940

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 104 - Programming In C

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: Prepare students to acquire knowledge of programming using C. It is the precursor and inspiration for almost all of the most popular high-level languages available today.

Unit 1 -Basics of C Language **[10L] [15M]**

Overview of C: History of C, Importance of C, Structure of a C Program.

Elements of C: C character set, identifiers and keywords, Data types, Constants and Variables, Assignment statement, Symbolic constant.

Input/output: Unformatted & formatted I/O function in C, Input functions viz. scanf(), getch(), getche(), getchar(), gets(), output functions viz. printf(), putch(), putchar(), puts().

Unit 2 -Control Flow and Logical Expressions **[10L] [15M]**

Operators & Expression: Arithmetic, relational, logical, bitwise, unary, assignment, conditional operators and special operators, operator hierarchy & associativity

Decision making & branching: Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder, switch statement, goto statement.

Loops control structure: while loop, for loop, do–while loop, nested loop, break , continue, switch, go to, exit statement

Unit 3 -Functions **[10L] [15M]**

Functions: Definition, prototype, passing parameters, scope of variable, storage class, recursion. function Overloading .

Unit 4 -Arrays and String **[10L] [15M]**

Array, array initialization, and Manipulation, Multidimensional array, Strings, Standard library string function strlen(), strcpy(), strcat(), strcmp() etc.

Unit 5 -Pointers **[10L] [15M]**

Definition and declaration, Uses, Initialization, address operator,pointer arithmetic,dynamic memory allocation,arrays and pointers,pointer to function

Unit 6 -Structure, Union **[10L] [15M]**

Structure: use of structure, declaration of structure, accessing structure elements, how structure elements are stored, array of structure, Union, Difference between structure and union.

Reference Books

1) Programming with problem solving through 'C'. (ELSEVIER) (for UNIT I) ***ISBN***-10: 0124058760
2) Programming in C", E. Balaguruswamy Tata McGraw Hill ISBN 10: 1259004619
3) "C The Complete Reference", H. Schildt, Tata McGraw Hill ***ISBN***-13
4) The C Programming language by Brian W. Kernighan Dennis M. Ritchie Prentice Hal SBN ***0-13-110362-8***
5) Text Book - 1. Y. Kanetkar, "Let us C", BPB Publications ***ISBN*** 10: 8183331637 ***ISBN*** 13: 9788183331630

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 105 - Practical on Computer & Internet

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: To practically train students in using computer and internet.

1. Run different commands of MS DOS – CD, DIR, COPY, REN, CLS, MD, CD, RD etc.
2. Study information of Internet connectivity components line, VSAT, Broadband,
3. Study information of Internet connectivity components Modem, IP Sharer, Hub, and Switch.
4. Study different web Browsers- Internet Explorer, Fire fox, downloading of files,
5. Connect the Internet; open any website of your choice and save the WebPages.
6. Search any topic related to your syllabi using any search engine and download the relevant material.
7. Create your E-Mail ID on any free E-Mail Server.
8. Login through your E-Mail ID and do the following:
   a. Read your mail
   b. Compose a new Mail
   c. Send the Mail to one person
   d. Send the same Mail to various persons
   e. Forward the Mail
   f. Delete the Mail
   g. Send file as attachment
9. Send any greeting card to your friend.
10. Surf Internet using Google to find information about your State / Country / Famous Personality.
11. Surf Internet using Google to find Tourism information about your state
12. Surf Internet using Google to find colleges around your area.

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 106 - Practical on Web Design-I

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective- - To make students well familiar with internet and HTML Script

1. Create web page using basic HTML tags
2. Createweb page using Marquee Tag and Different Formatting tag.
3. Create a web page using different List tag.
4. Create web page using Anchor Tag (Internal Link and External Link)
5. Create web page to design time table of your college using Table tag.
6. Create Web page with different images.
7. Create web page inserting audio and video files.
8. Design a web page using Frames and Frameset Tag.
9. Design a simple Webpage of College Admission Form.
10. Design static and simple website for your college.

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 107 - Practical on C Programming

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: To practically train students in C programming language.

1. Write a program in C to demonstrate Arithmetic operators.
2. Write a program in C to demonstrate Relational operators.
3. Write a program in C to check the number is palindrome or not.
4. Write a program in C to check the number is Armstrong or not.
5. Write a program in C for Fibonacci series up to given term.
6. Write a program in C to find factorial of given number.
7. Write a program in C for Matrix Addition/subtraction.
8. Write a program in C for Function Overloading.
9. Write a program in C for swapping two integer numbers using call by value and call by reference
10. Write a program in C which demonstrates the string function.
11. Write a program in C to demonstrate pointer variable.
12. Write a program in C to demonstrate structure.

Semester –II

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 201 Financial Accounting& Costing

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objectives:

- ✓ **To give the practical knowledge of accounting to the students.**
- ✓ **To make the students competent in preparation of Accounts for the Business Entities.**

Note: For Question Paper Pattern of subjects related to Accounts & Costing refer guidelines given in syllabus instructions.

SCECTION-I FINANCIAL ACCOUNTING

Unit 1: Basics of Accounts(Theory and Practical Problem) [10L] [15M]

1.1 Types of Accounts&Golden Rules of Accounts
1.2 Journal: - Concept and Problems on Journal Entries.
1.3 Types of Journals: Cash Book, Sales Book, Purchase Book, Debtor Book, Creditor Book, Petty Cash Book, Bills Receivable Book and Bill Payable Book
1.4 Ledger: - Concept, Pro-forma
1.5 Ledger Posting and Ledger Balances
1.6 Cash Book: Types &
1.7 Problems on Preparation of Cash Book

Unit 2 Preparation of Final Accounts:(Theory and Simple Practical Problem) [10L] [15M]

2.1 Trial Balance: - Concept, Objectives and Pro forma
2.2 Preparation Of Trading, Profit and Loss and Balance-sheet (Horizontal Format- i.e. Regular Format)
2.3 Importance of Final Accounts in Business.

Unit 3: Accounting Standards (Theory) [10L] [15M]

3.1 Meaning of Accounting Standards
3.2 Objectives and Scope of Accounting Standards
3.2 AS- 1 – Disclosure of Accounting Policies
3.3 AS- 2- Valuation of Inventories
3.4 AS- 6- Accounting for Depreciation
3.5 AS- 10 – Accounting For Fixed Assets

Chapter 4: Bank Reconciliation Statement (Theory and Simple Practical Problem) [10L] [15M]

4.1 Meaning and concept
4.2 Need of Bank reconciliation statement
4.3 Reasons of Difference between the balance of Cash Book and Pass Book
4.4 Preparation of Bank Reconciliation Statement

SCECTION-II COST ACCOUNTING

Unit 5: Fundamentals of Cost Accounting (Theory and Problem) [10L] [15M]

5.1 Cost, Expense, Loss : Meaning
5.2 Costing, Cost Accounting
5.3 Types of Costs on the basis of various criteria
5.4 Advantages and Limitations of Cost Accounting
5.5 Difference between Financial Accounting and Cost Accounting
5.6 Cost Sheet: Importance and objectives of Cost Sheet
5.7 Format of Cost Sheet&Preparation of Cost Sheet**(Problem)**

Chapter 6 Material Control (Theory and Problem) [10L] [15M]

6.1 Importance of Materials accounting and control in Industry
6.2 Different Level of Materials & their Calculations :
6.3 Economic Order Quantity (EOQ), Maximum Level, Minimum Level, Average Level, Reorder Level, Danger Level
6.4 Procedure and documentation of Purchasing and Storekeeping
6.5 Pro forma / Formats of:
6.5.1 Purchase Requisition
6.5.2 Purchase Order,
6.5.3 Bin Cards,
6.6 Inventory Pricing Methods:
6.6.1 FIFO, LIFO, Simple Average Method: Advantages
6.6.2 Problems on Preparation of Store ledger under FIFO, LIFO, Simple Average Method

Reference Books

References:

1) Introduction to Accountancy – T. S. Grewal& S. C. Gupta – S. Chand – 8thEdition ISBN 10: 8121905699 / ISBN 13: ***9788121905695***
2) Accounting Made Easy: By Rajesh Agarwal & R Srinivasan (Tata McGraw –Hill) ***ISBN*** 1403 910324. 2.
3) Fundamentals Of Accounting, Dr. S.N. Maheshwari&Dr.S.K. Maheshwari, Vikas Publishing House, New Delhi ***ISBN*** 13: 9788180544491
4) Financial Accounting – Jawaharlal &Shrivastava – S.Chand & Sons ***ISBN*** 0-672-32901-8
5) Accounting for Managers - Vijay Kumar – TMH ***ISBN*** 13: 9780070090170
   Advanced Accounts, M.C. Shukla, T. S. Grewal& S.C. Gupta, S. Chand & Co Ltd. ***ISBN*** 13: 9788121910163

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 202 Professional Communication

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective-To impart the basic communication skills among students.

Unit 1 - Basics of Communication **[10L] [15M]**

1) Meaning & Objectives of communication,
2) Process of communication, Importance of communication,
3) Steps of Effective Communication
4) Methods of Communication
    a) Verbal & Non verbal
    b) Oral & Written
    c) Internal & External

Unit 2 - Use of English Language **[10L] [15M]**

1) Tenses in a Nutshell -For proper sentence construction.
2) Punctuation: Commas, Semi-colons, colons, Hyphens & Dashes, Apostrophes
3) Vocabulary Building -; Antonyms and Synonyms; Prefixes and Suffixes
4) Development of English Language: through LSRW Skills Listening, Speaking, Reading, Writing

Listening to common English Sentences, Popular and Motivational Speeches.

Speaking Routine and situational Conversation; Just two Minutes - 2 Minute talk on any topic

Reading Skills- Speed reading techniques -Loud and silent, Reading-Simple Motivational success stories of well known people.

Tactful Use of Language: Asking for action, talking about errors, Techniques of Emphasis

Unit 3- Written Communication-I **[10L] [15M]**

1) Meaning, Distinction with Oral Communication, Merits & Limitations of Written communication.
2) Letter writing, Essentials of Good Business letters
3) Types of letters: Types of Application Letters- Application to Director for Leave, Application for delayed fee payment, Application for Bonafide Certificate.
4) Writing Direct Messages by Manager –Delivering: Positive, Neutral & Negative Information.

Unit 4 - Written Communication –II **[10L] [15M]**

1) E-mail –Drafting & Sending Emails
2) Report Writing: Meaning & Nature of Report, Formats of Reports –Formal, Informal reports, Writing Reports -Data collection, organizing, presentation of the Report.

Unit 5 - Organizational Communication –I **[10L] [15M]**

1) Job Applications: Covering Letter-Resume –Appointment Letter
2) Meaning & Importance of Organizational Communication.
3) Upward and Downward Communication

4) Horizontal Communication
5) Grapevine.

Unit 6 - Organizational Communication –II **[10L] [15M]**

1) Internal communication: Notice, Circular, Memo.
2) External Communication –Enquiries, Quotations, Bank & Financial Institutions
3) Holding Press Conferences & Preparing Press Releases

Reference Books

1) Effective Technical Communication by M AsharfRizvi Tata McGraw-Hill Publisher ***ISBN***:9780070599529,
2) Communication for Business –Taylor & Chandra –Pearson ***ISBN*** 13: 9788131727652
3) Business Communication –Rai&Rai –Himalaya ***ISBN*** 0415213002
4) Business Communication by Raman & Singh, Oxford Publication ***ISBN*** 13: 9780198077053
5) Basics of Business Communication –Lesikar&Flatley –Tata McGraw Hills ***ISBN*** 13: 9780070599765
6) Business Communication –C.S. Raydu –Himalaya Publishing House ***ISBN*** : 817866125X

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 203 Essential of Web Design II

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective- - To make students well familiar with JavaScript and CSS

Unit 1 - Introduction to Cascading Style Sheets [10L] [15M]

- Advantages of Style Sheets,
- Role of CSS in Web Designing,
- Rules of CSS
- CSS Structure and Syntax
- Selectors and declarations
- Working with style classes
- Working with style IDs
- Child Selector
- Type Selector
- Inheriting styles Using Different Kinds of Style Sheets
- Internal style sheets, External style sheets

Unit 2 - Using Cascading Style Sheets [10L] [15M]

- Managing Layout and Positioning
- Visual layouts, Positioning
- Changing Fonts for Visual Interest and Better Readability
- Body text
- Headings
- Hyperlinks
- Externalizing Style Sheets
- Using CSS with Multimedia
- Visual media styles
- Paged media styles

Unit 3 - Introduction to Java Script [10L] [15M]

- Meaning of Scripting Language,
- Types of Scripting Language (JavaScript, VBScript, Perl, ASP, PHP
- Differences between client-side and server-side scripting.
- Writing JavaScript into HTML.

- Basic Programming Techniques: Data Types and Literals, Creating variables, JavaScript Array, operators and Expressions (Arithmetic, Logical. Comparison. Assignment operator) in JavaScript.
- JavaScript Programming Constructs: Conditional checking (if-then-else statement), Loops (for loop and While loop),

Unit 4 – Java Script Function **[10L] [15M]**

- Creating functions in Java script
- Java Script Built-in String function
- Handling Web Page Events – OnClick, OnMouseOver, OnMouseOut, OnBlur etc.
- Dialog Boxes (Alert, Prompt and Confirm Dialog Box)

Unit 5 – Java Script Objects **[10L] [15M]**

- Array Object
- Date & time object
- Math object
- String object
- Document object
- History object

Unit 6 – Java Scripting and forms **[10L] [15M]**

- Form Object's - Properties and Methods
- Form Actions – Reset and Submit.
- Form Validation – E-Mail, Not Null, Number etc.

