



# हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

रायपुर नाका, दुर्ग (छ.ग.)-491001

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क्र. 1626 / अका. / 2024

दुर्ग, दिनांक : ...01/07/2024

प्राचार्य,

समस्त संबद्ध महाविद्यालय,  
हेमचंद यादव विश्वविद्यालय,  
दुर्ग (छ.ग.)

विषय:- स्नातक स्तर के नवीन पाठ्यक्रम के भाग-दो को सत्र 2024-25 से विश्वविद्यालय में लागू करने विषयक।

संदर्भ:- अपर संचालक, उच्च शिक्षा संचालनालय, नवा रायपुर, अटल नगर का पत्र क्र. 3985/237/आउशि/2023, दिनांक 13.06.2023।

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विषयांतर्गत लेख है कि संदर्भित पत्र के माध्यम से प्राप्त स्नातक स्तर भाग-दो के निम्नलिखित कक्षा/विषयों के परिवर्तित/संशोधित पाठ्यक्रम शिक्षा सत्र 2024-25 से लागू किये जाते हैं:-

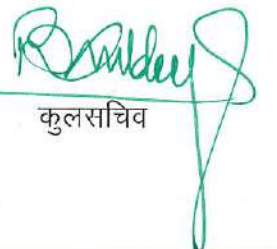
- |                            |   |  |
|----------------------------|---|--|
| 1. बी.ए.                   | — | आधार पाठ्यक्रम—हिन्दी भाषा, अंग्रेजी भाषा, हिन्दी साहित्य, अंग्रेजी साहित्य, राजनीतिशास्त्र, अर्थशास्त्र, नृत्य, दर्शनशास्त्र, समाजशास्त्र, इतिहास, संस्कृत, मानवविज्ञान, भूगोल, मनोविज्ञान, कम्प्यूटर।                        |
| 2. बी.एस-सी.               | — | आधार पाठ्यक्रम—हिन्दी भाषा, अंग्रेजी भाषा, जीव विज्ञान, मानवविज्ञान, गणित, बायोटेक्नोलॉजी, कम्प्यूटर साईंस, भौतिकी, प्राणीशास्त्र, भूविज्ञान, आई.टी., सूक्ष्मजीवविज्ञान, वनस्पतिशास्त्र, इलेक्ट्रॉनिक्स, रसायन शास्त्र, भूगोल। |
| 3. बी.एस-सी. (गृह विज्ञान) | — | आधार पाठ्यक्रम — हिन्दी भाषा, अंग्रेजी भाषा एवं गृह विज्ञान।   |
| 4. बी.कॉम.                 | — | आधार पाठ्यक्रम — हिन्दी भाषा, अंग्रेजी भाषा एवं वाणिज्य।   |
| 5. विधि                    | — | एल.एल.बी., बी.ए.एल.एल.बी   |
| 6. प्रबंध                  | — | बी.बी.ए.   |
| 7. कम्प्यूटर               | — | बी.सी.ए.   |
| 8. शिक्षा                  | — | बी.एड.   |
| 9. लाईब्रेरी साईंस         | — | बी.लिब.  |

उपरोक्त विषयों को शिक्षा सत्र 2024-25 से संशोधित रूप में स्नातक स्तर भाग-दो के लिए लागू किया जाता है स्नातक स्तर भाग तीन के पाठ्यक्रम यथावत रहेंगे।

अतः आपसे अनुरोध है कि पाठ्यक्रम परिवर्तन/संशोधन से महाविद्यालय के शिक्षकों एवं छात्र-छात्राओं को अवगत कराने का कष्ट करेंगे।

टीप :- परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय की वेबसाइट पर उपलब्ध है।

संलग्न : उपरोक्तानुसार।

  
कुलसचिव

क्र. 1627 /अका./2024

दुर्ग, दिनांक 01/07/2024

प्रतिलिपि:-

1. अपर संचालक, उच्च शिक्षा संचालनालय, नवा रायपुर, अटल नगर का पत्र क्र. 3985/237/आउशि/2023, दिनांक 13.06.2023 के परिपेक्ष्य में सूचनार्थ।
2. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद यादव विश्वविद्यालय, दुर्ग।
3. उपकुलसचिव, परीक्षा विभाग एवं उपकुलसचिव, गोपनीय विभाग हेमचंद यादव विश्वविद्यालय, दुर्ग।

  
सहा. कुलसचिव (अका.)

Learning Outcome Based Scheme and Syllabus of Examination  
for  
Bachelor of Computer Application (BCA)  
Courses Effective from Academic Session 2022-23

1. **Title of the program:** The title of the programme shall be Bachelor of Computer Application (B.C.A.).
2. **Eligibility for admission:** Eligibility of admission in BCA will be as follow:
  - i. Student must passed H.Sc. (Class 12<sup>th</sup>) in any stream/Three year diploma course in any branch of technical education or equivalent from recognized board.
  - ii. Student must have minimum aggregate of 40% marks in H.Sc. examination (Relaxation in percentage will be as per rule of C.G. Govt.).
3. **Scheme of examination:** Each theory paper is divided into two components as follow, however there shall not be any Internal Assessment (IA) for practical subject.
  - i. University Examination (UE): 75 Marks
  - ii. Internal Assessment (IA): 25 Marks
4. **Internal Assessment (IA):** The structure of IA shall be as follow:
  - i. **Internal test (15 Marks):** There shall be three internal tests of 15 marks each, the average of best two shall be considered as the marks of internal test.
  - ii. **Other activity (10 Marks):** Presentation/Group discussion /Assignment/ MOOC course certification (List of MOOC course shall be provided to the students through notice board/college website by the HOD concern after mapping it from SWAYAM, Coursera or any other similar popular platforms at the beginning of each academic session) or any other similar activity.
5. **University Examination (UE):** The pattern of examination shall be as follow:
  - i. There shall be two sections of question paper: A and B
  - ii. Section A (15 Marks) shall be compulsory and shall consists 15 short/objective questions each of one mark covering the entire syllabus.
  - iii. Section B (60 Marks) shall consist questions from 5 unites as per the syllabus with internal choice (Student has to attempt only one question from each unit). Each unit shall be of 12 marks.

6. **Programme Learning Outcomes for Bachelor of Computer Application (BCA)**

On completion of this programme, the students are expected to:

**PLO1:** Apply knowledge of computing fundamentals, computing specialization, mathematics, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models from defined problems and requirements.

**PLO2:** Identify, formulate, research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines.

**PLO3:** Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.

**PLO4:** Demonstrate knowledge and understanding of the computing and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PLO5:** Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.

**PLO6:** Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.

**PLO7:** Develop software projects in various languages as per the demand of the market.

**PLO8:** Work on research based projects.

**PLO9:** Develop live software projects and will be capable of working in IT companies.

**PLO10:** Explore and gain new knowledge through MOOC courses.

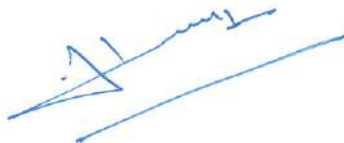
**PLO11:** Ability to pursue higher studies of specialization and to take up technical employment.

**PLO12:** Ability to formulate, to model, to design solutions, procedure and to use software tools to solve real world problems and evaluate.

**PLO13:** Apply standard Software Engineering practices and strategies in real-time software project development.

**PLO14:** The ability to work independently on a substantial software project and as an effective team member.

**PLO15:** Ability to operate, manage, deploy and configure software operation of an organization.

A handwritten signature in blue ink, consisting of a stylized, cursive script that is difficult to decipher. The signature is written over a horizontal line.

## Scheme of BCA

Year	Course Code	Subject Name	Theory/ Practical	Total Credit	Marks			
					UE	IA	Total	
					Max	Max	Max	Min
First	BCA-1T	Discrete Mathematics	Theory	6	75	25	100	33
	BCA-2T	Computer Fundamental and MS office	Theory	4	75	25	100	33
	BCA-3T	Programming with C and C++	Theory	4	75	25	100	33
	BCA-4T	Data Structure	Theory	6	75	25	100	33
	BCA-5T	Digital Electronics	Theory	6	75	25	100	33
	BCA-6T	Hindi	Theory	5	50	-	50	17
	BCA-7T	English	Theory	5	50	-	50	17
	BCA-1P	LAB 1: PC software	Practical	2	100	-	100	33
	BCA-2P	LAB 2: Programming with C and C++	Practical	2	100	-	100	33
Second	BCA-8T	Numerical Mathematics	Theory	6	75	25	100	33
	BCA-9T	Operating System	Theory	6	75	25	100	33
	BCA-10T	Relational Database Management System	Theory	4	75	25	100	33
	BCA-11T	Computer Networking and Cyber Technology	Theory	6	75	25	100	33
	BCA-12T	Web Technology	Theory	4	75	25	100	33
	BCA-13T	Hindi	Theory	5	50	-	50	17
	BCA-14T	English	Theory	5	50	-	50	17
	BCA-3P	LAB 3: Relational Database Management System	Practical	2	100	-	100	17
	BCA-4P	LAB 4: Web Technology	Practical	2	100	-	100	17
Third	BCA-15T	Python Programming	Theory	4	75	25	100	33
	BCA-16T	Java Programming	Theory	4	75	25	100	33
	BCA-17T	Software Engineering	Theory	6	75	25	100	33
	BCA-18T	Artificial Intelligence and Expert System	Theory	6	75	25	100	33
	BCA-19T	E-Commerce	Theory	6	75	25	100	33
	BCA-20T	Communication Skill	Theory	5	100	-	100	33

BCA-5P	LAB 5: Java	Practical	2	100	-	100	33
BCA-6P	LAB 6: Python	Practical	2	100	-	100	33
BCA-7P	Project	Practical	5	100	-	100	33

**Note:**

1. Syllabus of Foundation Courses: Hindi and English shall be similar to B.Sc. Computer Science/IT program.
2. Students has to pass environment studies subject as per the rule of any other B.Sc. program.
3. There shall be four extra credits in all the years of under graduation for internship/apprenticeship/skill development program. The certificate of extra credits would be provided by the concern university and is not mandatory.

**Abbreviations used:**

**UE:** University Exam

**IA:** Internal Assessment



हिंदी भाषाकेव्याकरण के रचना पक्ष का ज्ञान, संप्रेषण कौशल, सामाजिकसंदेश एवं भाषायी दक्षता की दृष्टि तथा नई शिक्षा नीति के उद्देश्य को ध्यान में रखकर पाठ्यक्रम का निर्माण किया गया है।

बी.ए./ बी.एस-सी./ बी.कॉम./ बी.एच.एस.सी. भाग- दो  
(आधार पाठ्यक्रम)  
प्रथम प्रश्नपत्र  
हिंदी भाषा  
कोड....

पूर्णांक 75  
क्रेडिट 05

पाठ्यक्रम का उद्देश्य:-

- (1) गद्य विधाओंसे अवगत कराना एवं निबंध कौशल सिखाना।
- (2) कार्यालयीन हिंदी का ज्ञान प्रदान करना ।
- (3) हिंदी व्याकरण का समग्र ज्ञान प्रदान करना ।
- (4) हिंदी भाषा में प्रचलित विभिन्न शब्द रूपों से परिचित कराना।

पाठ्य विषय:-

इकाई 1. (क) नाखून क्यों बढ़ते हैं?: हजारी प्रसाद द्विवेदी (ख) कार्यालयीन भाषा, मीडिया की भाषा, वित्त एवं वाणिज्य की भाषा, मशीनी भाषा	अंक 15 18 कालखंड
इकाई 2. (क) युवकों का समाज में स्थान : आचार्य नरेंद्र देव (ख) हिंदी के तत्सम, तद्भव, देशज, विदेशी शब्द-परिचय,	अंक 15 18 कालखंड

2/2

23/2/23

23-2-2023

23/2/23

23/2/23



संज्ञा, सर्वनाम,	
इकाई 3 (क)डॉ खूबचंद बघेल : हरि ठाकुर (ख)कारक, विशेषण, क्रिया विशेषण	अंक 15 18 कालखंड
इकाई 4 (क) एक पहाड़ीमैना की मौत : डॉ. कांति कुमार जैन (ख) समास, संधि	अंक 15 18 कालखंड
इकाई 5 (क) मातृभूमि : वासुदेव शरण अग्रवाल (ख)अनुवाद - परिभाषा, स्वरूप, प्रकार, स्रोत भाषा और लक्ष्य भाषा, अंग्रेजी से हिंदी में अनुवाद	अंक 15 18 कालखंड

#### मूल्यांकन योजना:-

प्रत्येक इकाई से एक-एक प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न में आंतरिक विकल्प होगा। प्रत्येक प्रश्न के 15 अंक होंगे। प्रत्येक प्रश्न के दो भाग 'क' और 'ख' होंगे एवं अंक क्रमशः 08 एवं 07 होंगे। प्रश्नपत्र का पूर्णांक 75 निर्धारित है। प्रश्नपत्रके पूर्णांकका दस प्रतिशत अंक आंतरिक मूल्यांकनके लिए निर्धारित है।

#### पाठ्यक्रम अधिगम परिणाम:-

1. गद्य की विभिन्न विधाओं से परिचित हो सकेंगे एवं उनमें साहित्यिक रूझान पैदा होगा।
2. हिंदी के आधारभूत व्याकरणिक अवधारणाओं से विद्यार्थी परिचित हो सकेंगे। उनमें रचनात्मकता एवं भाषाकौशल का विकास होगा।
3. विभिन्न प्रतियोगी परीक्षाओं की तैयारी में यह पाठ्यक्रम सहायक होगा।


#### पाठ्यक्रम निर्माण का औचित्य :-

सुप्रसिद्ध विद्वानों के लेख/निबंध/संस्मरण के माध्यम से विद्यार्थियों के चिंतन परक दृष्टिकोण एवं व्यक्तित्व का विकास करते हुए उन्हें व्याकरणिक एवं भाषा-प्रयोग विषयक पक्ष से परिचित कराते हुए प्रतियोगी परीक्षाओं की दृष्टि से तैयार करने की दिशा में यह पाठ्यक्रम उपयोगी रहेगा।





 23/4/23

 23.2.2023

 23/4/23

**BA/B.Sc./B.Com/B.Sc. Home.Sc. (Part-II)**  
**Foundation Course Paper-II English Language**

Max. Marks:75  
 Total credits: 05

Qualifying Marks:26

Paper-II	Mark's	Period's	Credit
<b>Unit-I</b> English in Use: A Textbook for College Students (Semester III), Macmillan Publishers India Pvt Ltd	3x5=15	18	01
<b>Unit -II</b> Business Reports & Media Reports Writing Notices, Blog Writing	1x10=10	18	01
<b>Unit -III Reading Comprehension</b> (a) Unseen Passage (MCQ -based) (b) Vocabulary (Text-based)	1x5=05 1x10=10	18	01
<b>Unit -IV Essay Writing:</b> Discursive Essay, Argumentative Essay	1x10=10	09	0.5
<b>Unit-V Grammar :</b> <ul style="list-style-type: none"> <li>• Ordering of words</li> <li>• Voice</li> <li>• Conditional sentences</li> <li>• Use of some, any, enough, too, otherwise, few, many, such, very</li> <li>• Prepositions</li> <li>• Question tags</li> <li>• Transformation of sentences (like-Simple to Compound to Complex, Exclamatory to Assertive)</li> <li>• Transformation of sentences with positive, Comparative and superlative degrees</li> <li>• Grammatical items given in the textbook 'English in Use'</li> </ul>	1x25=25	27	1.5
<b>Total</b>	<b>75</b>	<b>90</b>	<b>05</b>
<b>Recommended Books-</b> 1. Essential English Grammar, 2nd Edition by Raymond Murphy, Cambridge Publication 2. English Grammar in use 5th edition by Raymond Murphy, Cambridge Publication. 3. Advanced English Grammar by Martin Hewings Cambridge University Press.			

*[Signature]*  
 11/07/2023  
 C.P. C-Choudhury

**Part - I**  
**SYLLABUS FOR ENVIRONMENTAL STUDIES AND HUMAN RIGHTS**  
**(Paper code-0828)**

MM. 75

इन्वारमेंटल साईंसेस के पाठ्यक्रम को स्नातक स्तर भाग-एक की कक्षाओं में विश्वविद्यालय अनुदान आयोग के निर्देशानुसार अनिवार्य रूप से शिक्षा सत्र 2003-2004 (परीक्षा 2004) से प्रभावशील किया गया है। स्वशासी महाविद्यालयों द्वारा भी अनिवार्य रूप से अंगीकृत किया जाएगा।

भाग 1, 2 एवं 3 में से किसी भी वर्ष में पर्यावरण प्रश्न-पत्र उत्तीर्ण करना अनिवार्य है। तभी उपाधि प्रदाय योग्य होगी।

पाठ्यक्रम 100 अंकों का होगा, जिसमें से 75 अंक सैद्धांतिक प्रश्नों पर होंगे एवं 25 अंक क्षेत्रीय कार्य (Field Work) पर्यावरण पर होंगे।

सैद्धांतिक प्रश्नों पर अंक - 75 (सभी प्रश्न इकाई आधार पर रहेंगे जिसमें विकल्प रहेगा)

- |                      |   |        |
|----------------------|---|--------|
| (अ) लघु प्रश्नोंत्तर | - | 25 अंक |
| (ब) निबंधात्मक       | - | 50 अंक |

Field Work - 25 अंकों का मूल्यांकन आंतरिक मूल्यांकन पद्धति से कर विश्वविद्यालय को प्रेषित किया जावेगा। अभिलेखों की प्रायोगिक उत्तर पुस्तिकाओं के समान संबंधित महाविद्यालयों द्वारा सुरक्षित रखेंगे।

उपरोक्त पाठ्यक्रम से संबंधित परीक्षा कक्षा आयोजन वार्षिक परीक्षा के साथ किया जाएगा।

पर्यावरण विज्ञान विषय अनिवार्य विषय है, जिसमें अनुत्तीर्ण होने पर स्नातक स्तर भाग-एक के छात्र/छात्राओं को एक अन्य विषय के साथ पूरक की पात्रता होगी। पर्यावरण विज्ञान के सैद्धांतिक एवं फील्ड वर्क के संयुक्त रूप से 33: (तीस प्रतिशत) अंक उत्तीर्ण होने के लिए अनिवार्य होंगे।

स्नातक स्तर भाग-एक के समस्त नियमित/भूतपूर्व/अमहाविद्यालयीन छात्र/छात्राओं को अपना फील्ड वर्क सैद्धांतिक परीक्षा की समाप्ति के पश्चात् 10 (दस) दिनों के भीतर संबंधित महाविद्यालय/परीक्षा केन्द्र में जमा करेंगे एवं महाविद्यालय के प्राचार्य/केन्द्र अधीक्षक, परीक्षकों की नियुक्ति के लिए अधिकृत रहेंगे तथा फील्ड वर्क जमा होने के सात दिनों के भीतर प्राप्त अंक विश्वविद्यालय को भेजेंगे।

## **UNIT-I THE MULTI DISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES**

### **Definition, Scope and**

### **Importance Natural Resources:**

#### **Renewable and Nonrenewable Resources**

- (a) Forest resources: Use and over-exploitation, deforestation, Timber extraction, mining, dams and their effects on forests and tribal people and relevant forest Act.
- (b) Water resources: Use and over-utilization of surface and ground water, floods drought, conflicts over water, dam' s benefits and problems and relevant Act.
- (c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources.
- (d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity.
- (e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources.
- (f) Land resources: Land as a resource, land degradation, man induced landslides soil erosion and desertification.

**(12 Lecture)**

## **UNIT-II ECOSYSTEM**

### **(a) Concept, Structure and Function of and ecosystem**

- Producers, consumers and decomposers.
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids.
- Introduction, Types, Characteristics Features, Structure and Function of Forest, Grass, Desert and Aquatic Ecosystem.

### **(b) Biodiversity and its Conservation**

- Introduction - Definition: genetic. species and ecosystem diversity
- Bio-geographical classification of India.
- Value of biodiversity: Consumptive use. Productive use, social ethics, aesthetic and option values.
- Biodiversity at global, National and local levels.
- India as mega-diversity nation.

- Hot spots of biodiversity.
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wild life conflict.
- Endangered and endemic species of India.
- Conservation of biodiversity: In situ and Ex-situ conservation of biodiversity.

**(12 Lecture)**

### **UNIT- III**

#### **(a) Causes, effect and control measures of**

- Air water, soil, marine, noise, nuclear pollution and Human population.
- Solid waste management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution.
- Disaster Management: floods, earthquake, cyclone and landslides.

**(12 Lecture)**

#### **(b) Environmental Management**

- From Unsustainable to sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, watershed management.
- Resettlement and rehabilitation of people, its problems and concerns.
- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.
- Wasteland reclamation
- Environment protection Act: Issues involved in enforcement of environmental legislation.
- Role of Information Technology in Environment and Human Health.

## UNIT- IV

General background and historical perspective- Historical development and concept of Human Rights, Meaning and definition of Human Rights, Kind and Classification of Human Rights. Protection of Human Rights under the UNO Charter, protection of Human Rights under the Universal Declaration of Human Rights, 1948. Convention on the Elimination of all forms of Discrimination against women. Convention on the Rights of the Child, 1989.