Reference Books

1) The ABC's of Java Script by Lee Purcell Mary Jane Mara, BPB Publication .***ISBN***: 8170298261.
2) The Complete Reference – Web Design, Thomas A. Powell, TMH, ISBN 0-07-041186.
3) How to become webmaster in 14 days, James L Mohler, Techmedia ***ISBN*** 1575211696.
4) HTML, DHTML, JavaScript, Perl & CGI by Ivan Bayross, BPB Publishing ... ***ISBN***: 8176562742
5) Web References: www.w3c.org, www.sybex.com ***ISBN*** 0-07-041186
6) Web Enabled Commercial Application Development using HTML, DHTML, Java Script,PERL ISBN 13: ***9788183330084***.
7) CGI By Ivan Bayross, BPB Publication ***ISBN*** 13: 9788183330084

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 204 Programming In C++

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective- To train students in programming using object oriented concepts with C++.

Unit 1 – Introduction and Basics of OOP's **[10L] [15M]**

- Introduction to Object Oriented Paradigm,
- Need Object-Oriented Programming,
- Characteristics of Object-Oriented Programming.
- Difference of Structured Vs. OOPs

Unit 2 –C++ Controls , Pointers & Functions **[10L] [15M]**

- Input/ Output in C++,
- Data Types, Operators,
- Control & Conditional Statements,
- Pointer variables,
- Array of pointer,
- Pointer arithmetic,
- Function and its components,
- Different types of parameter passing mechanisms,
- Pointer as function argument
- Recursive function,
- Function overloading,
- Inline Function,

Unit 3 –Object and Classes **[10L] [15M]**

- Class declaration in C++,
- Objects,
- Constructors and types of constructor (Default constructor, Copy Constructor, Parameterized constructor).
- Destructor,
- Difference between classes and structures.
- Friend class Friend Function

Unit 4 – Operator Overloading **[10L] [15M]**

- Operator overloading,
- Overloading Unary & Binary Operators without friend function.

- Features of operator overloading,
- Operators overloading using friend function.

Unit 5 – Inheritance **[10L] [15M]**

- Inheritance- definition, concept,
- Types of Inheritance,
- visibility modes- Public, Private, Protected,
- Virtual Base Class,
- Benefits of Inheritance,

Unit 6 – Virtual Functions, Templates & Exception& File handling **[10L] [15M]**

- Virtual Function,
- Pure Virtual Functions,
- Abstract classes,
- Function Templates
- Exception handling constructs.

Reference Books

1. Mastering C++ by K R Venugopal, Rajkumar, T Ravishankar, Publication - TMH
2. Exploring C++ by YashwantKanetkar
3. Object Oriented Programming using C++ by W. Balguruswamy, Publication - TMH
4. The C++ Programming Language by BjaraneStroustrup,

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 205 Practical on Professional Communication

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective- To impart basic communication skills among students

1. Prepare letter of application to
   a. The Director/Head for leave
   b. The Director/Head for delay in payment of fee.
   c. The Director/Head for Bona fide Certificate
2. Prepare Notice
3. Prepare Memo
4. Prepare Circular
5. Create E-mail
6. Prepare Written Report
7. Prepare Grammar Worksheet – Punctuation (Prepare 10 to 15 sentences using various punctuation marks)
8. Prepare Grammar Worksheet – Tenses (Prepare 10 to 15 sentences using various tenses)
9. Give a two minute talk on a topic of choice (With proper beginning and ending)
10. Prepare a Report
11. Draft a Resume
12. Write a Job Application Letter including a covering letter

Note: Students may use their creativity.

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 206 Practical on Web Design-II

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective- - To make students well familiar with css and JavaScript

1. Create web page to set background color using CSS.
2. Create web page to set different font style to each paragraph.
3. Design a web page using Inline and Internal CSS
4. Demonstrate the use of External CSS
5. Create a Webpage different background images using CSS.
6. Write JavaScript code to demonstrate different string functions.
7. Write JavaScript code to demonstrate different events.
8. Create a HTML page to demonstrate Date & Time object using JavaScript.
9. Write JavaScript code to demonstrate use of Dialog Boxes (Alert, Confirm, and Prompt).
10. WriteJavaScript code to validate E-Mail Id.

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 207 Practical on C++ Programming

w.e.f. 2017-18

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective- To practically train students in programming in object oriented way using C++.

1. Write a program to check given number is prime or not.
2. Write a program to demonstrate use of Function overloading
3. Write a program to demonstrate encapsulation using of class.
4. Write a program to demonstrate use constructors and Destructor.
5. Write a program to demonstrate single inheritance
6. Write a program to demonstrate multiple inheritances.
7. Write a program to demonstrate use of operator overloading using friend function.
8. Write a program to demonstrate use of operator overloading without using friend function.
9. Write a program to demonstrate use of friend function.
10. Write a program to demonstrate use of Friend class.
11. Write a program to demonstrate use of Virtual functions
12. Write a program to demonstrate use of function templates.

Second Year - Semester –III

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 301 : Mathematics and Statistics for Managers

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

Objective :To impart the required knowledge of Mathematics and statistics for managerial activities among students.

Unit 1: Mathematical Logic [10L] [15M]

1.1. Meaning of Statement
1.2. Primitive and Compound Statements
1.3. Truth Values of a Statement
1.4. Law of Excluded Middle
1.5. Logical Operations: Negation, Conjunction & Disjunction Implication, Double Implication, Equivalence
1.6. Equivalence of Logical Statements
1.7. Truth Tables & Construction of Truth Tables
1.8. Tautology and Contradiction
1.9. Argument: Valid And Invalid Arguments

Unit 2: Sets [10L] [15M]

2.1. Meaning of a Set
2.2. Methods of Describing a Set
  2.2.1. Tabular Form
  2.2.2. Set Builder Form
2.3. Types of a Set:
  2.3.1. Finite Set, Infinite Set, Empty Set, Subset, Universal Set,
  2.3.2. Equal Sets, Overlapping Sets, Disjoint Sets, Complementary Set.
2.4. Operations on Sets
  2.4.1. Union of Sets
  2.4.2. Intersection of Sets
  2.4.3. Difference of Sets
2.5. Demorgan's Laws (Without Proof)
2.6. Venn Diagrams
2.7. Cartesian Product of Two Sets
2.8. Statement of Following Laws (Without Proof) Relating To Union and Intersection of Sets :- Idempotent Laws (ii) Identity Laws (iii) Commutative Laws (iv) Associative Laws (v) Distributive Laws

Unit 3: Matrices [10L] [15M]

3.1. Meaning of a Matrix, Order Of Matrix
3.2. Types of Matrix
3.2.1. Zero Matrix, Column Matrix, Square Matrix, Diagonal Matrix,
3.2.2. Scalar Matrix, Unit Matrix
3.2.3. Symmetric Matrix, Skew-Symmetric Matrix,
3.2.4. Transpose of a Matrix: Singular Matrix & Non -Singular Matrix.
3.3. Algebra of Matrices:-
3.3.1. Equality of Matrices

3.3.2. Multiplication of Matrix by A Scalar
3.3.3. Addition of Matrices, Subtraction of Matrices
3.3.4. Multiplication of Matrices

Unit 4: Introduction to Statistics [10L] [15M]

4.1. Meaning of Statistics
4.2. Importance and Limitations of statistics
4.3. Meaning of data, Raw data, Primary data, Secondary data
4.4. Variable and attribute, Types of variable: - districts and continuous
4.5. Meaning of Population and sample
4.6. Introduction to methods of sampling: - simple
random sampling and strafied random sampling

Unit 5: Measures of central tendency [10L] [15M]
5.1 Meaning and central tendency
5.2 Statement of measures of central tendency: - arithmetic mean, geometric mean, harmonic mean, median and mode
5.3 Computation of these measures of central tendency for given raw data
5.4 Partition values: - quartiles, deciles and percentiles
5.5 Computation of partition values for given raw data

Unit 6: Mathematical and Statistical Calculations using MS-EXCEL [10L] [15M]

6.1 Step by step procedure to perform basic logicalfunction using MS-Excel
6.2 Step by step procedure to perform basic mathematical function with MS-Excel
6.3 Step by step procedure to perform basic statistical function using MS Excel

Reference Books

- Business Mathematics Sancheti&Kapoor Sultan Chand & Co. New Delhi ***ISBN*** 10: 8180545385
- Business Mathematics & Analytics Anand Sharma Himalaya Publishing ***ISBN*** 13: 9788180545382
- Business Mathematics Dr.Ramnath Dixit and Dr. .Jinendra Jain Himalaya Publishing
- Business Mathematics & Statistics: Punaini, Pearson Education ***ISBN***: 9780070612044
- Business Statistics C M Chikkodi& B G Satyaprasad Himalaya Publishing
- Business Statistics S P Gupta Sultan Chand &Co.NewDelhi ***ISBN*** : 8180549453
- MS-Excel Help files from Microsoft ***ISBN***-13: 978-1285168432

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 302 : Management Information Systems

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

Objectives: To impart the knowledge of MIS among students.

1 Introduction **[10L] [15M]**

Definition, Purpose, Objectives and Role of MIS in Business Organization with particular reference to Management Levels. MIS Growth and Development,

2 MIS in the Organization **[10L] [15M]**

Concept and design. Transaction Processing System, Decision Support System, Executive Information system, Expert System, and the recent developments in the field of MIS.

3 System Development **[10L] [15M]**

Concept of System, Types of Systems – Open, Closed, Deterministic, Probabilistic, etc. Relevance of choice of System in MIS, Integration of Organization Systems and Information Systems,

4 System Development Life Cycle **[10L] [15M]**

System Analysis, Design and Implementation, MIS Applications in Business.

5 Information Concepts **[10L] [15M]**

Data and Information – meaning and importance, Relevance of Information in Decision Making, Sources and Types of Information, Cost Benefit Analysis – Quantitative and Qualitative Aspects, Assessing Information needs of the Organization.

6 Information Technology **[10L] [15M]**

Multimedia Approach to Information Processing. Decision of Appropriate Information Technology for proper MIS.Choice of appropriate IT Systems – Database, Data warehousing & Data mining Concepts, Centralized and Distributed Processing.

Reference Books

1) Javadekar, W.S."Management Information System", Tata Mac Graw Hill Publication,2003. ***ISBN*** 0-07-282256-2
2) Davis,B.Gordon, "Management Information System", Tata MacGraw Hill Publication,2002. ***ISBN*** 13:978-0-07
3) Gupta,A.K, "Management Information System",S Chand Puplications,2003 ISBN13: 9788121919937
4) Arora,Ashok&Bhatia,Akshaya, "Management Information System", Excel Books,NewDelhi, 2001 ***ISBN***: 978-81-7446-781-2
5) Basandra,Suresh K., "Management Information System", Wheeler Publishing,New Delhi,999.
6) O'Brien, James A., "Management Information System", Tata McGraw Hill, 2003 ***ISBN*** 81-203-1282-1

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 303 : JAVA Programming

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

Objectives: To impart the knowledge of object oriented programming using java among students.

Unit 1: Introduction To Java **[10L] [15M]**

Java as programming tool, Advantages of Java (Simple, Object Oriented, Distributed, Robust, Secure, Architecture Neutral, Portable, Interpreted, High performance, Multithreading, dynamic), Java& Internet.

Unit 2: Fundamental Programming **[10L] [15M]**

Comments, Data types (Integer, floating pt., character type, Boolean, enumerated), Casting, Variables, Arrays, Assignments, Initializations (Conversion between Numeric Types, constants), Operators, Input and Output, a simple java programs, Compiling and running Java programs using command line and Editors, command line arguments. Control flows: conditional statement, loops, Switch statement, and Block scope

Unit 3: Objects and Classes **[10L] [15M]**

Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method Overloading, Static members, Nesting of methods, final methods.

Unit 4: Function and Package **[10L] [15M]**

String functions (Concatenation, substring, string editing, testing for equality etc), Formatting functions, Creating and UsingPackage, User defined packages

Unit 5: Inheritance **[10L] [15M]**

Inheritance, Inheritance hierarchies, super class, sub class, Polymorphism, Abstract classes, Access modifiers, Introduction to Wrapper classes, Interfaces, Inner classes. Use of Final.

Unit 6: Multithreading, Exception&Applet in Java **[10L] [15M]**

What Are Threads, Thread States,
Introduction to Exceptions- Try, Catch, Throw, Throws and Finally.
What is an Applet, Applet lifecycle, Use of java.awt.graphics class and its various methods in an applet

Reference Books

1) Core Java Volume- I Fundamentals- By: Cay's Horstmann and Gray Cornell ISBN-***13***: ***978-0-13***-708160-8
2) Programming with Java- By: E Balagurusamy (Tata McGraw Hill) ISBN: ***9780070141698***
3) The complete reference JAVA-2 Fifth Edition By: Herbert Schildt (TMH) ***ISBN***: 0 07 881538

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 304 : LINUX Operating System.

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

Objectives:

1. **To make students understand the features of Linux operating system**
2. **To make students learn the components of Linux**
3. **To learn basic Linux commands and printing Linux documents.**

Unit 1 **[10L] [15M]**

History and Development of Linux -
A Brief History of Linux, Basic features of Linux OS, components of Linux System, Benefits of Linux, Acquiring and Using Linux, Examining Linux Distributions.

Unit 2 **[10L] [15M]**

System Access and User Accounts -Logging In and out Using the Linux System, Creating Additional User Accounts, Creating & Managing Groups, Managing Users Linux Commands.