## UNIT- V

Impact of Human Rights norms in India, Human Rights under the Constitution of India, Fundamental Rights under the Constitution of India, Directive Principles of State policy under the Constitution of India, Enforcement of Human Rights in India. Protection of Human Rights under the Human Rights Act, 1993- National Human Rights Commission, State Human Rights Commission and Human Rights court in India. Fundamental Duties under the Constitution of India.

### Reference/ Books Recommended

1. SK Kapoor- Human rights under International Law and Indian Law.
2. HO Agrawal- Internation Law and Human Rights
3. एस.के. कपूर – मानव अधिकार
4. जे.एन. पान्डेय – भारत का संविधान
5. एम.डी. चतुर्वेदी –भारत का संविधान
6. J.N.Pandey - Constitutional Law of India
7. Agarwal K.C. 2001 Environmental Biology, Nidi pub. Ltd. Bikaner
8. Bharucha Erach, the Biodiversity of India, Mapin pub. Ltd. Ahmedabad 380013, India, Email: mapin@icenet.net(R)
9. Bruinner R.C. 1989, Hazardous Waste Incineration. McGraw Hill Inc.480p
10. Clark R.S. Marine pollution, Clanderson press Oxford (TB)
11. Cuningham, W.P.Cooper. T.H.Gorhani, E & Hepworth. M.T,200
12. Dr. A.K.- Environmental Chemistry. Wiley Eastern Ltd.
13. Down to Earth, Center for Science and Environment (R)
14. Gloick, H.P. 1993 Water in crisis. pacific institute for studies in Deve. Environment & Security. Stockholm Eng. Institute. Oxford University, Press. m 473p.
15. Hawkins R.E. Encyclopedia of Indian Natural History, Bombay Natural History Society, Mumbai (R)

16. Heywood, V.H. & Watson, T.T.1995 Global Biodiversity Assessment, Cambridge Univ. Press 1140p
17. Jadhav H. & Bhosale, V.H. 1995 Environmental Protection and Law. Himalaya pub. House, Delhi 284p
18. Mckinney M.L.& School R.M.1996, environmental Science systems & solutions, web enhanced edition, 639p
19. Mhadkar A.K. Matter Hazardous, Techno-Science publication(TB)
20. Miller T.G.Jr. Environment Science, Wadsworth publication co. (TB)
21. Odum E.P.1971, Fundamentals of Ecology, W.B. Saunders Co. USA,574p
22. Rao M.N. & Datta, A.K. 1987, Waste water treatment. Oxford & IBH pub.co.pvt. Ltd 345p
23. Sharma B.K. 2001, Environmental chemistry, Goel pub. House, Meerut
24. Survey of the Environment, The Hidu(M)
25. Townsend C. Harper J. And Michael Begon, Essentials of Ecology, Blackwell Science(TB)
26. Trivedi R.K.Handbook of Environment Laws, Rules, Guidelines, Compliances and Standards, Vol land II, Environment Media(R)
27. Trivedi R.K. and P.K. Goel, Introduction to air pollution, Techno-Science publication (TB)
28. Wanger K.D.1998, Environmental Management. W.B. Saunders Co. Philadelphia, USA 499

<b>Part A: Introduction</b>			
Program: <b>Diploma Course</b>		Class: <b>B.C.A. II Year</b>	Year: <b>2022</b>
1	Course Code	<b>BCA-3P</b>	
2	Course Title	<b>LAB 3: Relational Database Management System</b>	
3	Course Type	<b>Practical</b>	
4	Pre-requisite (if any)	Basic Knowledge of SQL	
5	Course Learning Outcomes (CLO)	<p>At the end of course, Students will be able to:</p> <ul style="list-style-type: none"> <li>• Learn about Database Concepts, Architecture, various Users, Data Models and Data Management which helps them to interact with various Databases.</li> <li>• Develop various Tables and Databases which helps them to develop new Software.</li> <li>• Practice various SQL commands which helps them to generate new relationships among various Tables and Databases which are useful for Software Development.</li> <li>• Familiar about RDBMS Software like Oracle and SQL Server which are used as Backend for Software Development.</li> <li>• Develop new Databases for their Minor and Major Project Development which enhances their Data Storage, Data Accessibility and Data Management.</li> </ul>	
6	<b>Credit Value</b>	<b>Practical: 2</b>	
7	<b>Total Marks</b>	<b>Max. Marks: 100</b>	<b>Min Passing Marks: 33</b>

<b>Part B: Content of the Course</b>	
Total Periods: 30	
<b>Tentative Practical List</b>	<p><b>Note:</b> This is tentative list; the teachers concern can add more program as per requirement.</p> <ol style="list-style-type: none"> <li>1. Design an employee table in Oracle/SQL Server having eid(primary key) ename, edesignation, edoj, edob, eaddress, salary, econtact as fields and answer the following questions : <ol style="list-style-type: none"> <li>a) Insert five records in above created table.</li> <li>b) Display all five records.</li> <li>c) Delete the fourth record.</li> <li>d) Update the third record of field ename as 'hari'.</li> <li>e) Add one new field in the table.</li> </ol> </li> <li>2. Design a salary table Oracle/SQL Server with one primary key and foreign key(employee table) having following fields : Month, working days, deptid, gross, incentive, deduction and net salary. <ol style="list-style-type: none"> <li>a) Insert five records in above created table.</li> </ol> </li> </ol>





- b) Display all five records.
  - c) Use foreign key relation and display records.
  - d) Update the second record of field deptid as 'Sales'.
  - e) Add one new field in the table.
- 3) Create a new user in Oracle/SQL Server.
  - 4) Create a view in Oracle/SQL Server.
  - 5) Create a new table in Oracle/SQL Server and practice for join operation.
  - 6) Create a new user in Oracle/SQL Server and practice for commit and rollback command.
  - 7) Create a new database in Oracle/SQL Server having atleast five tables for Hotel Management System.
  - 8) Create a new database in Oracle/SQL Server having atleast four tables for Covid Vaccination Management System.
  - 9) Create a new database in Oracle/SQL Server having atleast five tables for Library Management System.
  - 10) Create a new table in Oracle/SQL Server and practice for Group by and Order by Clause.
  - 11) Create a new table in Oracle/SQL Server and practice for max(), min(), avg() and count() functions.
  - 12) Create a new table in Oracle/SQL Server and practice for lower(), substr(),trim() and upper() functions.
  - 13) Create a new table in Oracle/SQL Server and practice for unique and check constraint.
  - 14) Create a new table in Oracle/SQL Server and practice for any two date formats.
  - 15) Create a new table in Oracle/SQL Server and practice for using clause.
  - 16) Create a new table in Oracle/SQL Server and practice for having clause with sub queries.
  - 17) Create a new table in Oracle/SQL Server and practice for alias in any table.
  - 18) Create a new table in Oracle/SQL Server and practice for inner and outer join.
  - 19) Create a new table in Oracle/SQL Server and practice for Drop command.
  - 20) Write a PL/SQL program for addition of two numbers .
  - 21) Write a PL/SQL program to find the factorial value of any entered number.
  - 22) Write a PL/SQL program for swapping of two numbers.
  - 23) Write a PL/SQL program to print first ten Natural Numbers.



	<p>24) Write a PL/SQL program to generate Even series upto five digits starting from 2 and sum all the terms.</p> <p>25) Write a PL/SQL program to practice for implicit and explicit cursor.</p>
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<b>Part C - Learning Resource</b>	
Text Books, Reference Books, Other Resources	
<b>Suggested Readings:</b>	
<ol style="list-style-type: none"> <li>1. Database system concept , H. Korth and A. Silberschatz, TMH Publications .</li> <li>2. Data Base Management System, Alexies&amp;Mathews, Vikash publication.</li> <li>3. Data Base Management System, C. J. Date ,Narosha Publication.</li> <li>4. Data Base Management System By James Matin .</li> <li>5. Principles of Database System By Ullman.</li> <li>6. Program Design, Peter Juliff, PHIPublications .</li> <li>7. The Complete Reference, Kevin Loney, Oracle Press.</li> <li>8. SQL, PL/SQL The Programming Language of Oracle, Ivan Bayross , PustakKosh Publication.</li> <li>9. Microsoft SQL Server Management and Administration, Ross, STM Publications .</li> </ol>	
<b>E Resources:</b>	
<ol style="list-style-type: none"> <li>1. SWAYAM url link for DBMS and RDBMS: <a href="https://youtu.be/f6LGtJutWyA">https://youtu.be/f6LGtJutWyA</a></li> <li>2. SWAYAM url link for DBMS and RDBM: <a href="https://youtu.be/loL9Ve2SRwQ">https://youtu.be/loL9Ve2SRwQ</a></li> <li>3. SWAYAM url link for DBMS and RDBMS : <a href="https://swayam.gov.in/courses/4434-data-base-management-system">https://swayam.gov.in/courses/4434-data-base-management-system</a></li> </ol>	

<b>Part D: Assessment and Evaluation</b>		
<b>Suggested Continuous Evaluation Methods:</b>		
Maximum Marks: 100		
Continuous Comprehensive Evaluation (CCE): Not Applicable		
University Exam(UE): 100 Marks		
<b>Internal Assessment:</b>		
Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable

### Declaration

The syllabus of this subject is frame as per the TOR of department of higher education, Chhattisgarh.

1. Dr. H.S. Hota  
Prof. and Head, Dept. of Computer Science and Application
2. Dr. Sanjay Kumar

- Chairman   
- Member 

03.06.2022  
03.06.2022

- Prof. and Head, SoS in Computer Science, Pt. Ravishankar Shukla University,  
Raipur
3. Mr. Jitendra Kumar - Member *Jitendra*  
Asst. Prof., Dept. of Computer Science and Application  
Atal Bihari Vajpayee Vishwavidyalaya, Bilaspur *3/6/22*
  4. Mr. H.S.P. Tonde - Member *H.S.P. Tonde*  
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Sant Gahira Guru University Sarguja, Ambikapur
  5. Dr. Mamta Singh - Member *Mamta Singh*  
Asst. Prof. and Head, Sai College, Bhilai  
Hemchand Yadav Vishwavidyalaya, Durg *3/6/22*
  6. Mr. Sushil Kumar Sahu - Member *Sushil*  
Asst. Prof. and Head, Christ College, Jagdalpur  
Shaheed Mahendra Karma Vishwavidyalaya, Bastar *3/6/2022*
  7. Mr. Vikrant Gupta - Member *Vikrant*  
Prof. and Head, Batmul Ashram College, Salheana  
Shaheed Nand Kumar Patel University, Raigarh
  8. Mr. L.K. Gavel - Member *L.K. Gavel*  
Asst. Prof. and Head, Govt. Ghanshyam Singh Gupt, PG College, Balod  
Hemchand Yadav Vishwavidyalaya, Durg *03/06/22*
  9. Dr. Anil Kumar Sharma - Member *Anil*  
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  10. Mr. Vishwnath Tamrakar - Member *Vishwnath*  
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Pt. Ravishankar Shukla University, Raipur *03/06/22*
  11. Ms. Anjeeta Kujur - Member *Anjeeta*  
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Sant Gahira Guru University Sarguja, Ambikapur *03/06/22*
  12. Mr. Suresh Kumar Thakur - Member *Suresh*  
Asst. Prof. and Head, Indira Gandhi Govt. PG College, Vaishali Nagar  
Hemchand Yadav Vishwavidyalaya, Durg *03/06/22*
  13. Dr. Ugrasen Suman - Member  
Prof. and Head, Dept. of Computer Science  
Devi Ahila Vishwavidyalaya, Indore (Present Online)

Date: 03.06.2022

**Part A: Introduction**

Program: <b>Diploma Course</b>		Class: <b>B.C.A. II Year</b>	Year: <b>2022</b>	Session: <b>2022-2023</b>
1	Course Code	<b>BCA-4P</b>		
2	Course Title	<b>LAB 4: Web Technology</b>		
3	Course Type	<b>Practical</b>		
4	Pre-requisite (if any)	Theoretical knowledge of Web Technology		
5	Course Learning Outcomes (CLO)	At the end of this course, the students will be able to: <ul style="list-style-type: none"> <li>• Analyze a web page and identify its elements and attributes.</li> <li>• Create web pages using HTML, CSS, JAVASCRIPT, XHTML</li> <li>• Build dynamic web pages using JavaScript (Client side programming).</li> <li>• Create XML documents and Schemas.</li> <li>• Build interactive web applications using, PHP, AJAX.</li> <li>• Handling Database using MYSQL</li> </ul>		
6	Credit Value	<b>Practical: 2</b>		
7	Total Marks	<b>Max. Marks: 100</b>	<b>Min Passing Marks : 33</b>	

**Part B: Content of the Course**

Total Periods: 30

<b>Tentative Practical List</b>	<b>Note:</b> This is tentative list; the teachers concern can add more program as per requirement.																																	
	<p><b>HTML</b></p> <p>1. Write an HTML program to create the following table:</p> <table border="1"> <thead> <tr> <th>Class</th> <th>Subject 1</th> <th>Subject 2</th> <th>Subject 3</th> </tr> </thead> <tbody> <tr> <td>BCA-I</td> <td>Visual Basic</td> <td>PC Software</td> <td>Electronics</td> </tr> <tr> <td>BCA-II</td> <td>C++</td> <td>DBMS</td> <td>English</td> </tr> <tr> <td>BCA-III</td> <td>Java</td> <td>Multimedia</td> <td>CSA</td> </tr> </tbody> </table> <p>2. Write an HTML program to create the following lists:</p> <ul style="list-style-type: none"> <li>• C</li> <li>• C++</li> <li>• Fortran</li> <li>• COBOL</li> </ul> <p>3. Write an HTML program to create the following lists:</p> <ol style="list-style-type: none"> <li>1. Java</li> <li>2. Visual Basic</li> <li>3. Basic</li> <li>4. COBOL</li> </ol> <p>4. Write an HTML program to demonstrate hyper linking between two web pages.</p> <p>5. Create a marquee &amp; also insert an image.</p> <p>6. Write an HTML program to create frame in HTML with 3 columns (width= 30%, 30%, 40%).</p> <p>7. Write an HTML program to create a webpage with a blue background and print the following text with white background.</p> <p>8. Write an HTML program to create the following table:</p> <table border="1"> <thead> <tr> <th>Course</th> <th>OC</th> <th>BC</th> <th>MB</th> <th>SC/ST</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Computer Science</td> <td>9</td> <td>18</td> <td>5</td> <td>5</td> <td>37</td> </tr> <tr> <td>Commerce</td> <td>14</td> <td>25</td> <td>6</td> <td>5</td> <td>50</td> </tr> </tbody> </table>	Class	Subject 1	Subject 2	Subject 3	BCA-I	Visual Basic	PC Software	Electronics	BCA-II	C++	DBMS	English	BCA-III	Java	Multimedia	CSA	Course	OC	BC	MB	SC/ST	Total	Computer Science	9	18	5	5	37	Commerce	14	25	6	5
Class	Subject 1	Subject 2	Subject 3																															
BCA-I	Visual Basic	PC Software	Electronics																															
BCA-II	C++	DBMS	English																															
BCA-III	Java	Multimedia	CSA																															
Course	OC	BC	MB	SC/ST	Total																													
Computer Science	9	18	5	5	37																													
Commerce	14	25	6	5	50																													

**Grand Total**

**87**

9. Write an HTML program to create the following table:

Maruti		Tata		Ford	
Model	Price	Model	Price	Model	Price
Maruti 800	2 Lac	Sumo	2 Lac	Icon	5 Lac
Omni	3 Lac	Scorpio	3 Lac	Gen	2 Lac

10. Write an HTML program to create the following table:

Pandit Ravishankar Shukla University		
Name	Roll No.	Class
Rahul	40	BCA-I
Preeti	85	BCA-I
Priya	74	BCA-I
Richa	95	BCA-I

11. Write an HTML program to create the following table:

Students Record		
Name	Subject	Marks
Arun	Java	70
	C	80
Ashish	Java	75
	C	69

12. Write an HTML program to create the following table and also insert an image in the webpage.

Subject	Max	Min	Obtain
Java	100	33	75
Multimedia	100	33	70
Operating System	100	33	68
C++	100	33	73

13. Write an HTML program to create the following table:

Name		Rahul	
Roll No.		101	
Subject	Max	Min	Obtain
Java	100	33	75
Multimedia	100	33	70

14. Write an HTML program to create a form as the following:

Enter Name:

Enter Roll No. :

Enter Age:

Enter DOB:

15. Write an HTML program to create the following webpage with background and the following text:

16. Write an HTML program to create the following form:

User Name :

Password :

When user types characters in a password field, The browser displays asterisks or bullets instead of character.

17. Write a HTML Program to create Student Registration Form

18. Write a HTML Program to create Contact Form

19. Write a HTML Program to insert Audio & Video in HTML

20. Write the HTML coding for the following equations:



21. Write the HTML code to display the following:

- Actors
  - Bruce Wills
  - Gerand Butler
  - Vin Diesel
  - Bradd Pitt
  - Paul Walker
  - Jason Statham
- Actress
  - Julia Roberts
  - Angelina Jolie
  - Kate Wins let
  - Cameron Diaz

22. Write the HTML code to display the following:

1. Cricket Players
  - A. Batsman
    - i. Sachin Tendulkar
    - ii. Rahul Dravid
    - iii. Virendra Sehwag
  - B. Bowlers
    - i. Kumble
    - ii. Zaheer Khan
    - iii. Balaji
  - C. Spinner
    - i. Harbhajan
    - ii. Ravindra Jadeja
    - iii. Kartik

### JavaScript

1. Create a script using for loop to prime number between 1 and 50.
2. Write a script to get the largest value in an array.
3. Write a function to calculate the factorial of a number (a non-negative integer).
4. Write a script to demonstrate data validation.
5. Write a program to print date using JavaScript.
6. Write a program to Sum and Multiply two numbers using Javascript.



### DHTML

1. Create a web page which shows the changes of header dynamically.
2. Create a webpage which explains the use of relative positioning.
3. Display an alert box to alert the x and y coordinates of the cursor.

### PHP

1. Create a script using for loop to all integers between 0 and 30 and display the total.
2. Create a script to construct the following pattern, using nested for loop exercises.
3. Write a PHP script to get the largest key in an array.
4. Write a function to calculate the factorial of a number (a non-negative integer).
5. Write a PHP script to check string for palindrome.

### MySQL

#### 1. Create the following table in MySQL:

College (cname, city, address, cphone)  
Staffjoins (sid, cname, dept, doj, post, salary)  
Staffs (sid, sname, address, scontacts)  
Teaching (sid, class, paprid, fsession, tsession)  
Subject (paperid, subject, paper, papername)

1. List the name and post of teacher teaching computer subject.
2. List the name and city of all staffs working in your college.
3. List the name and city all staffs working in your college who earn more than 15000.
4. Find the staff whose date of joining is 2005.
5. Find the staffs whose names start with 'M' or 'R' and 'A' and/or 7 character long.
6. Modify the database so that staffN1 now work in C2 college .
7. List maximum, average, minimum salary of each college.
8. Acquire detail of staffs by name in a college or each college.
9. List names of staffs in ascending order according to salary who are working in all colleges.
10. Find the staffs that earn a higher salary who earn greater than average salary of their college.

#### 2. Create the following table MySQL:

Enrollment (enrollno, name, gender, DOB, address, phone)  
Admission (adno, enrollno, course, yearsem, date, cname)  
Feestructure (course\_yearsem, fee)  
Payment (billno, admno, amount, pdate, purpose)

1. Get full detail of all students who took admission this year class wise.
2. Get detail of students who took admission in sai colleges.
3. Calculate the total amount of fees collected in this session.
4. List the student who have not payed full fee in your colleges.
5. List the number of admission in your college in every year.
6. List the students in colleges in your city and also live in your city.

#### 3. Create the following table MySQL:

Subject (paperid, subject, paper, papername)  
test(paperid, tdate, max, min)  
score(rollno, paperid, marks, attendance)  
students(admno, rollno, class, yearsem)



- |  |   |
|--|---|
|  | <ol style="list-style-type: none"><li>1. List roll no of students who were present in a paper of a subject.</li><li>2. List all roll numbers who have passed in first division.</li><li>3. List all students in BCA-II who have scored higher than average in your college.</li><li>4. List the highest score</li></ol> |
|--|---|

### Part C - Learning Resources

Text Books, Reference Books, Other Resources

#### Suggested Readings:

1. Xavier, C, "Web Technology and Design", New Age International.
2. Ivan Bayross, "HTML, DHTML, Java Script, Perl & CGI", BPB Publication.
3. Ramesh Bangia, "Internet and Web Design", New Age International.
4. Ullman, "PHP for the Web: Visual Quick Start Guide", Pearson Education.
5. Jim Converse & Joyce Park, "PHP & MySQL Bible", Wiley India Publication
6. "Internet and Internet Engineering", Daniel Minoli, TMH.
7. Chuckmusiano & Bill Kenndy, O Reilly, HTML The Definite Guide"
8. Joseph Schmuller, Dynamic HTML, BPB, 2000.
9. Deitel, Deitel, Goldberg, "Internet & World Wide Web How to Program", Third Edition, Pearson Education, 2006.
10. Raj Kamal, "Internet and Web Technologies", Tata McGraw-Hill.