Unit 3 **[10L] [15M]**

Introduction to The File System and Working with Linux Permissions , File System Navigation, Managing The File System Understanding Permissions, Changing File And Directory Permissions, Changing Default Permissions And Ownership

Unit 4 **[10L] [15M]**

File Operations -Archiving Files Archiving Files With Tar, Archiving Files With CPIO, Zipping Files, Creating and Viewing Files Using The Vi Editor, Studying Other Editors,

Unit 5 **[10L] [15M]**

Redirection, Introduction to Programming In C Using Linux (gcc), Introduction To X Windows And GNOME

Unit 6 **[10L] [15M]**

Working in X Windows (utilities), Managing Files and File Systems, Customizing X Windows, Choosing and Changing Window Managers and Desktops Remote X Window Access

Reference Books

1) 1 McAllister, Suse Linus-10, Pearson Education, 2006 ***ISBN***-81-7808-488-0 PHI. 2.
2) Ball, Using Linux, PHI, 1998. ***ISBN***-10: 0789716232
3) Das, UNIX: Concepts and Applications (4th Ed), TMH, 2006 ISBN 13: ***9780070635463***.
4) Foster Johnson, Welch, Anderson, Beginning Shell Scripting, Wiley India (Wrox), 2006 ***ISBN***-10: 0764583204
5) Neil Mathew, Richard Stones, Beginning Linux Programming (3rd Ed), Wiley India (Wrox), 2006 ***ISBN***: 978-0-470-14762-7
6) Peterson, Linux: Complete Reference (5th Ed), Peterson, TMH. ***ISBN*** 10: 0070222940

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 305: Practical on JAVA.

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

1. Write a Java program that demonstrates program structure of java. (Fibonacci Series, Factorial etc.)
2. Write a Java program to demonstrate use of class and object.
3. Write a Java program that demonstrates all string operations.
4. Write a Java program to demonstrate use of constructor and finalize method.
5. Write a Java program to demonstrate use of method overloading.
6. Write a Java program to demonstrate use of wrapper class
7. Write a Java program to demonstrate use of package.
8. Write a Java program that demonstrates inheritance.
9. Write a Java program to demonstrate interface.
10. Write a Java program that demonstrates inner class.
11. Write a Java program that demonstrates Exception (Divide by 0).
12. Write a Java program that demonstrates AWT control (Label, Textbox, Button etc.).

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 306: Practical on Linux.

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

1. Access: Logging In. Linux Commands. Getting Help. Obtaining Information about Your System.
2. Starting and Stopping Linux: Shutting Down a Linux System, Booting a Linux System.
3. Demonstration of Linux commands with attributes: - pwd, cd, ls, more, less, echo, clear, kill, ps, man, cal, date, who, who am I, WC, mkdir, rmdir, rm, sort.
4. File and File Permission: Creation of Files, and changing their permission (Cat,vi, Chmod)
5. Archiving Files: Archiving Files with tar
6. Write a shell script to display first 20 terms of Fibonacci series.
7. Write a shell script to display current time of system and display the message according to the time.
8. Write a shell script to check the user is login or not and say hello.
9. Write a shell script to calculate factorial of a number
10. Using filters & redirections: create new processed files (Using Head, tail, cut, paste etc. create resultsheet/salarysheet)
11. Develop a C Program In Linux to find out 20 terms of Fibonacci series.
12. Develop a C Program In Linux to calculate factorial of a number

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 307 : Practical on Tally ERP

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

Objective :To practically train students in Accounting using Tally ERP.

I] List A of Practical -

Assignment 1. Create a Company BCA Ltd. to maintain Financial Accounts only using hypothetical address and other details. The company maintains its books of accounts on financial year basis.
(a) Make the default setting for printer assuming that the reports are printed on the stationery with a letterhead printed on the top that consumes the space of one inch.
(b) The Company wants to print the amount in Indian Currency with space between Rs and amount.

Assignment 2. Create a Company Temporary Ltd. (Store data in C:/work/temp) having financial year as the accounting year. It is a newly set up company that has commenced its business from 1st October 2007. Other details may be enteredas per your assumption, except the Income Tax Number (PAN); upon saving the company, enter the Income tax number PAN as FYBCA0278S. Delete the Company created for Temporary Ltd.

Assignment 3. Create Groups following the hierarchy shown below -
Debtors - International
Debtors - National
Debtor- South
Debtor- North
Debtor- Central

Assignment 4. Create the following Ledger accounts, place under appropriate group (Create new groups whenever necessary)
(a) Wages paid to factory workers
(b) Wages paid to temporary workers
(c) Salary paid to H.O. employees
(d) Salary paid to Branch employees
(e) Share Capital (Rs. 5,00,000 Cr.)
(f) Telephone Charges

Assignment 5. a) Create at least 8 imaginary ledger account and place them under appropriate group – in the books of an Educational Institution.

b) Modify the above company to record account of a new asset which was not these earlier.

c) Creation of ledger consist of
1. Debtors in regional hierarchy, at least 4 groups
2. Sales at least 4 groups
3. Fixed assets groups at least 3 ledgers
4. Capital groups at least 3 – 5 parties ledgers
5. Purchases group at least 3 ledgers
6. Creditors at least 3 groups. Take imaginary opening balance.

Create the following Ledger

Name	**Group**	**Opening Bal. Rs.**
Khandesh Textile	Debtors- South	5,000 Dr.
Kanpur Textile	Debtor Central	0
Lucknow Textile	Debtor- North	0

Honda Corporation Debtors- International 0
Jackson Textile Debtors- International 0
Bank of Maharashtra Bank Account 60,000 Dr.
Sales- Domestic Sales Account 0
Sales- International Sales Account 0
Purchases Purchase Account 0
Building Fixed Assets 6,00,000
Furniture Fixed Assets 30,000

Assignment 6. Create a Short-life Company Ltd, and copy all the masters from the BCA Ltd. To the Short-life Company Ltd. Select the Short-life Company created, and check whether all the masters (Groups & Ledgers) have been copied. Delete the Short-life Company.

II] List B of Practical -

1. Preparing Purchase Register and Sales Register entering the transactions relating to Purchase (including discount), Sales (including discount), Purchase-Returns, Sales-Returns [Minimum 8 to 10 transactions be recorded]
2. Preparing Trial Balance with the minimum of 10 to 12 transactions.
3. Preparing Balance Sheet with transactions regarding Trading and Profit & Loss Account with adjustments. Alternatively, preparing Income & Expenditure Account for a non-trading concern along with the Balance Sheet.
4. Modifying Vouchers, deleting Voucher entries – using imaginary transactions. The above list is illustrative. A teacher, if required, may conduct similar additional practical on the above line in such a way as to cover the syllabus. Minimum of 3 practical each must be completed by a student from List A& List B to get the Journal certified.

Semester –IV

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 401: Introduction to Information System Audit.

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: To impart the knowledge and importance of Information System and Audit among Students for Quality Management.

1) Overview of Information System Auditing - I **[10L] [15M]**

a) Organizational Costs of data loss
b) Incorrect decision making
c) Cost of Computer Abuse
d) Value of Computer Hardware, Software and Personnel
e) High cost of Computer Error
f) Maintenance of Privacy
g) Controlled evolution of computer use
h) Definition Information System Audit
i) Objectives – Asset safeguarding, Data Integrity, System Effectiveness, System efficiency.

2) Overview of Information System Auditing - II **[10L] [15M]**

a) Separation of Duties
b) Delegation of authority and responsibility
c) Competent and trustworthy personnel
d) System of Authorization
e) Adequate documents and records
f) Physical Control over assets and records
g) Adequate management supervision
h) Independent checks on performance
i) Comparing recorded accountability with assets

3) Conducting an Information System Audit **[10L] [15M]**

a) Introduction
b) Nature of Controls
c) Audit Risks
d) Types of Audit Procedures
e) Steps inan Audit
f) Auditing Around or Through the Computer

4) Data Management Controls **[10L] [15M]**

a) Functions and motivations of DA and DBA roles
b) Organizational Issues
c) Data Repository Systems
d) Control over DA and DBA

5) Information System Audit Management and ISA Professionalism **[10L] [15M]**

a) Introduction
b) Managing the Information System Audit Function
c) Planning Function

d) Organizing Function
e) Staffing Function
f) Leading Function
g) Control Information
h) Information System Audit Professionalism
i) Future of Information System Auditing

6) BCP **[10L] [15M]**

a) Introduction to Business Continuity Planning
b) Need of BCP
c) Difference between BCP and DRP
b) Costs associated with BCP

Reference Books

1) Information System Control and Audit – Ron Weber – Pearson Education ***ISBN*** 10: 8131704726
2) Information System Audit and Assurance – D.P. Dube and V.P. Gulati – Tata McGraw Hill ***ISBN***-13: 9780070585690.
3) ISACAs IT Audit standards – ***ISBN***978-0-12-374354-1.

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 402: RDBMS.

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

Objective- To prepare students in using and managing Relational databases and its applications.

UNIT 1: **[10L] [15M]**

Database Systems

Introduction of File Processing System, Introduction of DBMS & RDBMS. Difference between File processing system & DBMS, Difference between DBMS & RDBMS. Applications of RDBMS

UNIT 2: **[10L] [15M]**

Data Models

Relational Model, Network Model, Hierarchical Model, Entity Relationship Model.

UNIT 3: **[10L] [15M]**

Integrity Constraints

Keys: Super, Candidate, Primary, Foreign Key, Entity Integrity, Referential Integrity, Integrity Constraints.

UNIT 4: **[10L] [15M]**

Relational Database Design

Introduction, Normalization, Normal Form:1 NF, 2 NF, 3 NF.

UNIT 5: **[10L] [15M]**

Introduction to Structured Query Language (SQL) using Oracle

Introduction to SQL &Oracle, Data types in oracle, Operators in oracle, Working with tables, Introduction to DML, TCL, DDL, DCL, Integrity constraints, Functions in Oracle, Numeric Function, Character Function, Date Function, Conversion Function, Group Functions.

UNIT 6: **[10L] [15M]**

Sub Queries & Joins

Sub Queries, view, Sequence, Set Operators, Joins, Inner joins, Equi, Non Equi,
Self-join & Outer Joins.

Reference Books

1) 1. Oracle PL/SQL by Example, Rosenweig, Pearson Education ***ISBN*** 10: 0133796787
2) Database System Concepts: - Abraham Silberschatz, Henry F. Korth& S. Sudarshan, McGraw-Hill ***ISBN*** 978-0-07-352332-3
3) Oracle- D2K by Ivan Bayros ***ISBN*** : 8176567426
4) Introduction to Database Management Systems, by – AtulKahate (Pearson Education) ISBN ***9788131700785***

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 403: C#.NET.

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

Objective:To impart the knowledge of object oriented programming using C# among student.

UNIT 1:The .Net framework **[10L] [15M]**

a) Introduction to .NET framework,
b) The Origin of .Net Technology
c) Common Language Runtime (CLR),
d) Microsoft Intermediate Language (MSIL)
e) Just-In –Time Compilation (JIT)

UNIT 2: C# as a Language **[10L] [15M]**

a) Introduction to C #
b) Advantages & Disadvantages of C#
c) Programming Structure of C#
d) Basic Constructs – Variables, Data types, Operators, arrays, functions
e) Control Statements (if statement, if....else statement, nesting of if....else statement, the else if ladder, switch statement), Looping Construct(while statement, do statement, for statement)

UNIT 3:Object Oriented Programming in C# **[10L] [15M]**

a) Class and Object,
b) Constructors and Destructors
c) Inheritance,
d) Interfaces
e) Access modifiers: Public, Private, Protected,
f) Polymorphism
g) Overloading and Overriding
h) Sealed Classes

UNIT 4:Exception handling **[10L] [15M]**

a) Types of errors
b) Syntax of exception handling code
c) Try and catch block
d) Multiple Catch Blocks

UNIT 5: Windows Applications in C#.NET **[10L] [15M]**

a) Introduction to GUI Programming
b) GUI Components/ Controls (Windows Forms, Text Boxes, Buttons, Labels, Check Boxes, Radio Buttons, List Boxes, Combo Boxes, Picture Boxes, Timer, Scrollbars, Menus, Built-in Dialogs, Image List, Tree Views, List Views)

UNIT 6:ADO.NET & Crystal Report **[10L] [15M]**

a) Introduction to ADO.NET
b) Components of ADO.NET
c) ADO.NET Data Providers
d) Working with Disconnected Data
e) Introduction to Crystal report , Creating Simple Report by wizard

Reference Books

1) Illustrated C# 2008, Solis, Publication APRESS, ISBN 978-81-8128-958-2 ***ISBN 978-81-8128-958-2***
2) Professional C# 4.0 and .NET 4by Christian Nagel, Bill Evjen, Jay Glynn, Karli Watson, Morgan Skinner, WROX ISBN: ***978-0-470-50225***-9.
3) Beginning C# Object-Oriented Programming by Dan Clark,Apress ***ISBN***-13 978-1-4302-3531-6
4) ADO.NET Examples and Best Practices for C# Programmers, By Peter D. Blackburn Apress ***ISBN***: 978-1-59059-012-6
5) Database Programming with C#, By Carsten Thomsen, Apress ISBN ***978-1-59059-010***-2

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 404: Data Structure.

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: To impart the knowledge of data structure among student.

UNIT 1:Introduction : **[10L] [15M]**

Meaning of Data, Data item, Elementary and Group Data items, Meaning of Data Structure, Linear and Non Linear Data Structure, Meaning of Algorithm, Algorithm development

UNIT 2:Arrays : **[10L] [15M]**

Meaning of Array, Dimension of array, Linear and Non-Linear array, Representation of linear array in memory, Traversing linear array, Inserting and Deleting, Sorting (Bubble Sort, Selection Sort, Insertion Sort, Quick Sort, Merge Sort), Searching (Linear Search, Binary Search), Multidimensional Array

UNIT 3: Stack: **[10L] [15M]**

Meaning of Stack, Stack Operation, Array representation of Stack, Polish notation, Arithmetic expression, Recursion,

UNIT 4: Queues: **[10L] [15M]**

Meaning of Queue, Queue Operation, CircularQueue,Dequeue, Priority queue,Queue Applications

UNIT 5: Linked Lists : **[10L] [15M]**

Meaning of Linked List, Representation of linked list in memory, Traversing, Searching, Insert and Delete in singly link list,Introduction to Circular Link List, introduction to Doubly Link List.