#### E Resources:

1. HTML different topics from Javatpoint  
<https://www.javatpoint.com/html-tutorial/>
2. JavaScript different topics from Javatpoint  
<https://www.javatpoint.com/javascript-tutorial>
3. JavaScript different topics from Javatpoint  
<https://www.javatpoint.com/php-tutorial>
4. DHTML different topics from Javatpoint  
<https://www.javatpoint.com/dhtml>
5. PHP different topics from W3Schools  
<https://www.w3schools.com/php/>
6. PHP different topics from W3Schools  
<https://www.w3schools.com/html/>
7. MySQL different topics from W3Schools  
<https://www.w3schools.com/mysql/default.asp>
8. MySQL different topics from Javatpoint  
<https://www.javatpoint.com/mysql-tutorial>





**Part A: Introduction**

Program: <b>Diploma Course</b>		Class: <b>B.C.A. II Year</b>	Year: <b>2022</b>	Session: <b>2022-2023</b>
1	Course Code	<b>BCA-4P</b>		
2	Course Title	<b>LAB 4: Web Technology</b>		
3	Course Type	<b>Practical</b>		
4	Pre-requisite (if any)	Theoretical knowledge of Web Technology		
5	Course Learning Outcomes (CLO)	At the end of this course, the students will be able to: <ul style="list-style-type: none"> <li>Analyze a web page and identify its elements and attributes.</li> <li>Create web pages using HTML, CSS, JAVASCRIPT, XHTML</li> <li>Build dynamic web pages using JavaScript (Client side programming).</li> <li>Create XML documents and Schemas.</li> <li>Build interactive web applications using, PHP, AJAX.</li> <li>Handling Database using MYSQL</li> </ul>		
6	Credit Value	<b>Practical: 2</b>		
7	Total Marks	<b>Max. Marks: 100</b>	<b>Min Passing Marks : 33</b>	

**Part B: Content of the Course**

Total Periods: 30

**Tentative Practical List**

**Note:** This is tentative list; the teachers concern can add more program as per requirement.

**HTML**

1. Write an HTML program to create the following table:

Class	Subject 1	Subject 2	Subject 3
BCA-I	Visual Basic	PC Software	Electronics
BCA-II	C++	DBMS	English
BCA-III	Java	Multimedia	CSA

2. Write an HTML program to create the following lists:

- C
- C++
- Fortran
- COBOL

3. Write an HTML program to create the following lists:

- Java
- Visual Basic
- Basic
- COBOL

4. Write an HTML program to demonstrate hyper linking between two web pages.

5. Create a marquee & also insert an image.

6. Write an HTML program to create frame in HTML with 3 columns (width= 30%, 30%, 40%).

7. Write an HTML program to create a webpage with a blue background and print the following text with white background.

8. Write an HTML program to create the following table:

Course	OC	BC	MB	SC/ST	Total
Computer Science	9	18	5	5	37
Commerce	14	25	6	5	50

**Grand Total**

**87**

9. Write an HTML program to create the following table:

Maruti		Tata		Ford	
Model	Price	Model	Price	Model	Price
Maruti 800	2 Lac	Sumo	2 Lac	Icon	5 Lac
Omni	3 Lac	Scorpio	3 Lac	Gen	2 Lac

10. Write an HTML program to create the following table:

Pandit Ravishankar Shukla University		
Name	Roll No.	Class
Rahul	40	BCA-I
Preeti	85	BCA-I
Priya	74	BCA-I
Richa	95	BCA-I

11. Write an HTML program to create the following table:

Students Record		
Name	Subject	Marks
Arun	Java	70
	C	80
Ashish	Java	75
	C	69

12. Write an HTML program to create the following table and also insert an image in the webpage.

Subject	Max	Min	Obtain
Java	100	33	75
Multimedia	100	33	70
Operating System	100	33	68
C++	100	33	73

13. Write an HTML program to create the following table:

<b>Name</b>	Rahul		
<b>Roll No.</b>	101		
<b>Subject</b>	<b>Max</b>	<b>Min</b>	<b>Obtain</b>
Java	100	33	75
Multimedia	100	33	70

14. Write an HTML program to create a form as the following:

Enter Name:

Enter Roll No. :

Enter Age:

Enter DOB:

15. Write an HTML program to create the following webpage with background and the following text:

16. Write an HTML program to create the following form:

User Name :

Password :

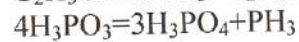
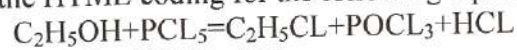
When user types characters in a password field. The browser displays asterisks or bullets instead of character.

17. Write a HTML Program to create Student Registration Form

18. Write a HTML Program to create Contact Form

19. Write a HTML Program to insert Audio & Video in HTML

20. Write the HTML coding for the following equations:



21. Write the HTML code to display the following:

- Actors
  - Bruce Wills
  - Gerand Butler
  - Vin Diesel
  - Bradd Pitt
  - Paul Walker
  - Jason Statham
- Actress
  - Julia Roberts
  - Angelina Jolie
  - Kate Wins let
  - Cameron Diaz

22. Write the HTML code to display the following:

I. Cricket Players

A. Batsman

- i. Sachin Tendulkar
- ii. Rahul Dravid
- iii. Virendra Schwag

B. Bowlers

- i. Kumble
- ii. Zaheer Khan
- iii. Balaji

C. Spinner

- i. Harbhajan
- ii. Ravindra Jadeja
- iii. Kartik

### JavaScript

1. Create a script using for loop to prime number between 1 and 50.
2. Write a script to get the largest value in an array.
3. Write a function to calculate the factorial of a number (a non-negative integer).
4. Write a script to demonstrate data validation.
5. Write a program to print date using JavaScript.
6. Write a program to Sum and Multiply two numbers using Javascript.

### DHTML

1. Create a web page which shows the changes of header dynamically.
2. Create a webpage which explains the use of relative positioning.
3. Display an alert box to alert the x and y coordinates of the cursor.

### PHP

1. Create a script using for loop to all integers between 0 and 30 and display the total.
2. Create a script to construct the following pattern, using nested for loop exercises.
3. Write a PHP script to get the largest key in an array.
4. Write a function to calculate the factorial of a number (a non-negative integer).
5. Write a PHP script to check string for palindrome.

### MySQL

#### 1. Create the following table in MySQL:

College (cname, city, address, cphone)  
Staffjoins (sid, cname, dept, doj, post, salary)  
Staffs (sid, sname, saddress, scontacts)  
Teaching (sid, class, paprid, fsession, tsession)  
Subject (paperid, subject, paper, papername)

1. List the name and post of teacher teaching computer subject.
2. List the name and city of all staffs working in your college.
3. List the name and city all staffs working in your college who earn more than 15000.
4. Find the staff whose date of joining is 2005.
5. Find the staffs whose names start with 'M' or 'R' and 'A' and/or 7 character long.
6. Modify the database so that staffN1 now work in C2 college .
7. List maximum, average, minimum salary of each college.
8. Acquire detail of staffs by name in a college or each college.
9. List names of staffs in ascending order according to salary who are working in all colleges.
10. Find the staffs that earn a higher salary who earn greater than average salary of their college.

#### 2. Create the following table MySQL:

Enrollment (enrollno, name, gender, DOB, address, phone)  
Admission (adno, enrollno, course, yearsem, date, cname)  
Feestucture (course\_yearsem, fee)  
Payment (billno, admno, amount, pdate, purpose)

1. Get full detail of all students who took admission this year class wise.
2. Get detail of students who took admission in sai colleges.
3. Calculate the total amount of fees collected in this session.
4. List the student who have not payed full fee in your colleges.
5. List the number of admission in your college in every year.
6. List the students in colleges in your city and also live in your city.

#### 3. Create the following table MySQL:

Subject (paperid, subject, paper, papername)  
test(paperid, tdate, max, min)  
score(rollno, paperid, marks, attendance)  
students(admno, rollno, class, yearsem)

1. List roll no of students who were present in a paper of a subject.
2. List all roll numbers who have passed in first division.
3. List all students in BCA-II who have scored higher than average in your college.
4. List the highest score

### Part C - Learning Resources

Text Books, Reference Books, Other Resources

#### Suggested Readings:

1. Xavier, C, "Web Technology and Design", New Age International.
2. Ivan Bayross, "HTML, DHTML, Java Script, Perl & CGI", BPB Publication.
3. Ramesh Bangia, "Internet and Web Design", New Age International.
4. Ullman, "PHP for the Web: Visual Quick Start Guide", Pearson Education.
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6. "Internet and Internet Engineering", Daniel Minoli, TMH.
7. Chuckmusiano & Bill Kenndy, O Reilly, HTML The Definite Guide"
8. Joseph Schmuller, Dynamic HTML, BPB, 2000.
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10. Raj Kamal, "Internet and Web Technologies", Tata McGraw-Hill.


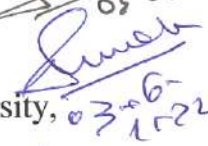


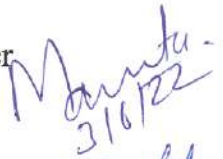
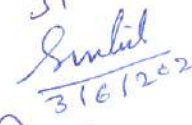

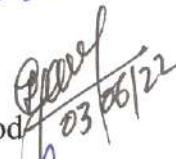
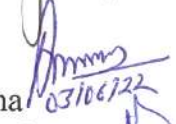
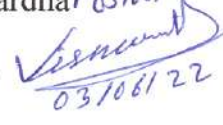
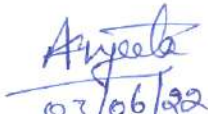
#### E Resources:

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2. JavaScript different topics from Javatpoint  
<https://www.javatpoint.com/javascript-tutorial>
3. JavaScript different topics from Javatpoint  
<https://www.javatpoint.com/php-tutorial>
4. DHTML different topics from Javatpoint  
<https://www.javatpoint.com/dhtml>
5. PHP different topics from W3Schools  
<https://www.w3schools.com/php/>
6. PHP different topics from W3Schools  
<https://www.w3schools.com/html/>
7. MySQL different topics from W3Schools  
<https://www.w3schools.com/mysql/default.asp>
8. MySQL different topics from Javatpoint  
<https://www.javatpoint.com/mysql-tutorial>

<b>Part D: Assessment and Evaluation</b>		
<b>Suggested Continuous Evaluation Methods:</b>		
Maximum Marks: 100		
Continuous Comprehensive Evaluation (CCE): Not Applicable		
University Exam(UE): 100 Marks		
<b>Internal Assessment:</b>		
Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable

### Declaration

The syllabus of this subject is frame as per the TOR of department of higher education, Chhattisgarh.

- |  |   |          |   |
|--|---|----------|---|
| 1. Dr. H.S. Hota<br>Prof. and Head, Dept. of Computer Science and Application  | - | Chairman | <br>03.06.22   |
| 2. Dr. Sanjay Kumar<br>Prof. and Head, SoS in Computer Science, Pt. Ravishankar Shukla University, Raipur                                    | - | Member   | <br>03.06.22   |
| 3. Mr. Jitendra Kumar<br>Asst. Prof., Dept. of Computer Science and Application<br>Atal Bihari Vajpayee Vishwavidyalaya, Bilaspur            | - | Member   | <br>3/6/22     |
| 4. Mr. H.S.P. Tonde<br>Asst. Prof. and Head, Dept. of Computer Science,<br>Sant Gahira Guru University Sarguja, Ambikapur                    | - | Member   | <br>3/6/22    |
| 5. Dr. Mamta Singh<br>Asst. Prof. and Head, Sai College, Bhilai<br>Hemchand Yadav Vishwavidyalaya, Durg                                      | - | Member   | <br>3/6/22   |
| 6. Mr. Sushil Kumar Sahu<br>Asst. Prof. and Head, Christ College, Jagdalpur<br>Shaheed Mahendra Karma Vishwavidyalaya, Bastar                | - | Member   | <br>3/6/22   |
| 7. Mr. Vikrant Gupta<br>Prof. and Head, Batmul Ashram College, Salheana<br>Shaheed Nand Kumar Patel University, Raigarh                      | - | Member   | <br>3/6/22   |
| 8. Mr. L.K. Gavel<br>Asst. Prof. and Head, Govt. Ghanshyam Singh Gupt, PG College, Balod<br>Hemchand Yadav Vishwavidyalaya, Durg             | - | Member   | <br>03/06/22 |
| 9. Dr. Anil Kumar Sharma<br>Asst. Prof. and Head, A.P.S.G.M.N.S, Govt. PG College, Kawardha<br>Hemchand Yadav Vishwavidyalaya, Durg          | - | Member   | <br>03/06/22 |
| 10. Mr. Vishwnath Tamrakar<br>Asst. Prof. and Head, Sant Guru Ghasidas Govt. PG College, Kurud,<br>Pt. Ravishankar Shukla University, Raipur | - | Member   | <br>03/06/22 |
| 11. Ms. Anjeeta Kujur<br>Asst. Prof. and Head, Govt. R.B.R.N.E.S. PG College, Jashpur  | - | Member   | <br>03/06/22 |

- Sant Gahira Guru University Sarguja, Ambikapur
12. Mr. Suresh Kumar Thakur - Member <sup>Suresh</sup> <sub>03/06/22</sub>  
Asst. Prof. and Head, Indira Gandhi Govt. PG College, Vaishali Nagar  
Hemchand Yadav Vishwavidyalaya, Durg
13. Dr. Ugrasen Suman - Member  
Prof. and Head, Dept. of Computer Science (Present Online)  
Devi Ahila Vishwavidyalaya, Indore

Date: 03.06.2022

<b>Part A: Introduction</b>			
Program: <b>Diploma Course</b>		Class: <b>B.C.A. II Year</b>	Year: <b>2022</b>
		Session: <b>2022-2023</b>	
1.	Course Code	<b>BCA-8T</b>	
2.	Course Title	<b>Numerical Analysis</b>	
3.	Course Type	<b>Theory</b>	
4.	Pre-requisite (if any)	Knowledge of basic mathematics	
5.	Course Learning Outcomes (CLO)	<p>At the end of this course, the students will be able to:</p> <ul style="list-style-type: none"> <li>• Obtain numerical solutions of algebraic and transcendental equations.</li> <li>• Find out numerical solutions of system of linear equations and check the accuracy of the solutions.</li> <li>• Learn about various interpolating and extrapolating methods.</li> <li>• Solve initial and boundary value problems in differential equations using numerical methods.</li> <li>• Apply various numerical methods in real life problems.</li> </ul>	
6.	Credit Value	<b>Theory : 6</b>	
7.	Total Marks	<b>Max. Marks: 25 +75</b>	<b>Min Passing Marks : 33</b>

<b>Part B: Content of the Course</b>		
Total Periods: 90		
Unit	Topics	No. of Periods
I.	<b>Numerical Methods for Solving Algebraic and Transcendental Equations:</b> Round-off error and computer arithmetic, Local and global truncation errors, Algorithms and convergence; Bisection method, False position method, Fixed point iteration method, Newton's method and secant method for solving equations.	18
II.	<b>Numerical Methods for Solving Linear Systems:</b> Partial and scaled partial pivoting, Lower and upper triangular (LU) decomposition of a matrix and its applications, Thomas method for tridiagonal systems; Gauss-Jacobi, Gauss-Seidel and successive over-relaxation (SOR) methods.	18
III.	<b>Interpolation:</b> Lagrange and Newton interpolations, Piecewise linear interpolation, Cubic spline interpolation, Finite difference operators, Gregory-Newton forward and backward difference interpolations.	18
IV.	<b>Numerical Differentiation and Integration:</b> First order and higher order approximation for first derivative, Approximation for second derivative; Numerical integration: Trapezoidal rule, Simpson's rules and error analysis, Bulirsch-Stoer extrapolation methods, Richardson extrapolation.	18
V.	<b>Initial and Boundary Value Problems of Differential Equations:</b> Euler's method, Runge-Kutta methods, Higher order one step method, Multi-step methods; Finite difference method, Shooting method, Real life examples: Google search engine, 1D and 2D simulations, Weather forecasting.	18
<b>Keywords:</b> Error, Decomposition, Interpolation, Differentiation, Integration, Higher order, Simulation.		





Part C - Learning Resource

Text Books, Reference Books, Other Resources

**Suggested Readings:**

1. Brian Bradie (2006), A Friendly Introduction to Numerical Analysis. Pearson.
2. C. F. Gerald & P. O. Wheatley (2008). Applied Numerical Analysis (7th edition), Pearson Education, India.
3. F. B. Hildebrand (2013). Introduction to Numerical Analysis: (2nd edition). Dover Publications.
4. M. K. Jain, S. R. K. Iyengar & R. K. Jain (2012). Numerical Methods for Scientific and Engineering Computation (6th edition). New Age International Publishers.
5. Robert J. Schilling & Sandra L. Harris (1999). Applied Numerical Methods for Engineers Using MATLAB and C. Thomson-Brooks/Cole.

**E Resources:**

- Topics Related to Numerical Analysis from SWAYAM/NPTEL
  1. Introduction  
[https://onlinecourses.swayam2.ac.in/cec20\\_ma11/preview](https://onlinecourses.swayam2.ac.in/cec20_ma11/preview)  
[https://onlinecourses.nptel.ac.in/noc19\\_ma21/preview](https://onlinecourses.nptel.ac.in/noc19_ma21/preview)
  2. Introduction to error analysis and linear systems  
<https://www.youtube.com/watch?v=cgzqVmvqtQ&list=PLq-Gm0yRYwTguDcfylj1ZicXxzdZCAr5S&index=2>
  3. LU decomposition  
[https://www.youtube.com/watch?v=1g0G\\_kjA560&list=PLq-Gm0yRYwTguDcfylj1ZicXxzdZCAr5S&index=4](https://www.youtube.com/watch?v=1g0G_kjA560&list=PLq-Gm0yRYwTguDcfylj1ZicXxzdZCAr5S&index=4)
  4. Jacobi and Gauss Seidel methods  
<https://www.youtube.com/watch?v=K193avJMCd4&list=PLq-Gm0yRYwTguDcfylj1ZicXxzdZCAr5S&index=5>
  5. Playlist  
<https://www.youtube.com/channel/UCqpVOOZS6-OFQaPKWBZLKJQ>  
[https://www.youtube.com/watch?v=TWAN\\_T66Cps&list=PLq-Gm0yRYwTguDcfylj1ZicXxzdZCAr5S](https://www.youtube.com/watch?v=TWAN_T66Cps&list=PLq-Gm0yRYwTguDcfylj1ZicXxzdZCAr5S) (NPTEL)

**Part D: Assessment and Evaluation**

**Suggested Continuous Evaluation Methods:**

Maximum Marks: 100

Continuous Comprehensive Evaluation (CCE): 25 Marks

University Exam(UE): 75 Marks

**Internal Assessment:**

Continuous

Comprehensive Evaluation  
(CCE)

Class Test/Assignment/Presentation

25 Marks

### Declaration

The syllabus of this subject is framed as per the TOR of department of higher education, Chhattisgarh.

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Shaheed Mahendra Karma Vishwavidyalaya, Bastar
7. Mr. Vikrant Gupta - Member  
Prof. and Head, Batmul Ashram College, Salheana  
Shaheed Nand Kumar Patel University, Raigarh
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Pt. Ravishankar Shukla University, Raipur
11. Ms. Anjeeta Kujur - Member  
Asst. Prof. and Head, Govt. R.B.R.N.E.S. PG College, Jashpur  
Sant Gahira Guru University Sarguja, Ambikapur
12. Mr. Suresh Kumar Thakur - Member  
Asst. Prof. and Head, Indira Gandhi Govt. PG College, Vaishali Nagar  
Hemchand Yadav Vishwavidyalaya, Durg
13. Dr. Ugrasen Suman - Member  
Prof. and Head, Dept. of Computer Science  
Devi Ahila Vishwavidyalaya, Indore  
(Present Online)

DATE: 03.06.2022

<b>Part A: Introduction</b>			
Program: <b>Diploma Course</b>		Class: <b>B.C.A. II Year</b>	Year: <b>2022</b>
		Session: <b>2022-2023</b>	
1.	Course Code	<b>BCA-9T</b>	
2.	Course Title	<b>Operating System</b>	
3.	Course Type	<b>Theory</b>	
4.	Pre-requisite (if any)	<b>No</b>	
5.	Course Learning Outcomes (CLO)	<p>At the end of this course, the students will be able to:</p> <ul style="list-style-type: none"> <li>• Describe the important computer system resources and the role of operating system in their management policies and algorithms.</li> <li>• To understand various functions, structures and history of operating systems and should be able to specify objectives of modern operating systems and describe how operating systems have evolved over time.</li> <li>• Understanding of design issues associated with operating systems.</li> <li>• Understand various process management concepts including scheduling, synchronization, and deadlocks.</li> <li>• To have a basic knowledge about multithreading.</li> <li>• To understand concepts of memory management including virtual memory.</li> <li>• To have sound knowledge of various types of operating systems including Unix and Android.</li> <li>• Describe the functions of a contemporary operating system with respect to convenience, efficiency, and the ability to evolve.</li> </ul>	
6.	Credit Value	<b>Theory : 6</b>	
7.	Total Marks	<b>Max. Marks: 25 +75</b>	<b>Min Passing Marks : 33</b>

<b>Part B: Content of the Course</b>		
Total Periods: 90		
Unit	Topics	No. of Periods
I.	<b>Introduction to Operating System:</b> What is Operating System? History and Evolution of OS, Basic OS functions, Resource Abstraction, Types of Operating Systems– Multiprogramming Systems, Batch Systems, Time Sharing Systems; Operating Systems for Personal Computers, Workstations and Hand-held Devices, Process Control & Real time Systems.	18
II.	<b>Operating System Organization and Process Characterization:</b> Processor and User Modes, Kernels, System Calls and System Programs, System View of the Process and Resources, Process Abstraction, Process Hierarchy, Threads, Threading Issues, Thread Libraries; Process Scheduling, Non-Pre-emptive and Pre-emptive Scheduling Algorithms.	18
III.	<b>Process Management (Deadlock):</b> Deadlock, Deadlock Characterization, Necessary and Sufficient Conditions for Deadlock, Deadlock Handling Approaches: Deadlock Prevention, Deadlock Avoidance and Deadlock Detection and Recovery. <b>Inter Process Communication and Synchronization:</b> Concurrent and Dependent Processes, Critical Section, Semaphores, Methods for Inter-process Communication; Process Synchronization, Classical Process Synchronization Problems: Producer-Consumer, Reader-Writer.	18

IV.	<b>Memory Management:</b> Physical and Virtual Address Space; Memory Allocation Strategies– Fixed and -Variable Partitions, Paging, Segmentation, Virtual Memory.	12
V.	<b>Introduction to Android Operating System:</b> Introduction to Android Operating System, Android Development Framework, Android Application Architecture, Android Process Management and File System, Small Application Development using Android Development Framework.	12
<b>Keywords:</b> Operating System (OS), Process, Kernel, Threads, Deadlock, Critical Section, Semaphores.		