UNIT 6: Trees and Graphs: **[10L] [15M]**

Introduction to Tree, Binary tree, representing binary trees in memory, Traversing binary trees, Graph:- Types, representation in memory.

Reference Books

1) Schaum's Outline of Data Structures with C++ ISBN-10: 0071353453
2) Data Structure and Algorithms:Concept, Techniques and Application,G.A.V.Pai ISBN 10: ***0070667268***
3) Data Structure:Balucha ***ISBN***: 978-93-833-0383-0 4

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 405: Practical on C#.NET.

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: To practically train students in programming in C#.NET

1. Write a program to print “Teach One, Each One, Tree One” given number of times
2. Write a program to show use of different operators
3. Write a program to show use of Looping Constructs
4. Write a program to show use of Constructor
5. Write a program to demonstrate Inheritance
6. Write a program to show use of Exception Handling
7. Create a simple C# application using Label, TextBox, and Button control
8. Create a C# application using ListBox, ComboBox control
9. Demonstrate the use of Timer control in C#
10. Create a C# application using PictureBox, ScrollBar control
11. Demonstrate Simple Database Connectivity using wizard.

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 406: Practical on RDBMS.

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

1. Demonstration of creating database and table.
2. Demonstrate to INSERT, UPDATE, and DELETE Records in Table.
3. Demonstrate to Alter Table.
4. Defining different types of database constraint. Create table with various constraints as PRIMARY KEY, FOREIGN KEY, and CHECK & NOT NULL Constraints
5. Query based on operators and joins
   - Simple and nested query

6. Write down SQL by using
   i. WHERE Clause
   ii. GROUP BY
   ii. HAVING CLAUSE

7. Write down SQL by using
   i. Aggregate functions
   ii. Date functions
   iii. String functions

North Maharashtra University, Jalgaon

Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 407: Practical on Data Structures.

w.e.f. 2018-19
Total Lectures: 60
[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: To practically train students in Data structure using C++.

Implement following data structures and its applications using C++

1. Matrix
2. Stack
3. Queue
4. Single Linked List
5. Bubble Sort
6. Recursion
7. Linear Search
8. Binary Search
9. Tower of Hanoi
10. Adjancy matrix representation of graph

Third Year - Semester –V

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 501 - Entrepreneurship Development

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: To impart the knowledge of Entrepreneurship Development among students.

Unit 1 **[10L] [15M]**

Entrepreneur: meaning- Importance, Qualities, nature, types, traits, culture, similarities and economic and differences between Entrepreneur and Intrapreneur. Entrepreneurship development-its importance- Role of Entrepreneurship -Entrepreneurial environment.

Unit 2 **[10L] [15M]**

Entrepreneurship Development and Government: Role of Central Government and State Government in promoting Entrepreneurship - Introduction to various incentives, subsidies and grants - Export Oriented Units - Fiscal and Tax concessions available.

Unit 3 **[10L] [15M]**

Challenges to Woman Entrepreneurs, Achievements of Woman Entrepreneurs, Role Models of Woman Entrepreneurs, Women Entrepreneurs Problems and Prospects

Unit 4 **[10L] [15M]**

Creating and starting the venture - Steps for starting a small industry - selection of types of organization - International entrepreneurship opportunities.

Unit 5 **[10L] [15M]**

Small Business: Concept & Definition, Role of Small Business in the modern Indian Economy, Small entrepreneur in International business;

Unit 6 **[10L] [15M]**

Steps for starting a small industry, registration as SSI, Role of SIDBI; advantages and problems of SSIs; Institutional Support mechanism in India; Incentives & Facilities, Govt. Policies for SSIs

Reference Books

1. Vasanth Desai "Dynamics of Entrepreneurial Development and Management Himalaya Publishing House ***ISBN*** 81-7014-619-4
2. N.P.Srinivasan&G.P.Gupta," Entrepreneurial Development ", Sultanchand&Sons. ***ISBN***: 8185386196
3. Robert D.Hisrich, Michael P.Peters, "Entrepreneurship Development, Tata McGraw Hill edition ***ISBN*** : 1259001636

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 502 - Cyber Security

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: To impart the knowledge of Cybercrime and cyber security among students.

1. Introduction to Information Security **[10L] [15M]**

- History of Information Systems and its Importance, basics,
- Nature of Information Systems,
- Basic Principles of Information Security
- Information System Threats and attacks

2. Security Threats and Controls **[10L] [15M]**

- Security Threats to E Commerce,
- Business Transactions on Web,
- Concepts in Electronics payment systems, Internet Banking, E-Cash, Credit/Debit Cards.
- Physical Security- Needs
- Disaster and Controls,
- Access Control- Biometrics, Benefits of Biometrics Systems and Criteria for selection of Biometrics.

3. Cryptography **[10L] [15M]**

- Model of Cryptographic Systems,
- Issues in Documents Security,
- Digital Signature, Requirement of Digital Signature System,
- Finger Prints

4. Network Security **[10L] [15M]**

- Network Security- Basic Concepts, Dimensions
- Intrusion Detection System
  - Need of Intrusion Monitoring and Detection,
- Virtual Private Networks
  - Need,
  - Use of Tunneling with VPN,
  - Authentication Mechanisms,
  - Types of VPNs and their Usage

5. Cyber Crime **[10L] [15M]**

- Introduction to Cyber Crime
- Email Tracing and Tracking , Email Spoofing
- Mobile Number Hacking
- Data Recovery
- Cyber Fraud Detection
- Website Hacking
- Web Server/ISP
- Web & DOS Attacks

6. Cyber Law & IT Act **[10L] [15M]**

- Fundamentals of Cyber Law. Introduction to Indian Cyber Law: Information Technology Act
- 2000. Main features of the IT Act2000, Information Technology Amendment Act 2008 and its major strengths.

Reference Books

1) Godbole,"Information Systems Security", Willey ***ISBN*** 10: 8126516925
2) Merkov, Breithaupt," Information Security", Pearson Education ISBN-***10***: ***0-7897-5325-1***
3) Yadav, "Foundations of Information Technology", New Age, Delhi ***ISBN*** 10: 8122417620
4) Schou, Shoemaker, "Information Assurance for the Enterprise", Tata McGraw Hill ***ISBN***:0072255242
5) Sood,"Cyber Laws Simplified", McGraw Hill ***ISBN*** 10: 0070435065
6) Furnell, "Computer Insecurity", Springer 7. IT Act 2000 ***ISBN***: 81 7656494X

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 503 - ASP.NET Technology

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective : To impart the knowledge of web development in students in by using ASP.NET

Unit – 1 Introduction to ASP.NET **[10L] [15M]**

- History of Asp.Net
- Introduction to Asp.Net
- Features of Asp.Net
- Structure of Asp.Net Page
- ASP.NET Web Pages Model(Single Page Model, Two Page Model)

Unit – 2 ASP.NET Controls **[10L] [15M]**

- Working with Basic Web Form Controls.
- HTML Server Controls
- Miscellaneous Basic Controls
- ASP.Net Rich Controls,
- Validation Controls(Required Field Validator, Range Validator, Compare Validator)

Unit – 3 ASP.Net Intrinsic Objects and State Management **[10L] [15M]**

- HTTPRequest Object,
- HTTPResponce Object
- HTTPServerUtility
- HTTPApplicationState Object
- HTTP Session state Object
- State Management - View State, Session, Application, Cookies
- Global Application Class (global.asax)
- Web Configuration File (Web.config)

Unit – 4 Web Site Designing **[10L] [15M]**

- Webpage designing Principals
- Site map
- Master pages and content Pages
- Navigation controls: Tree view, Menu navigation

Unit – 5 Data Access With ADO.Net Object **[10L] [15M]**

- Overview of ADO.NET

- Create and retrieve Database Connections
- SqlDataSource Controls
- ASP.NET Data-Bound Controls
- GridView, Repeater, DataList, Details View, Form View

Unit – 6 Security and Configuration **[10L] [15M]**

- Using the CreateUserWizard control
- Using the LoginStatus control
- Using the Login control
- Using the LoginView control

Reference Books

1. ASP.NET - The Complete Reference, Matthew MacDonald .. ***ISBN***, 0072195134
2. ASP.NET 4.5 IN SIMPLE STEPS (SIMPLE STEPS series), KOGENT LEARNING SOLUTIONS INC., 2013 ***ISBN*** -10: 9350049996
3. Programming ASP.NET, J.Liberty, D.Hurwitz, (3rdEd), O'REILLY, 2006
4. ASP.NET and VB.NET Web Programming, by Crouch Matt J, Addison Wesley 2002. ***ISBN*** 13: 9780201734409
5. www.asp.net
6. http://www.w3schools.com/

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 504 - Software Engineering

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective:The course has been designed to provide a foundation of systems principles and an understanding of System development.

1. System Concept and Information [10L] [15M]

- Definition and Characteristics of System
- Elements of Systems
- Types of system – Conceptual & Physical, Natural & artificial, Open & Closed, Deterministic & Probabilistic.
- Feedback and feed forward control system

2. System Development Life Cycle [10L] [15M]

- Systems analyst, Roles of System Analysts – As an Architect, Change Agent, Investigator & monitor, Organizer, Motivator & Psychologist.
- Introduction of Systems Development Life Cycle (SDLC)
- Phases of system development:Recognition of need, Problem definition, Analysis, Design, Implementation, Maintenance
- Factors affecting the system development.
- SDLC Models : Waterfall Model, Spiral and RAD, Prototyping

3. System Planning [10L] [15M]

- **Data and fact gathering techniques:** Interviews & Questionnaires, Group discussion, On-site observation, Review of Written Documents.
- Feasibility study and its importance
  - Types of feasibility study- Technical, Economical and Operational
- System Selection plan and proposal Prototyping

4. Systems Design and modeling [10L] [15M]

- Logical and physical design
- Systems flowcharts & Data flow diagrams
- CASE tools - Common diagramming conventions and guidelines using DFD and ERD diagrams
- Tools for Structured Analysis : Data Dictionary, Decision Tree, Decision Tables, Structured English

5. User Interface of System [10L] [15M]

- User-interface design
  - Guidelines to design Input and Output user-interfaces.
- Graphical interfaces

6. Designing business application system using DFD, ERD, Input and Output layouts [10L] [15M]

- Library Management System

- Inventory Management System
- Hospital Management System
- Sales/Purchase System

Reference Books

1. System Analysis and Design Methods, Whitten, Bentaly and Barlow, Galgotia Publication. ***ISBN***-10; 0-07-305233-7
2. System Analysis and Design Elias M. Awad, Galgotia Publication ***ISBN*** 13: 9788175156180.
3. Software Engineering by Roger Pressman ***ISBN***-13: 978-0071267823
4. Software Engineering by YogeshAgarwal ; ***ISBN***-10: 8122416381

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 505 - Practical on ASP.NET

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: To practically train students in developing web pages using ASP.NET

Practical on ASP.NET

1. Write an ASP .net program that demonstrate use of HTML Controls
2. Write an ASP .net program that demonstrates use of web controls.
3. Write an ASP .net that returns the windows name of your computer and URL of the page that you are visiting.
4. Write an ASP .net program that demonstrates use of Validations Controls.
5. Write an ASP .net program that demonstrates use of Intrinsic Objects.
6. Write an ASP .net program that demonstrate Application and Session Scope Variables using Global.Asax
7. Write an ASP .net program Demonstrate use of Master Pages.
8. Write an ASP .net page that used the connection object to connect the database and display information using datagrid Controls.
9. Demonstrate website navigation controls(sitemap path, treeview, menu) using SiteMap file.
10. Demonstration of ASP.NET objects (HTTPApplicationState, HTTPSessionState)

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 506 - Practical on CASE Tool with MS-VISIO and Software Testing

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: To practically train students in using CASE tools for designing real time system diagrams.

Study following systems using CASE tool -

1) Library Management System
2) Inventory Management System
3) Hospital Management System
4) Sales System
5) Purchase System
6) Admission System
7) Examination System
8) Logistic Management System
9) Hotel Management System
10) Payroll Management System

Software Testing:

Manual Testing: Data constraints, data integrity, validity, correctness, referential integrity need to be tested for already developed software. Its data entry forms and reports, menu system needs to be tested for various testing parameters. A Test report needs to be prepared by student.

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 507 - Field work on IT Project Assessment

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: – To understand the issues in implemented IT project by assessing it using research methodology.

FIELD WORK

1. Each student shall have to undergo a field work during 5th Semester

2. In the 5th semester examination student are required to carry out a Field Work individually or by group of two students. It should be compulsorily based on **assessment of any IT project implemented in real time** as mentioned in the point 3. The topic should be decided with consultation and guidance of internal teacher of the Institute. The field work should be necessarily Research oriented, Innovative and Problem solving.

3. The field work should be related to **assessment of any IT project already implemented in real time** such as – e-Commerce websites, e-Governance websites, universities IT services, governments IT services, e-banking systems, railway reservation systems, bus reservation systems, online travel booking systems etc.

4. The student has to write a report based on the actual Field work, get it certified by the concerned Guide/teacher that the fieldwork has been satisfactorily completed and submit TWO typed copies of the same to the Head / Director of the institute /Principal of the college. One copy of the report submitted by the student shall be forwarded to the University by the Institute.

5. Field work shall be strictly based on primary data. The Sample Size shall be minimum 100. The students are encouraged to use advance excel or SPSS software.

6. Field work viva shall be conducted at the end of Semester V

7. Viva Voce for one student shall be of minimum 15 minutes. The Student has to prepare Power Point presentation based on field work to be presented at the time of Viva voce.

8. The field work will carry maximum 100 marks, of which internal teacher shall award marks out of maximum 50 marks on the basis of work done by the student. Remaining marks shall be awarded out of maximum 50 marks by examining the student during Vivavoce, by the External examiner.

Semester - VI

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 601 - e-Commerce & m - Commerce

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective:To impart the knowledge of e-Commerce & m - Commerce among students.

UNIT 1: Introduction to E-Commerce [10L] [15M]

Definition and scope of E-Commerce and M-Commerce, E-Commerce trade cycle, Electronic Markets, Internet Commerce, Benefits and Impacts of E-Commerce.

UNIT 2: Elements of E-Commerce & M-Commerce [10L] [15M]

Various elements, e-visibility, e-shops, Delivery of goods and services, Online payments, After - sales services, Internet E-Commerce security, Basics of M-Commerce, E-Commerce Vs. M-Commerce. Advantages of M-Commerce over e-Commerce.

UNIT 3: EDI and Electronic Payment Systems [10L] [15M]

Introduction and definition of EDI, EDI layered Architecture, EDI technology and standards, EDI communications and transactions, Benefits and applications of EDI with example, Electronic Payment Systems: credit/debit/smart cards, e-credit accounts, e-money.

UNIT 4: Introduction to EC models [10L] [15M]

Inter-organization and intra-organization E-Commerce, E-Commerce Models: B2B, B2C, C2B, C2C, G2C, C2G. Concept and importance of E-Services and M-Services.

UNIT 5: E-Business [10L] [15M]

Introduction to Internet bookshops, Electronic newspapers, Virtual auctions, Online share dealing, e-Governance. Cases of amazon, flipkart and snapdeal.

UNIT 6: E-Security and Legal Issues [10L] [15M]

Security concerns in E-Commerce, Privacy, integrity, authenticity, non-repudiation, confidentiality, SSL, Digital Signatures and fire walls, IT Act 2000,Cyber crimes and cyber laws.

Reference Books

1. Gary Schneider, Electronic Commerce, Thomson Publishing. ***ISBN***-10: 1-4239-0305-6
2. Pandey, Srivastava and Shukla, E-Commerce and its Application, S. Chand ***ISBN***: 9788121928410
3. P.T. Joseph, Electronic Commerce – An Indian Perspective, P.H.I ***ISBN*** 13: 9788120345058
4. Bharat Bhaskar, Electronic Commerce, TMH ***ISBN*** 13: 9781259026843 .
5. Turban, King, Viehland& Lee, Electronic Commerce- A Managerial Perspective,Pearson.
6. Ravi kalakota& A.B. Whinston, Electronic Commerce- a Manager's Guide, Pearson. ***ISBN***:9788177583168
7. Laudon&Traver, e-commerce – Business, Technology, Society. Pearson ISBN13: 9780133938951

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 602 - Cloud Computing

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective:This course will help the students to get familiar with cloud computing fundamentals, architecture, services, implementation and deployment techniques etc.

Unit 1: Introduction to Cloud Computing: [10L] [15M]

Overview, Roots of Cloud Computing, Layers and Types of Cloud, Desired Features of a Cloud, Benefits and Disadvantages of Cloud Computing, Cloud Infrastructure Management, Infrastructure as a Service Providers, Platform as a Service Providers, Challenges and Risks, Assessing the role of Open Standards

Unit 2: Cloud Architecture, Services and Applications: [10L] [15M]

Exploring the Cloud Computing Stack, Connecting to the Cloud, Infrastructure as a Service, Platform as a Service, Saas vs. Paas, Using PaaS Application Frameworks, Software as a Service, Identity as a Service, and Compliance as a Service.

Unit 3: Abstraction and Virtualization [10L] [15M]

Introduction to Virtualization Technologies, Load Balancing and Virtualization, Understanding Hyper visors, Understanding Machine Imaging, Porting Applications, Virtual Machines Provisioning and Manageability Virtual Machine Migration Services, Virtual Machine Provisioning and Migration in Action, Provisioning in the Cloud Context

Unit 4: Managing & Securing the Cloud [10L] [15M]

Administrating the Clouds, Cloud Management Products, Emerging Cloud Management Standards, Securing the Cloud, Securing Data, Establishing Identity and Presence, Storage Area Networks, Disaster Recovery in Clouds

Unit 5: Risk of Cloud computing and Related Cost [10L] [15M]

Risk Assessment and Management – Rosk of Vendor Lock- in – Risk of Loss of control over IT services- Risk of Poor Provisioning – Risk of Multi-tenant environment – Risk failure of cloud provider – SLA risk – security, malware and Internet Attacks – Risk with Application Licensing.

Unit 6:Advanced Topics and Cloud Applications [10L] [15M]

Integration of Private and Public Clouds, Cloud Best Practices, the Web on Amazon Cloud, Hosting Massively Multiplayer Games on Cloud, Content Delivery Networks Using Clouds and Hosting Twitter and Facebook on Cloud

Reference Books

1) Sosinsky B., “Cloud Computing Bible”, Wiley India ***ISBN*** 13: 9788126529803.

2) Buyya R., Broberg J., Goscinski A., “Cloud Computing: Principles and Paradigm”, John Wiley & Sons ***ISBN NO***: 81–7758– 575-4

3) Velte T., Velte A., Elsenpeter R., “Cloud Computing – A practical Approach”, Tata McGraw-Hill. / ***ISBN*** 13: 9780070683518

.

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 603 - Android Application Development

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective:The use of mobile communication and android based applications are increasing day by day. It is therefore necessary for students to know that how mobile communication works and how to build mobile apps for android operating system. This course covers the necessary concepts which are required to understand mobile communication and to develop Android Applications.

Unit 1:Introduction to Mobile Computing and Android [10L] [15M]

1.1 Mobile Computing: Introduction to Mobile Computing, applications, limitations, and architecture, Characteristics of Mobile Communication.

1.2 Cellular Overview: Cellular networks, Cellular concept, location management, Handoffs noise and its effects on mobile.

1.3 Understanding GSM and CDMA.

1.4 Overview of Android

1.5 Android for mobile apps development

1.6 Environment setup for Android apps Development

1.7 Framework - Android- SDK, Eclipse.

1.8 Architecture of Android, Libraries.

1.9 Software development kit.

Unit 2: Designing the user interface [10L] [15M]

2.1 Design criteria for Android Application: Hardware Design Consideration, Design Demands For Android application, Intent, Activity, Activity Lifecycle and Manifest

2.2 Introducing views and view groups,

2.2 Introducing layouts, creating new views,

2.4 Creating and using Menus

Unit 3: Database Issues [10L] [15M]

3.1 Hoarding techniques

3.2 Caching invalidation mechanisms

3.3 Client server computing with adaptation,

3.4 Power-aware and context-aware computing,

3.5 Transactional models, query processing, recovery, and quality of service issues.

Unit 4: Talking with Servers (Web services) [10L] [15M]

4.1 Introduction to web services

4.2 Restfull Web Service

4.3 Soap Web Service

4.4 JSON parsing

4.5 XML parsing

Unit 5: Data Storage, retrieval and Sharing **[10L] [15M]**

5.1 File system in android
5.2 Internal and external storage
5.3 Saving and loading files
5.4 File Management tools

Unit 6: Wireless LANs and Application overview **[10L] [15M]**

6.1 WLAN
6.2 Wireless applications
6.3 Mac issues (Hidden and exposed terminals, near and far terminals),
6.4 Mobile IP
6.5 Mobile ad-hoc networks (MANET)
6.6 Disconnected operations
6.7 Mobile agents.

Reference Books

1) Mobile Communications J. Schiller, Addition Wesley Publication ***ISBN*** 0 321 12381 6
2) GSM System Engineering A.Mehrotra, Addition Wesley Publication ***SBN*** 0-201-42293-X.
3) Understanding WAP M. Heijden, M. Taylor, Artech House Publication ***SBN*** 0470849061
4) Professional Android™ Application Development Wrox Publications, Reto Meier ***ISBN***: 978-0-470-34471-2

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 604 - Server Side Scripting using PHP

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: To impart the knowledge of web development in students in by using PHP

Unit – 1 Introduction to PHP [10L][15M]

- **1.1** Web architecture, web Server (xamp Server, apache server)
- **1.2** Installation and Configuration of PHP (php.ini, httpd.conf)
- **1.3** History, Features & Drawbacks of PHP

Unit - 2 The Basics of PHP [10L][15M]

- **2.1** Introduction to PHP
- **2.2** Data types in PHP
- **2.3** Lexical Structure of PHP
  - **2.3.1** Structure & Syntax of PHP
  - **2.3.2** PHP with HTML
  - **2.3.3** Comments
  - **2.3.4** Variables
  - **2.3.5** Literals
  - **2.3.6** Operator
  - **2.3.7** Operator Precedence
- **2.4** Flow Control Statements
  - **2.4.1** Conditional Statements
  - **2.4.2** Looping Statements
  - **2.4.3** Exit, Return, Die, Include and Require Statements

Unit – 3 Array, Function and String [10L][15M]

- **3.1** Introduction to Array
  - **3.1.1** Index Vs Associative Array
  - **3.1.2** Multidimensional Array
  - **3.1.3** Different array function in PHP
- **3.2** Introduction to Function
  - **3.2.1** Defining and Calling a function
  - **3.2.2** Scope of variables in function
  - **3.2.3** Function Parameters
  - **3.2.4** Returning Values from a function
  - **3.2.5** Recursive Functions
- **3.3** Types of strings in PHP
- **3.4** Printing functions
- **3.5** Comparing strings
- **3.6** Manipulating and Searching strings
- **3.7** Regular Expressions

Unit – 4 Object-Oriented PHP [10L][15M]

- **4.1** Introduction and Benefits of OOPs
- **4.2** Creating a Class
- **4.3** Creating an Object

- **4.3.1** Adding a Method
- **4.3.2** Adding a Properties
- **4.3.3** Visibility (Public, Private and Protected)

4.4 Constructor and Destructors
4.5 Inheritance (Extending a class)
4.6 Abstract classes, Final classes
4.7 Interfaces
4.8 Exception handling

Unit - 5 Web Techniques **[10L][15M]**

5.1 Introduction
5.2 HTTP Basics
5.3 Processing Forms

- **5.3.1** Using PHP $_GET
- **5.3.2** Using PHP $_POST
- **5.3.3** GET vs. POST
- **5.3.4** File Uploads
- **5.3.5** Form Validation

5.4 Maintaining State

- **5.4.1** Cookies
- **5.4.2** Sessions

Unit - 6 PHP with MySQL **[10L][15M]**

Introduction to MySQL
Interaction between PHP and MySQL
Connecting to a Database
Execute SQL Statements

Reference Books

1. Beginning PHP and MySQL, 3rd Ed., W. Jason Gilmore, A press Publication.
2. PHP 5.1 for Beginners, Ivan Bayross and Sharnam Shah, SPD Publication
3. Beginning PHP5 Dave Mercer et al. Wrox Press
4. PHP for Beginners [Book] / auth. Ivan Bayross, Sharnam Shah, THE X Team. - [s.l.]: SPD.

Websites:

1. http://www.php.net.in
2. http://www.w3c.org

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 605 - Practical on Android & PHP

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: To practically train students in developing Mobile application and web pages using PHP

Practical on Android

1. Installation and setup of java development kit (JDK), setup android SDK, setup eclipse IDE, setup android development tools (ADT) plugins, create android virtual device.
2. Create “Hello World” application. That will display “Hello World” in the middle of the screen using TextView Widget in the red color.
3. Create Registration page to demonstration of Basic widgets available in android.
4. Create sample application with login module.(Check username and password) On successful login, Change TextView “Login Successful”. And on failing login, alert user using Toast “Login fail”.
5. Create an application for demonstration of Scroll view in android.
6. Create login application where you will have to validate username and passwords Till the username and password is not validated, login button should remain disabled.

Practical on PHP

1. Write PHP scripts that demonstrate fundamentals PHP.
2. Write PHP script that will display grade based on criteria given below using the marks obtained in Examination.
    a. Distinction (70 and above)
    b. First Class (60 - 69)
    c. Pass (40 - 59)
    d. Fail (below 40)
3. Write a PHP script to demonstrate different String functions.
4. Write a PHP script to Demonstrate OOPS Concept in PHP.
5. Write a PHP script to demonstrate Form Data Handling using Get and Post methods.
6. Design a database in MYSQL. Create table in database. Store, Update, Delete and Retrieve data from the table. Display the data from the table.
7. Write a PHP script to store, retrieve and delete cookies on your local machine.
8. Write a PHP script to store, retrieve and delete data using session variables.

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 606 - Practical on Employability Skills

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: To practically train students in developing required employability skills.

1. Resume Designing with individual career objective
2. Group Discussion on current topics
3. Short Power point Presentations on one's behavioral qualities (10 min)
4. System model Presentation
5. Business Email Writing /Covering letter
6. Designing a weekly calendar (To-do list with deadlines)
7. Personal Interview-Domain based
8. Personal Interview-Behavioral
9. Facing a telephonic interview –Executing telephonic Etiquettes

'A' Grade NAAC Re-Accredited (3rd Cycle)

North Maharashtra University, Jalgaon

Faculty of Science and Technology

BACHELOR OF COMPUTER APPLICATIONS (BCA)

BCA 607 - Project Report & Viva

w.e.f. 2019-20

Total Lectures: 60

[Total Marks: 60 External + 40 Internal =100 Marks]

Objective: – To prepare students to use applications of the theory and practical learned during the course.