### Part C - Learning Resources

Text Books, Reference Books, Other Resources

#### Suggested Readings:

1. A Silberschatz, P.B. Galvin, G. Gagne, Operating Systems Concepts, 8th Edition, John Wiley Publications 2008.
2. A.S. Tanenbaum, Modern Operating Systems, 3rd Edition, Pearson Education 2007.
3. G. Nutt, Operating Systems: A Modern Perspective, 2nd Edition Pearson Education
4. 1997.
5. W. Stallings, Operating Systems, Internals & Design Principles 2008 5th Edition, Prentice Hall of India.
6. M. Milenkovic, Operating Systems- Concepts and design, Tata McGraw Hill 1992.

#### E Resources:

1. **SWAYAM/NPTEL - IITD**  
<https://youtube.com/playlist?list=PLsYlUObW5M3CAGT6OdubyH6FztKfJCcFB>
2. **NPTEL - IIT Madras**  
[https://youtube.com/playlist?list=PL3-wYxht4yCjpcfUDz-TgD\\_ainZ2K3MUZ](https://youtube.com/playlist?list=PL3-wYxht4yCjpcfUDz-TgD_ainZ2K3MUZ)
3. **Coursera:**  
Introduction:  
<https://www.coursera.org/specializations/codio-introduction-operating-systems?>  
Memory Management:  
<https://www.coursera.org/learn/codio-intro-to-operating-systems-2-memory-management?specialization=codio-introduction-operating-systems>
4. **w3shool.com**  
<https://www.w3schools.in/operating-system/intro#:~:text=An%20operating%20system%20falls%20under,networking%20hardware%20C%20printers%20etc.>
5. **gatevidyalay.com**  
<https://www.gatevidyalay.com/operating-system/>
6. **javatpoint.com**  
<https://www.javatpoint.com/os-tutorial>

**Part D: Assessment and Evaluation**

**Suggested Continuous Evaluation Methods:**

Maximum Marks: 100

Continuous Comprehensive Evaluation (CCE): 25 Marks

University Exam(UE): 75 Marks

**Internal Assessment:**

Continuous Comprehensive  
Evaluation (CCE)

Class Test/Assignment/Presentation

25 Marks



## Declaration

The syllabus of this subject is framed as per the TOR of department of higher education, Chhattisgarh.

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(Present Online)

Date: 03.06.2022

Part A: Introduction			
Program: <b>Diploma Course</b>		Class: <b>B.C.A. II Year</b>	Year: <b>2022</b> Session: <b>2022-2023</b>
1.	Course Code	<b>BCA-10T</b>	
2.	Course Title	<b>Relational Database Management System</b>	
3.	Course Type	<b>Theory</b>	
4.	Pre-requisite (if any)	No	
5.	Course Learning Outcomes (CLO)	<p>At the end of this course, the students will be able to:</p> <ul style="list-style-type: none"> <li>● Learn about Database Concepts, Architecture, various Users, Data Models and Data Management which helps them to interact with various Databases.</li> <li>● Develop various Tables and Databases which helps them to develop new Software.</li> <li>● Practice various SQL commands which help them to generate new relationships among various Tables and Databases which are useful for Software Development.</li> <li>● Familiar about RDBMS Software like Oracle and SQL Server which are used as Backend for Software Development.</li> <li>● Develop new Databases for their Minor and Major Project Development which enhances their Data Storage, Data Accessibility and Data Management.</li> </ul>	
6.	Credit Value	<b>Theory : 4</b>	
7.	Total Marks	<b>Max Marks: 25+75</b>	<b>Min Passing Marks : 33</b>

Part B: Content of the Course		
Total Periods: 60		
Unit	Topics	No. of Periods
I.	<b>Overview of Database Management:</b> Data, Information and Knowledge, Data Processing versus Data Management, File Oriented Approach verses Database Oriented Approach, Data Independence, Database Administration Roles, Overview of Database, DBMS Architecture, Different kinds of DBMS users, Introduction to Data Dictionary. Data Models: Network Model, Relational Model, Hierarchical Model. Database Languages: DDL, DML, DCL, And TCL. Structured Query Language :Basic Data Types, Commands : Create, Insert, Select, Delete, Truncate , Drop, Alter, Grant ,Revoke, Commit, Rollback, Queries on Multiple Relation, Join Operation, String Operation, Set Operation, Grouping, Nested Subqueries.	12
II.	<b>Concepts of Database Management System :</b> Definition of Tables, Cardinality relationships in a Database, Constraints in a Database, Entity, Attributes, Strong and weak entities, ER-Diagram, Symbols and Implementation, Concept of keys: Candidate key, Primary key, Alternate key, Foreign key, Case studies of ER modeling Generalization, Specialization and Aggregation. Converting an ER model into relational Schema. Extended ER features.	12

	Schema. Extended ER features.	
III.	<b>Relational Database Design:</b> Normalization concept in logical model, Pitfalls in database design, Functional dependencies, Join dependencies, Natural Join, Normal forms (1NF, 2NF, 3NF). Boyce Codd Normal form, Decomposition, Multi-Valued Dependencies, 4NF, 5NF. Issues in physical design: Concepts of indexes, File organization for relational tables, De-normalization. Relational Database :Structure of Relational Database, Schema, Relational Operation : Selection, Projection, Cartesian Production, Union, Intersection and Minus operation .Relational Algebra: Select operation, Project operation, Union operation, Cartesian Product operation, Intersection operation, Join operation, Different types of joins (Inner join, Outer join, Self join).	12
IV.	<b>SQL Server Basics:</b> Microsoft SQL Server 2019, Overview of SQL Server 2019, Versions of SQL Server, Installation of SQL Server 2019, SQL Server Management Studio(SSMS), Azure Data Studio(ADS), Features of SQL Server Express, SQL Server Support Life Cycle, Data Definition Language (DDL) Commands, Data Manipulation Language (DML) Commands, Data Control Language (DML) Commands, Transaction Control Language (TCL) Commands, Data Constraints, Stored Procedure, Function .	12
V.	<b>Oracle Basics :</b> Oracle Corporation, Versions of Oracle, Oracle Products, Oracle Installation, Oracle Client and Server Products, Online Transaction Processing, Hybrid cloud Installation, Data Definition Language (DDL) Commands, Data Manipulation Language (DML) Commands, Data Control Language (DML) Commands, Transaction Control Language (TCL) Commands, Data Constraints, Introduction to PL/SQL Programming, Data Types, Looping Statements, Cursors, Stored Procedure, Function .	12
<b>Keywords:</b> Data Models, Keys, SQL Commands, DBMS, RDBMS, Oracle, SQL Server.		

<b>Part C - Learning Resources</b>	
Text Books, Reference Books, Other Resources	
<b>Suggested Readings:</b>	
<ol style="list-style-type: none"> <li>1. Database system concept , H. Korth and A. Silberschatz, TMH Publications .</li> <li>2. Data Base Management System, Alexies&amp;Mathews, Vikash publication.</li> <li>3. Data Base Management System, C. J. Date ,Narosha Publication.</li> <li>4. Data Base Management System By James Matin .</li> <li>5. Principles of Database System By Ullman.</li> <li>6. Program Design, Peter Juliff, PHIPublications .</li> <li>7. The Complete Reference, Kevin Loney, Oracle Press.</li> <li>8. SQL, PL/SQL The Programming Language of Oracle, Ivan Bayross , PustakKosh Publication.</li> <li>9. Microsoft SQL Server Management and Administration, Ross, STM Publications .</li> </ol>	
<b>E Resources:</b>	



1. SWAYAM url link for DBMS and RDBMS : <https://youtu.be/f6LGtJutWyA>
2. SWAYAM url link for DBMS and RDBM : <https://youtu.be/IoL9Ve2SRwQ>
3. SWAYAM url link for DBMS and RDBMS : <https://swayam.gov.in/courses/4434-data-base-management-system>

**Part D: Assessment and Evaluation**

**Suggested Continuous Evaluation Methods:**

Maximum Marks: 100

Continuous Comprehensive Evaluation (CCE): 25 Marks

University Exam (UE): 75 Marks

**Internal Assessment:**

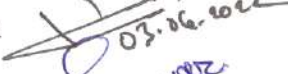
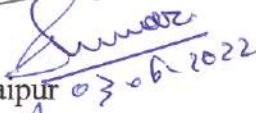
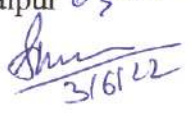

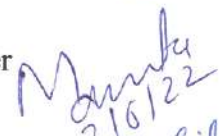
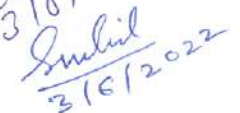

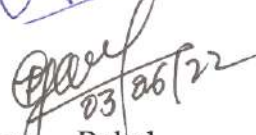
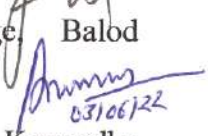
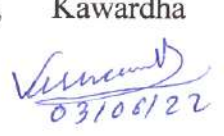
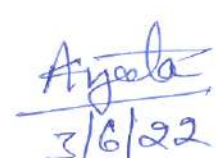
Continuous Comprehensive Evaluation (CCE)

Class Test/Assignment/Presentation

25 Marks

**Declaration**

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- Sant Gahira Guru University Sarguja, Ambikapur
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Devi Ahila Vishwavidyalaya, Indore