PROJECT WORK

1. Each student shall have to carry out the project work based on System Development which may include Application Program, Database Management System, Web Based Application, Smart phone Application, System Tools, Network System Application, etc. A project may be carried out at any outside organization or on a sub system of an organization.
2. The project work should be carried out individually. No group work is allowed in the Project work. The project title should not be repeated.
3. The topic of the project should be decided with the consultation & guidance of an internal guide-teacher of the institute/college. The project should be necessarily innovative and problem solving. No teacher shall be entrusted with more than 15 students for guidance and supervision.
4. The student should clearly mention the need of project , database(s), files required for the project, DFD , Normalization, ERD, software used for the project, reasons for selection of that software, inputs required, outputs produced etc.
5. The application should be menu driven and should provide the facilities of storage of data, modifications in existing data, deletion of unwanted data, and viewing of data.
6. The student has to write a report based on the actual work undertaken during the vacations at the specific selected enterprise/ organization or sub system and get it certified by the concerned teacher that the Project report has been satisfactorily completed and submit TWO typed copies of the same to the Head / Director of the institute /Principal of the college.
7. One copy of the report submitted by the student shall be forwarded to the University by the Institute.
8. No student will be permitted to appear for Viva-Voce examinations, unless and until the project report is submitted within the stipulated time.

Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

'A' Grade
NAAC Re-accredited
(3rd Cycle)

Bachelor of Computer Application

BCA

(At affiliated Institutes w.e.f A.Y. 2022-23)

w.e.f. Academic Year 2022-23

Summary of distribution of Credits under CBCS scheme for

BCA

Sr No	Type of Course	Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI
1	Core	16	16	12	12		04
2	Discipline Specific Course	08	08	16	16	16	16
3	Skill Enhancement Course	04	04	-		12	04
4	Project	-	-	-	-		04
		28	28	28	28	28	28

Course Credit Scheme

Semester	Core Courses			Discipline Specific Courses			Skill Enhancement			Projects			Total Credits
	No of Courses	Credits	Total Credits	No of Courses	Credits	Total Credits	No of Courses	Credits	Total Credits	No of Courses	Credits	Total Credits	
I	2	8+8	16	1	4+4	8	1	4	4	-	-	-	28
II	2	8+8	16	1	4+4	8	1	4	4	-	-	-	28
III	2	8+4	12	2	8+8	16	-	-	-	-	-	-	28
IV	2	8+4	12	2	8+8	16	-	-		-	-	-	28
V	-	-	-	2	8+8	16	2	8+4	12	-	-	-	28
VI	1	4	4	2	8+8	16	1	4	4	1	4	4	28
			60			80			24			4	168

Structure of Curriculum

		First Year				Second Year				Third Year				Total Credit Value
		Sem I		Sem II		Sem III		SemIV		Sem V		Sem VI		
		Cr	Co	Cr	Co	Cr	Co	Cr	Co	Cr	Co	Cr	Co	
		Core Courses												
A	Theory	8	2	8	2	8	2	8	2	-	-	4	1	36
	Practical	8	2	8	2	4	1	4	1	-	-	-	-	24
		Discipline Specific Courses												
B	Theory	4	1	4	1	8	2	8	2	8	2	8	2	40
	Practical	4	1	4	1	8	2	8	2	8	2	8	2	40
		Skill Enhanced Courses												
C	Theory	4	1	4	1	-	-	-	-	8	2	4	1	20
	Practical	-	-	-	-	-	-	-	-	4	1	-	-	4
		Project												
D	Project	-	-	-	-	-	-	-	-	-	-	4	1	4
Total Credit Value		28	7	28	7	28	7	28	7	28	7	28	7	168

Semester wise course structure of BCA

Sem I

Total Credits=28 [Theory =16, Practical =12]

Course Code	Course Type	Subject Name	Contact Hour/Week			Distribution of Marks for Examinations					Credits
			T	P	Total	Internal		External		Total	
						T	P	T	P		
BCA 101	SEC	Fundamentals of Accounting	04	-	04	40		60		100	4
BCA 102	Core	Fundamental of Computer	04	-	04	40		60		100	4
BCA 103	Core	Programming in C – I	04	-	04	40		60		100	4
BCA 104	DSC	Web Design – I	04	-	04	40		60		100	4
BCA 105	Core	Lab on Computer Fundamental	-	04	04		40		60	100	4
BCA 106	Core	Lab on C Programming – I	-	04	04		40		60	100	4
BCA 107	DSC	Lab on Web Design – I	-	04	04		40		60	100	4

Sem II

Total Credits=28 [Theory =16, Practical =12]

Course Code	Course Type	Subject Name	Contact Hour/Week			Distribution of Marks for Examinations					Credits
			T	P	Total	Internal		External		Total	
						T	P	T	P		
BCA 201	SEC	Professional Communication Skill	04	-	04	40	-	60	-	100	4
BCA 202	Core	Database Management System	04	-	04	40	-	60	-	100	4
BCA 203	Core	Programming in C – II	04	-	04	40	-	60	-	100	4
BCA 204	DSC	Web Design - II	04	-	04	40	-	60	-	100	4
BCA 205	Core	Lab on DBMS	-	04	04	-	40	-	60	100	4
BCA 206	Core	Lab on C Programming - II	-	04	04	-	40	-	60	100	4
BCA 207	DSC	Lab on Web Design – II	-	04	04	-	40	-	60	100	4

Sem III

Total Credits=28 [Theory =16, Practical =12]

Course Code	Course Type	Subject Name	Contact Hour/Week			Distribution of Marks for Examinations					Credits
			T	P	Total	Internal		External		Total	
						T	P	T	P		
BCA 301	Core	Fundamental Mathematics and Statistics	04	-	04	40	-	60	-	100	4
BCA 302	Core	Operating System	04	-	04	40	-	60	-	100	4
BCA 303	DSC	Programming in C++	04	-	04	40	-	60	-	100	4
BCA 304	DSC	Elective I A)Web Development Technology – I B)Data Analytics – I C)Python Programming	04	-	04	40	-	60	-	100	4
BCA 305	Core	Lab on Operating System	-	04	04	-	40	-	60	100	4
BCA 306	DSC	Lab on C ++ Programming	-	04	04	-	40	-	60	100	4
BCA 307	DSC	Lab on Elective	-	04	04	-	40	-	60	100	4

Sem IV

Total Credits=28 [Theory =16, Practical =12]

Course Code	Course Type	Subject Name	Contact Hour/Week			Distribution of Marks for Examinations					Credits
			T	P	Total	Internal		External		Total	
						T	P	T	P		
BCA 401	Core	Software Engineering	04	-	04	40	-	60	-	100	4
BCA 402	Core	Data Structures	04	-	04	40	-	60	-	100	4
BCA 403	DSC	Java Programming	04	-	04	40	-	60	-	100	4
BCA 404	DSC	Elective II A)Web Development Technology - II B)Data Analytics - II C)Artificial Intelligent	04	-	04	40	-	60	-	100	4
BCA 305	Core	Lab on Data Structure	-	04	04	-	40	-	60	100	4
BCA 306	DSC	Lab on Java Programming	-	04	04	-	40	-	60	100	4
BCA 307	DSC	Lab on Elective	-	04	04	-	40	-	60	100	4

Sem V

Total Credits=28 [Theory =16, Practical =12]

Course Code	Course Type	Subject Name	Contact Hour/Week			Distribution of Marks for Examinations					Credits
			T	P	Total	Internal		External		Total	
						T	P	T	P		
BCA 501	SEC	Employability Skill	04	-	04	40	-	60	-	100	4
BCA 502	SEC	E-Commerce and M-Commerce	04	-	04	40	-	60	-	100	4
BCA 503	DSC	Cloud Computing Application	04	-	04	40	-	60	-	100	4
BCA 504	DSC	Elective III A) Web Development Technology – III B) Data Analytics – III C) Machine Learning	04	-	04	40	-	60	-	100	4
BCA 505	SEC	Lab on E-Commerce		04	04	-	40	-	60	100	4
BCA 506	DSC	Lab on Cloud Computing		04	04	-	40	-	60	100	4
BCA 507	DSC	Lab based on Elective I		04	04	-	40	-	60	100	4

Sem VI

Total Credits=28 [Theory =16, Practical =12]

Course Code	Course Type	Subject Name	Contact Hour/Week			Distribution of Marks for Examinations					Credits
			T	P	Total	Internal		External		Total	
						T	P	T	P		
BCA 601	SEC	Entrepreneurship Development	04	-	04	40	-	60	-	100	4
BCA 602	Core	Cyber Security	04	-	04	40	-	60	-	100	4
BCA 603	DSC	Android Application Development	04	-	04	40	-	60	-	100	4
BCA 604	DSC	Elective IV A) Web Development Technology – IV B) Data Analytics - IV C) Data Mining	04	-	04	40	-	60	-	100	4
BCA 605	Project	Project Development		04	04	-	40	-	60	100	4
BCA 606	DSC	Lab on Android Application Development		04	04	-	40	-	60	100	4
BCA 607	DSC	Lab based on Elective		04	04	-	40	-	60	100	4

Program at a glance

Name of the Program	:	Bachelor of Computer Application
Apex body Approval	:	DTE, KBC NMU
Faculty	:	Science and Technology
Duration of the program	:	3 years (Comprising 6 Semesters)
Medium of the instruction and examination	:	English
Examination Pattern	:	60 % External Assessment + 40 % Internal Assessment
Passing Standards	:	Separate passing for Internal as well as External Assessment (min 40%)
Evaluation mode	:	CGPA
Total Credits of the program	:	168

Program Specific Objectives (PSO)

Objectives:

- BCA Program strives to create outstanding computer professionals with strong ethical and human values.
- This programme aims to prepare young minds for the challenging opportunities in the IT industry.
- The BCA Program aims at inculcating essential skills like Communication, Entrepreneurship Development & employability Skills as demanded by the global software industry through interactive learning process.
- The objective of the course is to develop skilled manpower in the various areas of software industry and Information Technology.

Program Outcome

PO1: At the end of the program students understand, analyze and develop computer programs in the areas like Web Design, Database manipulation, Windows & Mobile Application.

PO2: At the end of the program students understand, object-oriented programming features through various programming languages.

PO3: At the end of the program students are able to create dynamic, Interactive webpage's using various web technologies.

PO4: At the end of the program students understand the use of structured query language and its syntax, transactions, database recovery and techniques for query optimization.

PO5: At the end of the program students are able to work in the IT sector as system engineer, software tester, junior programmer, web developer, system administrator, software developer etc.

PO6: If chosen particular elective at the end of the program students are able to analyze very large data sets in the context of real world problems using various data analytical tools.

PO7: If chosen particular elective it will help students to develop in depth understanding of the key technologies in AI, data mining & machine learning.

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Bachelor of Computer Application (BCA)
(W.E.F. June 2022)

Course Code	Sem. – I	Course Code	Sem. – II
BCA 101	Fundamentals of Accounting	BCA 201	Professional Communication Skill
BCA 102	Fundamental of Computer	BCA 202	Database Management System
BCA 103	Programming in C – I	BCA 203	Programming in C – II
BCA 104	Web Design – I	BCA 204	Web Design - II
BCA 105	Lab on Computer Fundamental	BCA 205	Lab on DBMS
BCA 106	Lab on C Programming – I	BCA 206	Lab on C Programming - II
BCA 107	Lab on Web Design – I	BCA 207	Lab on Web Design – II
Course Code	**Sem. – III**	**Course Code**	**Sem. – IV**
BCA 301	Fundamental Mathematics and Statistics	BCA 401	Software Engineering
BCA 302	Operating System	BCA 402	Data Structures
BCA 303	Programming in C++	BCA 403	Java Programming
BCA 304	A) Web Development Technology – I	BCA 404	A) Web Development Technology - II
	B) Data Analytics – I		B) Data Analytics - I
	C) Python Programming		C) Artificial Intelligent
BCA 305	Lab on Operating System	BCA 405	Lab on Data Structure
BCA 306	Lab on C ++ Programming	BCA 406	Lab on Java Programming
BCA 307	A) Lab on Web Development Technology – I	BCA 407	A) Lab on Web Development Technology - II
	B) Lab on Data Analytics – I		B) Lab on Data Analytics - I
	C) Lab on Python Programming		C) Lab on Artificial Intelligent
Course Code	**Sem. – V**	**Course Code**	**Sem. – VI**
BCA 501	Employability Skill	BCA 601	Entrepreneurship Development
BCA 502	E-Commerce and M-Commerce	BCA 602	Cyber Security
BCA 503	Cloud Computing Application	BCA 603	Android Application Development
BCA 504	A) Web Development Technology – III	BCA 604	A) Web Development Technology – IV
	B) Data Analytics – III		B) Data Analytics - IV
	C) Machine Learning		C) Data Mining
BCA 505	Lab on E-Commerce	BCA 605	Project
BCA 506	Lab on Cloud Computing	BCA 606	Lab on Android Application Development
BCA 507	A) Lab on Web Development Technology – III	BCA 607	A) Lab on Web Development Technology – IV
	B) Lab on Data Analytics - III		B) Lab on Data Analytics - IV
	C) Lab on Machine Learning Using Python		C)Lab on Data Mining

Semester – I

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 101 - Fundamentals of Accounting
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**I**	CIE Marks :	**40**
Course Code	**BCA 101**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**02**

Course Outcomes – At the end of the course, student will be able to:

1. To understand fundamental concepts of financial accounting.
2. To understand the basics of cost accounting.
3. To maintain and record financial transactions in books of accounts.
4. To prepare final accounts of sole proprietary business.
5. To prepare Cost Sheet and record the transactions of materials.

Unit 1 – Introduction to Accounting :(theory only) 06L 15 M

1.1 Meaning and definition of Financial Accounting.
1.2 Objectives and scope of Financial Accounting,
1.3 Meaning and use of Book Keeping
1.4 Accounting v/s Book Keeping
1.5 Advantages and Limitations of Financial Accounting.

Unit 2 - Basics of Accounting (theory only) 08L 15M

2.1 Types of Accounting
2.2 Golden Rules of Accounting.
2.3 Double entry system in Accounting
2.4Terms used in accounting : Debtors, Creditors, Bill Receivable, Bills Payable, Credit Note ,Debit Note ,Petty Cash ,Contra Entry ,Trade Discount ,Cash Discount, Suspense A/c
2.5 Users of accounting information

Unit 3 –Fundamentals of Book Keeping & Recording of transactions (Practical Problems) 12L 15 M

3.1 Concept and Format of Journal
3.2 Recording of transactions in Journal
3.3 Meaning and Format of Ledger
3.4 Posting of transactions in Ledgers
3.5 Rectification of Errors

Unit 4 – Preparation of Final Accounts of Sole Proprietorship Business (Practical Problems) 16L 15M

4.1 Meaning, Importance & Objectives of Final Accounts
4.2 Preparation of Trial Balance
4.3 Preparation of Trading A/c., Manufacturing A/c.
4.4. Preparation of Profit & Loss A/c.
4.5 Preparation of Balance Sheet- Adjustments- Outstanding Expenses, Prepaid Expenses, Accrued Incomes, Depreciation

Unit 5 –Fundamentals of Cost Accounting (Theory and Problem) 08L 15 M
5.1 Cost, Expense, Loss : Meaning 5.2 Costing, Cost Accounting 5.3 Types of Costs on the basis of various criteria 5.4 Advantages and Limitations of Cost Accounting 5.5 Difference between Financial Accounting and Cost Accounting 5.6 Cost Sheet: Importance and objectives of Cost Sheet 5.7 Format of Cost Sheet & Preparation of Cost Sheet**(Problem)**
Unit 6 – Chapter 6 Material Control (Theory and Problem) 10L 15M
6.1 Meaning & Importance of Materials accounting and control 6.2 Different Level of Materials & their Calculations :Economic Order Quantity (EOQ), Maximum Level, Minimum Level, Average Level, Reorder Level, Danger Level **(Problems)** 6.3 Problems on Preparation of Store ledger under FIFO, LIFO, Simple Average Method **(Problems)**
Exam Pattern -
Reference Books -
1. Introduction to Accountancy by T.S. Gerwal, S.C. Gupta- S.Chand Publication- 8'th Edition, (ISBN-108121905699) 2. Financial Accounting by Bhushan Kumar Goyal, H.N.Tiwari- International Book House Pvt. Ltd.- First Edition (ISBN-9789381335420) 3. Fundamentals of Accounting by Dr. S.N. Maheshwari, Dr.S.K. Maheshwari- Vikas Publishing House (ISBN-139788180544491) 4. Accounting for Management by T. Vijaykumar, - (2010) – Tata McGraw Hill (ISBN-139780070090170)

KavayitriBahinabaiChaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 102–Fundamentals of Computer
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**I**	CIE Marks :	**40**
Course Code	**BCA 102**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**02**

Course Outcomes – At the end of the course, student will be able to:

1. Acquire the knowledge of fundamentals of Computer and Operating System.
2. Develop problem solving skill through algorithms and flowcharts.
3. Understand the basics of computer networking and internet.

Unit 1 –Computer Fundamentals: 10L 15 M

History & generation of computer, Block diagram of computer system, Types of computers
Definition- Software, Hardware, Compiler, Interpreter, Characteristics & applications of Computer, Data Representation: Introduction to Number system: decimal, binary, octal and hexadecimal, Conversion in Number System, Character representation: ASCII

Unit 2 -Procedural Programming Paradigms and Platforms 10L 15M

Definition - Algorithm, Flowchart, Flowchart symbols, Examples for constructing algorithm and flowchart for simple programs (Minimum 5) , computer programming platforms (Hardware, software, server and cloud based)

Unit 3 –Operating System 10L 15 M

Definition, Need and Function of an operating system,
Types of operating system, Comparative study of various operating systems (DOS, Linux and Windows)

Unit 4 –Memory Management Concept 10L 15M

Types of Memory Primary– RAM, ROM, PROM, EPROM,
Secondary– Magnetic Disk, Hard Disk and CD
Definitions and Concept – Paging, Segmentation, Deadlock

Unit 5 – Networking and Internet 10L 15 M

What is Computer network? Types of Networks: LAN, MAN, WAN, Topologies: Star, Tree, Bus, Ring, Mesh, Fully Connected, Wireless Networks, Working of Internet, Use of Internet, Applications of Internet, Study of Web Browsers, Search Engines, Creating an E-mail Account, Sending & Receiving E-mail (with attachment).

Unit 6 –Office Automation 10L 15M

Basic Concepts, MS-Word- demonstration of text formatting, tables, shapes, smart-arts, charts, Spreadsheets- Functions- (Aggregate function) , Macros. Presentation Tool Design Slides (using Text, images, charts, clipart), Slide Animation, Template and theme creation

Exam Pattern -

Reference Books -

- V.RajaRaman, "Fundamentalsofcomputer"(PHIPublication)***ISBN***10:8120340116
- RogerHuntandJohnShelley, "Computerandcommonsense"(PHIPublication)***ISBN***10:0131646737
- AndrewS.Tanenbaum, "ComputerNetworks"–FourthEdition.***ISBNnumber***0130661023
- Hurwitz Judith S. and Daniel Kirsch, "Cloud Computing for Dummies". ISBN
- GodboleAchyut and KahateAtul, "Web Technologies: TCP/IP, Web/ Java Programming, and Cloud Computing, ", 3e Tata McGraw-Hill Education ISBN: 9332900914, 9789332900912.

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 103 - Programming in C - I
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**I**	CIE Marks :	**40**
Course Code	**BCA 103**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**02**

Course Outcomes – At the end of the course, student will be able to:

1. Understand the basic concepts of C Programming for problem-solving and Illustrate the C data types, syntax and constructs.
2. Illustrate C for decision making, branching and looping statements
3. Understand the concept of Array and Strings to solve different problems.

Unit 1 –PreliminaryConcepts **10L 15 M**

- Historyof 'C'Programminglanguage
- ApplicationsandFeatures
- Concept of Structured Programming
- StructureofC-program
- Compilation,ExecutionandDebuggingofC-program, Types of Errors
- Introduction to IDE, Types of IDEs: Turbo C++, Textpad, DevCPP, Code block etc

Unit 2 -Basicsof 'C'Program **10L 15M**

- C character set, Tokens :identifiers, keywords, Constants, Strings, Special Symbols and Operators
- Variables, Data types and Qualifiers, Assignment statement, Comments
- Input Output Statements (Standard and formatted)
- Introduction and features of 'C' preprocessor Directives: #define, File inclusion (#include)

Unit 3 – OperatorsandExpression10L 15 M

- Operators –Arithmetic, Relational, Logical, Assignment, Increment-Decrement, Conditional Operator, Bitwise, Special Operator(Comma, sizeof), Operator hierarchy & associativity
- Type Conversion – implicit and explicit

Unit 4 –Control Statements **10L 15M**

- If Statement, if-else Statement, nested if-else Statement, else-if ladder, Switch Statement
- Break, continue and goto statements
- Looping Concepts: While, do-while, for loop Nested loops Concept

Unit 5 – Arrays and Strings **10L 15 M**

- Definition: Array: declaration and Initialization
- Types of array(One Dimensional and Multidimensional)
- Advantages and disadvantages of array
- Applications of array
- Strings, Standard library string function: strlen(), strcpy(), strcat(), strcmp() etc.

Unit 6 - C Libraries **10L 15M**

- Introduction to C Programming Libraries: stdio.h, conio.h, stdlib.h, math.h, graphics.h, time.h,

ctype.h

- Math.h- abs (), sqrt( ), pow( ), ceil( ), floor( )
- Time.h – getdate(),clock(),time(),difftime()
- Ctype.h- islower(),isupper(), isalnum(), isdigit()
- Stdlib.h – exit(),random()

Exam Pattern -

Reference Books -

- Denis Ritchie. "C" Programming – Prentice Hall Software Series- ISBN. 10 9 8 7
- Yashwant P. Kanetkar - ANSI C ,BPB publication. ISBN: 9788183333245
- Byron Gottfried – Programming with C –Tata McGRAW-Hill ISBN-10: 0070145903
- Yashwant P. Kanetkar -Understanding pointers in "C" -BPB publication. ISBN-13: 978-8176563581
- E.Balguruswami -Programming in ANSI- C- Tata McGRAW-Hill- ISBN-10: 933921966X
- Mike McGrath - C programming in easy step – Wiley publication ISBN-10: 1840785446

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 104 - Web Design - I
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**I**	CIE Marks :	**40**
Course Code	**BCA 104**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**02**

Course Outcomes – At the end of the course, student will be able to:

4. Acquainted with elements, Tags and basic structure of HTML files.
5. Up skills the knowledge of basic and advanced web designing.
6. Students were implement effective use of List and Tables.
7. Students were implement effective web page navigation.
8. Students were capable to design web page layout
9. Students were understood and implement use of style sheet.

Unit 1 –Introduction to Web **10L 15 M**

Introduction to Internet, Advantages of Internet, Working of Internet, World Wide Web (WWW), Hypertext Transfer Protocol (HTTP), Universal Resource Locator (URL), Introduction to Web Browser and Web server, Introduction to Web page, Static and Dynamic Web page,

Unit 2 - Fundamentals of HTML **10L 15M**

Introduction to HTML, Basic structure of HTML document, Formatting Text, Font Tags and Attributes, Headings Tags, Image Tag and Attributes, Background Color and Background Images, Inserting Audio and Video Files, Marquee Tag and Attributes

Unit 3 – List, Hyper link and Table **10L 15 M**

List Tag - Ordered List, Unordered List, Definition List, Introduction to Hyperlink, Internal and External Hyperlink, Image Link, Table Tags & Attributes, Cell Spacing, Cell Padding, Row Span, Col Span

Unit 4 – Frame, Frameset and Form **10L 15M**

Frame, Frameset,Creating Framesets, Target Frameset, Form Tag and Attributes, Form Elements - Textbox, Text Area, List Box, Radio Button, Checkbox, Submit and Reset Button

Unit 5 – Introduction to CSS **10L 15 M**

Basic of CSS, Advantages of CSS, Role of CSS in Web Designing, CSS Structure and Syntax, Internal

CSS, Inline CSS, External CSS, Font Properties of CSS
Unit 6 – CSS Selectors **10L 15M**
Selectors and declarations, Element Selector, Class Selector, ID Selector, Child Selector, Universal Selector, Group Selector
Exam Pattern -
Reference Books -
▪ Textbook of Web Designing By Joel Sklar, Cengage Learning Publication 2009 ▪ Web designing in Nut Shell (Desktop Quick Reference) by Jennifer Niederst Publication – O'Reilly publication ▪ Designing web navigation by James Kalbach Publication – O'Reilly publication Textbook of ▪ Web Designing By Joel Sklar, Cengage Learning Publication 2009 ISBN, 1423901940

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 105 - Lab on Computer Fundamental
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**I**	CIE Marks :	**40**
Course Code	**BCA 105**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**03**

Course Outcomes – At the end of the course, student will be able to:

1. Students can able to understand the installation of operating system.
2. Students can understand basic DOS command, and different browser.
3. Student understand different platforms, Internet, mails, tables
4. Students can learn text formatting and table formatting.
5. Students capable to design power point presentation, tables, shapes, smart arts and charts

Assignments :

1. Installation of Operating System (Linux and Windows).
2. Run different commands of MS DOS – CD, DIR, COPY, REN, CLS, MD, RD, etc.
3. Study different web Browsers- Internet Explorer, Fire fox, downloading of files
4. Connect the Internet- open any website of your choice and download the WebPages.
5. Study different platforms – Hardware, Software, Server and Cloud.
6. Create your E-Mail ID on any free E-Mail Server.
7. Login through your E-Mail ID and do the following:
   a. Read your mail
   b. Compose a new Mail
   c. Send the Mail to one person
   d. Send the same Mail to various persons
   e. Forward the Mail
   f. Delete the Mail
   g. Send file as attachment
8. Create and demonstrate of text formatting, tables, shapes, smart-arts, charts.
9. Create a spreadsheet which will demonstrate use of aggregate function.
10. Create and demonstrate power point presentation with animation

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 106 - Practical on Web Design - I
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**I**	CIE Marks :	**40**
Course Code	**BCA 106**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**03**

Course Outcomes – At the end of the course, student will be able to:

1. Students were able to design consistent look and feel web pages.
2. Students were capable to use multimedia in web page.
3. Students were implement effective web page navigation.
4. Students were capable to design web page layout
5. Students were implement use of style sheet.

Assignments :

1. Create web page using basic HTML tags.
2. Create web page using Different Formatting tag.
3. Create Web page with different Images.
4. Create web page using Marquee Tag
5. Create a web page using different List tag.
6. Create web page using Anchor Tag (Internal Link and External Link)
7. Create web page to design time table of your college using Table tag.
8. Create web page inserting audio and video files.
9. Design a web page using Frames and Frameset Tag.
10. Design webpage of College Admission Form.
11. Design a web page using Inline and Internal CSS
12. Demonstrate the use of External CSS
13. Create web page to set background color using CSS.

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 107–Lab on C Programming
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**I**	CIE Marks :	**40**
Course Code	**BCA 107**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**03**

Course Outcomes – At the end of the course, student will be able to:

1. Students understand the input output functions.
2. Students can understand the use of various operator.
3. Students can understand the use of control statements.
4. Students can design the various expressions in C
5. Students can understand the array and its type.

Assignments :

1. Write a program using standard Input and Output Statements.
2. Write a program using formatted input output statements also study various format String and Escape sequence characters.
3. Write a program to illustrate various operators like arithmetic, relational, logical, Conditional etc.
4. Write a program to illustrate various control statements (if, if-else, nested if-else, switch)
5. Write a program to check whether the number is palindrome or not.
6. Write a program to check whether the number is Armstrong or not.
7. Write a program to generate Fibonacci series up to given term.
8. Write a program to find factorial of given number.
9. Write a program for print the table of 1 to 5 using nested loop.
10. Write a program to check whether the string is palindrome or not.
11. Write a program to demonstrate concept of array.
    i) One dimensional
    ii) Two dimensional
12. Write a program to demonstrate various standard library functions.

Semester – II

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 201 –Professional Communication
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**I**	CIE Marks :	**40**
Course Code	**BCA 201**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**02**

Course Outcomes – At the end of the course, student will be able to:

1. To develop his verbal and non verbal communication ability
2. To communicate with people effectively and confidently.
3. To draft effective business correspondence documents.
4. To make and present well designed and informative presentations

Unit 1 – Introduction to Communication **06L 15 M**

1.1. Introduction
1.2. Meaning
1.3. Definition
1.4. Process, importance.
1.5. Principles of effective communication
1.6. Scope of Business communication - Internal & External
1.7. Barriers to Communication, Overcoming the barriers

Unit 2 - Listening Skills **08L 15M**

2.1. Types of Listening (theory /definition)
2.2. Tips for Effective Listening
2.3. Academic Listening- (lecturing)
2.4. Listening to Talks and Presentations
2.5. Listening to Announcements- (railway/ bus stations/ airport / stadium announcement etc.)
2.6. Listening to Radio and Television

Unit 3 –Oral Communication & Presentation Skills **12L 15 M**

3.1 Need for Dialogue and Conversation Skills
3.2 Skills need for Dialogue
3.3 Clear & pleasant Speech
3.4 Speakers Appearance and Personality
3.5 Preparing text and visual material for presentation
3.6.Use of ICT tools for communication and presentation

Unit 4 –Soft Skills **16L 15M**

4.1. Empathy
(Understanding of someone else's point of view) 4.2. Intrapersonal skills
4.3. Interpersonal skills
4.4. Problem solving
4.5. Reflective thinking, Critical thinking
4.6. Negotiation skills

Unit 5 –Basics of English **08L 15 M**

5.1 Parts of Speech- Noun, Pronoun, Verb, Adjectives, Adverb, Conjunction, Preposition, Interjection
5.2 Tenses in a Nutshell -For proper sentence construction.
5.3 Punctuation: Commas, Semi-colons, colons, Hyphens & Dashes, Apostrophes
5.4 Vocabulary Building -; Antonyms and Synonyms; Prefixes and Suffixes

Unit 6 – Written Communication **10L 15M**

6.1 Letter writing, Essentials of Good Business letters
6.2 Types of letters: Types of Application Letters- Application for Job, Application for Leave.
6.3. Preparing Resume for Job
6.4 Email drafting and Etiquettes
6.5. Preparing agenda and writing minutes of meetings

Exam Pattern -

Reference Books -

1. Business Communication by Urmila Rai &S.M. Rai, Ninth Revised Edition (2010) (ISBN-83-8318-438-3) Himalaya Publishing House
2. Effective Business Communication by Asha Kaul, Second Edition (2015) (ISBN-789390464777)
3. THI Learning Pvt. Ltd., Business Communication by K.K. Sinha, Galgotia (2003)(ISBN-81-85989-36-2)
4. Business Communication by M. Balasubramanyam, (2003) (ISBN-13-9788-176-639118), Kalyani Publications

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 202–Database Management System
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**I**	CIE Marks :	**40**
Course Code	**BCA 202**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**02**

Course Outcomes – At the end of the course, student will be able to:

1. Introduction to the basic concepts of database management systems.
2. Learning to design databases using ER modeling.
3. Learning to apply integrity constraints.
4. To understand and demonstrate database schema.
5. Understand and demonstrate Relational databases, SQL.

Unit 1 – Basics: 10L 5 M

What is Data?, What is Information?, What is Data management?, What is Optimization?, Preprocessing of Data, Importance of Data Quality, Introduction to DBMS softwares

Unit 2 - Database Systems: 10L 10M

Introduction of File Processing System, Introduction of DBMS, Difference between File processing system & DBMS, Applications of DBMS, View of data, Database Languages, Database Users

Unit 3 –Data Models: 10L 10 M

Relational Model, Network Model, Hierarchical Model, Entity Relationship Model.

Unit 4 – Integrity Constraints: 10L 10M

Primary Key, Foreign Key, Candidate Key, Super Key, Null, Default, Not Null, Check constraint, Entity Integrity, Referential Integrity

Unit 5 – Relational Database Design : 08L 15 M

Normalization, Normal Form: 1 NF, 2 NF, 3 NF, BCNF

Unit 6 – Structured Query Language (SQL): 10L 15M

Introduction to SQL, Data types, Operators, Working with tables, Introduction to DML, TCL, DDL, DCL, Functions: Numeric Function, Character Function, Date Function, Conversion Function, Group Functions. Sub Queries, view, Sequence, Set Operators, Joins, Inner joins, Equi, Non Equi, Self-join & Outer Joins.

Exam Pattern -

Reference Books -

- Database System Concepts: - Abraham Silberschatz, Henry F. Korth& S. Sudarshan, McGrawHill ISBN 978-0-07-352332-3
- Introduction to Database Management Systems, by – AtulKahate (Pearson Education) ISBN 9788131700785
- Oracle PL/SQL by Example, Rosenweig, Pearson Education ISBN 10: 0133796787

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 203–Programming in C – II
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**I**	CIE Marks :	**40**
Course Code	**BCA 203**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**02**

Course Outcomes – At the end of the course, student will be able to:

1. Apply the concepts of Function modules, its usage
2. Apply the concepts of memory allocation using Pointers
3. Understand the concepts of structures and unions: declaration, initialization and implementation.
4. Learn to draw different graphics objects.
5. Learn to store and apply the data using files.

Unit 1 – Function: 10 L 12M

- Definition, Need of Function, prototype, passing parameters(Call by value and Call by reference)
- Scope of variable
- Functionwithreturnand Functionwithargument
- Recursion
- Storageclasses

Unit 2 –Pointers: 14L 10M

- Introduction: Defination and uses
- Declaration and Initialization
- Operations on Pointers: Pointer Arithmetic,Array of Pointer, Function and Pointer, Pointer to pointer
- Dynamic memory allocation(malloc(),calloc(),realloc() and releasing dynamically allocated memory(free(),flush()).

Unit 3 –Structure and Union: 12L 12 M

- Introduction. Declaration and accessing of structure and union
- Need of structure and union, Difference between structure and union
- Nested structure
- Array of structure

Unit 4 – Graphics : 12L 12M

- Introduction to Graphics in C
- Graphics functions: Initgraph(), putpixel(),closegraph(),outtextxy(), setcolor(),line(),circle(),rectangle(),ellipse(),arc(), bar()

Unit 5 – File Handling in C : 12L 12M

- Concept of files, records, field
- File Processing-fopen() , fclose(),fprintf(),fscanf(),getc(), putc(),getw(),putw() etc.
- Various mode of file opening and closing files.
- Command line arguments

Exam Pattern -

Reference Books -

- Denis Ritchie. “C” Programming – Prentice Hall Software Series- ISBN. 10 9 8 7
- Yashwant P. Kanetkar - ANSI C ,BPB publication. ISBN: 9788183333245
- Byron Gottfried – Programming with C –Tata McGRAW-Hill ISBN-10: 0070145903
- Yashwant P. Kanetkar -Understanding pointers in “C” -BPB publication. ISBN-13: 978-8176563581
- E.Balguruswami -Programming in ANSI- C- Tata McGRAW-Hill- ISBN-10: 933921966X
- Mike McGrath - C programming in easy step – Wiley publication ISBN-10: 1840785446

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 204–Web Design - II
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**II**	CIE Marks :	**40**
Course Code	**BCA 204**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**02**

Course Outcomes – At the end of the course, student will be able to:

1. Student were able to embed JavaScript in web page
2. Students successfully added interactivity in web page
3. Students were applied validation on web form
4. Students were implemented different events.
5. Students were familiar with bootstrap framework.

Unit 1 –Introduction to Web Site Development & Java Script 10L 15M

Web Site Development, Web Site Development Phases, Web Site Authoring tools, Web Site Development Model (RAD), Meaning of Scripting Language, Types of Scripting Language- JavaScript, VBScript, ASP, PHP, Differences between Client-Side &Server-Side Scripting, Introduction to Java Script, Advantages of JavaScript, Limitation of JavaScript

Unit 2 –Working with JavaScript 10L 15M

Embed JavaScript into HTML, Data Types, Creating Variable , Operators & Expressions, JavaScript Comments

Unit 3 – JavaScript Interactivity 10L 15M

Introduction to Function, Working with Function, Calling function, Built-in String function, Condition Checking-if-else statement, Switch Case Statement, Looping Statements - for LoopWhile Loop

Unit 4 – Dialog Box and Events 10L 15M

Dialog Boxes - Alert Dialog Box, Confirm Dialog Box, Prompt Dialog Box,
JavaScript Events - onclick, onmouseover, onmouseout, onkeypress, onkeydown, onkeyup,onfocus, onload,onunload,onblur, onsubmit

Unit 5 – JavaScript Objects 10L 15M

Array Object, Date Object, Math Object, Form Object

Unit 6 – Bootstrap and Responsive Design 10L 15M

Introduction to Bootstrap, Creating simple page, Layout of Bootstrap, Grid System, Bootstrap components – Buttons, Horizontal Naves, Dropdown,

Exam Pattern -

-

Reference Books -

- The ABC's of Java Script by Lee Purcell Mary Jane Mara, BPB Publication .ISBN: 8170298261.
- The Complete Reference – Web Design, Thomas A. Powell, TMH, ISBN 0-07-041186.
- How to become webmaster in 14 days, James L Mohler, Techmedia ISBN 1575211696.
- HTML, DHTML, JavaScript, Perl & CGI by Ivan Bayross, BPB Publishing ... ISBN: 8176562742
- Web References: www.w3c.org, www.sybex.com ISBN 0-07-041186
- Web Enabled Commercial Application Development using HTML, DHTML, Java Script,PERL ISBN 13: 9788183330084.
- Bootstrap 4 Quick Start: Responsive Web Design and Development Basics for Beginners (Bootstrap 4 Tutorial Book 1)Jacob Lett

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 205 - Lab on DBMS
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**I**	CIE Marks :	**40**
Course Code	**BCA 205**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**03**

Course Outcomes – At the end of the course, student will be able to:

1. Students can able to create the database.
2. Students can understand basic database commands.
3. Students can understand constraint.
4. Students capable to design SQL using different clause.

Assignments :

1. Demonstration of creating database
2. Create table insert 10 records in it.
3. Demonstrate to INSERT, UPDATE, and DELETE Records in Table.
4. Demonstrate to SELECT with clauses
5. Demonstrate to Alter Table (Add Column, Delete Column, Rename, Modify Column
6. Demonstrate integrity constraints.
   PRIMARY KEY,
   FOREIGN KEY
   CHECK
   NOT NULL
   DEFAULT
7. Demonstrate use of operators.
8. Query based on operators and joins • Simple and nested query
9. Write down SQL by using i. WHERE Clause ii. GROUP BY ii. HAVING CLAUSE
10. Write down SQL by using i. Aggregate functions ii. Date functions iii. String functions

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 206–Lab On C Programming - II
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**II**	CIE Marks :	**40**
Course Code	**BCA 206**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**03**

Course Outcomes –

At the end of the course, student will be able to:

1. Student were able to understand the concept of Function techniques
2. Students were able to understand the storage classes
3. Students were able to understand pointer and its uses.
4. Students were able to design the basic graphics objects
5. Students were understand the operations on file and command line argument.

Assignments :

1. Write a program to illustrate concept of function using call by value.
2. Write a program to illustrate concept of function using call by reference.
3. Write a program to illustrate concept of recursion.
4. Write a program to demonstrate extern, static variables.
5. Write a program to demonstrate pointers to arrays.
6. Write a program to demonstrate pointers to function.
7. Write a program to pointers to pointer.
8. Write a program to demonstrate structure.
9. Write a program to demonstrate union.
10. Write a program to demonstrate various graphics function.
11. Write a program to implement read and write operations on file.
12. Write a program to demonstrate command line arguments

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 207–Lab on OnWeb Design - II
W.E.F. 2022-23
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**II**	CIE Marks :	**40**
Course Code	**BCA 207**	SEE Marks :	**60**
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	**03**

Course Outcomes –

At the end of the course, student will be able to:

1. Student were able to develop web page using JavaScript
2. Students successfully added interactivity features in web page
3. Students were implemented validation on web form
4. Students were implemented different events.
5. Students were familiar with bootstrap framework.

Assignments :

1: Write a program to embed JavaScript into HTML.

2: Write a JavaScript code to demonstrate Conditional Statements

3: Write a JavaScript code to demonstrate Looping Statements

4: Write JavaScript code to demonstrate different string functions.

5: Write JavaScript code to demonstrate onblur, onfocus, onload, onsubmit.

6: Write JavaScript code to demonstrate onkeypress, onmouseover, onmouseout.

7: Write a program to perform addition of two numbers using web form.

8: Create a HTML page to demonstrate Date object using JavaScript.

9: Write JavaScript code to demonstrate use of Dialog Boxes.

10: Write a JavaScript to apply form validation – not null, number, string etc.

11: Create simple registration form using Bootstrap.

12: Create Mini Website