Date: 03.06.2022

<b>Part A: Introduction</b>			
Program: <b>Diploma Course</b>		Class: <b>B.C.A. II Year</b>	Year: <b>2022</b>
		Session: <b>2022-2023</b>	
1	Course Code	<b>BCA-11T</b>	
2	Course Title	<b>Computer Networking and Cyber Technology</b>	
3	Course Type	<b>Theory</b>	
4	Pre-requisite (if any)	No	
5	Course Learning Outcomes (CLO)	At the end of this course, the students will be able to: <ul style="list-style-type: none"> <li>● Understand the basic computer network technology.</li> <li>● Understand and explain the Data Communications System and its components.</li> <li>● Identify the different types of network topologies and protocols.</li> <li>● Understand the layers of the OSI model and TCP/IP.</li> <li>● Expose wireless and wired LANs.</li> <li>● Understand the cyber laws in India.</li> </ul>	
6	Credit Value	<b>Theory: 6</b>	
7	Total Marks	<b>Max. Marks: 25+75</b>	<b>Min Passing Marks: 33</b>

<b>Part B: Content of the Course</b>		
Total Periods: 90		
Unit	Topics	No. of Periods
I	<b>Introduction to Computer Network and Physical Layer:</b> Computer network Fundamentals and Types of computer networks: LAN, MAN, WAN, Wireless and wired networks, broadcast and point to point networks, Network topologies, ISO-OSI reference model, TCP/IP model, Concept of Analog & Digital Signal, Bandwidth, Multiplexing: TDM, FDM, WDM, CDMA, Transmission Media : Twisted pair, Coaxial cable, Fiber-optics, Wireless transmission (radio, microwave, infrared), Switching: Circuit Switching, Message Switching ,Packet Switching & their comparisons, Line Coding techniques: Bipolar, Unipolar, RZ, NRZ, Manchester, AMI, B8ZS, Block coding techniques.	18
II	<b>Data Link Layer:</b> Functions at Data Link Layer, Framing, Error detection and correction codes: checksum, CRC, hamming code, Flow Control: Stop & Wait and Sliding Window Protocols, Data link protocols: HDLC and PPP, Medium Access Sub-Layer: LLC Protocol, IEEE 802.2, Overview of IEEE 802.3,802.4,802.5, 802.6 and brief knowledge of 802 series up to present scenario.	18
III	<b>Network Layer and Transport Layer:</b> Functions of Network Layer, Routing Protocols & Algorithms, Principles of Congestion Control, IPv4 addresses, IPv4 Addressing, IPv6 addresses, Internetworking basics, Functions of Transport Layer, Flow Control & Buffering, Introduction to TCP/UDP protocols and their comparison.	18



IV	<b>Common Network Architecture:</b> Protocol Stack for Example Networks, Connection oriented & Connectionless N/Ws, Frame Relay, Example of N/Ws-P2P, X.25, ATM, Ethernet, Wireless LANs - 802.11, 802.11x, Gigabit, Broadband Networks: Integrated Service Digital Networks (ISDN), BroadBand ISDN, ATM, Introduction to Very Small Aperture Terminal (VSAT).	12
V	<b>Application Layer:</b> World Wide Web (WWW), Domain Name System (DNS), E-mail, File Transfer Protocol (FTP), HyperText Transfer Protocol (HTTP), Email Protocols: MIME & SMTP, POP, IMAP, Telnet – Remote Communication Protocol, Proxy Server, Proxy Web Servers. <b>Cyber Laws in India:</b> Information Technology Act, 2000 – a brief overview; E – commerce; E – governance; Concept of Electronic Signature; Concept of Cyber contraventions and Cyber Offences.	12
<b>Keywords:</b> Computer Network, TCP/IP Model, OSI Model, Wireless & Wired Networks, Cyber Laws		

<b>Part C - Learning Resource</b>	
Text Books, Reference Books, Other Resources	
<b>Suggested Readings:</b>	
<b>Text Books:</b>	
<ol style="list-style-type: none"> <li>1. Computer Networks, Andrew S. Tanenbaum, PHI / Pearson Education Inc.</li> <li>2. Data Communication and Networking, Behrouz A. Forouzan, Tata McGraw-Hill.</li> <li>3. Internet Law-Text and Materials, Chris Reed, Universal Law Publishing Co., New Delhi</li> <li>4. Hand book of Cyber Laws, Vakul Sharma, Macmillan India Ltd, New Delhi</li> </ol>	
<b>Reference Books:</b>	
<ol style="list-style-type: none"> <li>1. Data and Computer Communication, William Stallings, Pearson Education.</li> <li>2. Computer and Communication Networks, Nader F. Mir, Pearson Education, 2007.</li> <li>3. Data &amp; Computer Communication, Black, PHI</li> </ol>	
<b>E Resources:</b>	
<ul style="list-style-type: none"> <li>● NPTEL URL link for Data Communication:</li> </ul>	<a href="https://nptel.ac.in/courses/106105082">https://nptel.ac.in/courses/106105082</a>
Topics From SWAYAM Portal	
<ul style="list-style-type: none"> <li>● Introduction to Data Communication</li> </ul>	<a href="https://www.youtube.com/watch?v=swtH_0kidQc&amp;list=PLUtfVcb-iqn8dG1-Cn7NTEdILR3hRVgcN&amp;index=1">https://www.youtube.com/watch?v=swtH_0kidQc&amp;list=PLUtfVcb-iqn8dG1-Cn7NTEdILR3hRVgcN&amp;index=1</a>
<ul style="list-style-type: none"> <li>● Layered Architecture</li> </ul>	<a href="https://www.youtube.com/watch?v=xHO6LjSHeo0&amp;list=PLUtfVcb-iqn8dG1-Cn7NTEdILR3hRVgcN&amp;index=2">https://www.youtube.com/watch?v=xHO6LjSHeo0&amp;list=PLUtfVcb-iqn8dG1-Cn7NTEdILR3hRVgcN&amp;index=2</a>
<ul style="list-style-type: none"> <li>● Data and Signal</li> </ul>	<a href="https://www.youtube.com/watch?v=6ZGVZ7gUccE&amp;list=PLUtfVcb-iqn8dG1-Cn7NTEdILR3hRVgcN&amp;index=3">https://www.youtube.com/watch?v=6ZGVZ7gUccE&amp;list=PLUtfVcb-iqn8dG1-Cn7NTEdILR3hRVgcN&amp;index=3</a>
<ul style="list-style-type: none"> <li>● Guided Transmission Media</li> </ul>	<a href="https://www.youtube.com/watch?v=y7v3EAJsWXA&amp;list=PLUtfVcb-iqn8dG1-Cn7NTEdILR3hRVgcN&amp;index=5">https://www.youtube.com/watch?v=y7v3EAJsWXA&amp;list=PLUtfVcb-iqn8dG1-Cn7NTEdILR3hRVgcN&amp;index=5</a>
<ul style="list-style-type: none"> <li>● Unguided Transmission Media</li> </ul>	<a href="https://www.youtube.com/watch?v=hKq1tYIVxdQ&amp;list=PLUtfVcb-iqn8dG1-Cn7NTEdILR3hRVgcN&amp;index=6">https://www.youtube.com/watch?v=hKq1tYIVxdQ&amp;list=PLUtfVcb-iqn8dG1-Cn7NTEdILR3hRVgcN&amp;index=6</a>

Part D: Assessment and Evaluation		
<b>Suggested Continuous Evaluation Methods:</b> Maximum Marks: 100 Continuous Comprehensive Evaluation (CCE): 25 Marks University Exam (UE): 75 Marks		
<b>Internal Assessment:</b> Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	25 Marks

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- Member  
(Present Online)

Date: 03.06.2022

Part A: Introduction			
Program: <b>Diploma Course</b>	Class: <b>B.C.A. II Year</b>	Year: <b>2022</b>	Session: <b>2022-2023</b>
1	Course Code	<b>BCA-12T</b>	
2	Course Title	<b>Web Technology</b>	
3	Course Type	<b>Theory</b>	
4	Pre-requisite (if any)	No	
5	Course Learning Outcomes (CLO)	<p>At the end of this course, the students will be able to:</p> <ul style="list-style-type: none"> <li>Analyze a web page and identify its elements and attributes.</li> <li>Create web pages using HTML, CSS, JAVASCRIPT, XHTML</li> <li>Build dynamic web pages using JavaScript (Client side programming).</li> <li>Create XML documents and Schemas.</li> <li>Build interactive web applications using, PHP, AJAX.</li> <li>Handling Database using MYSQL</li> </ul>	
6	Credit Value	<b>Theory: 4</b>	
7	Total Marks	<b>Max. Marks: 25+75</b>	<b>Min Passing Marks: 33</b>

Part B: Content of the Course		
Total Periods: 60		
Unit	Topics	No. of Periods
I	<b>Introduction</b> :Introduction to web, protocols governing the web, web development strategies, Web applications, Introduction to Web Publishing: Introduction, Domain Name Registration, choosing a web host and signing up for an Account, web hosting, web design and development, Testing web site, uploading web pages.	12
II	<b>HTML:</b> Introduction, Basic formatting tags: heading, paragraph, line break, bold, italic, underline, superscript, subscript, font and image. Different attributes like align, color, bgcolor, font face, border, size. Navigation Links using anchor tag: internal, external, mail and image links, Link to different web pages and sections. Lists: ordered, unordered and definition, Table tag, HTML Form controls: form, text, password, text area, button, checkbox, radio button, select box, hidden controls, Frameset and frames. Basics of DHTML, XML.	12
III	<b>Scripting Languages:</b> Usefulness of Style Sheets, Creating Style sheets, Classes and Pseudo Classes, CSS Tags, Background, Font, Text, Position etc. JavaScript: Overview, Syntax & Conventions, Variables, Expression, Branching & Looping, Function, Array, Objects, Events & Document Object model, Alerts, prompts and conforms.	12

<b>IV</b>	PHP: Introduction to PHP, Server side scripting, Role of Web Server software, including files, comments, variables and scope, echo and print, Operators: Logical, Comparison and Conditional operators, Branching statements, Loops, break and continue PHP functions. Passing information between pages, HTTP GET and POST method, String functions: strlen, strpos, strstr, strcmp, substr, str_replace, string case, Array constructs: array(), list() and foreach(), PHP advanced functions: Header , Session, Cookie, Object Oriented Programming using PHP: class, object, constructor, destructor and inheritance.	12
<b>V</b>	<b>MySQL:</b> Features of MySQL, data types, Introduction to SQL commands-SELECT, DELETE,UPDATE, INSERT, PHP functions for MySQL operations: mysql_connect, mysql_select_db, mysql_query,mysql_fetch_row, mysql_fetch_array, mysql_fetch_object, mysql_result, Insertion and Deletion of data using PHP, Displaying data from MYSQL in webpage.	12
<b>Keywords:</b> HTML, PHP, CSS, CSS3, JAVASCRIPT, MYSQL, Dynamic website, Commercial website, Web applications		

<b>Part C - Learning Resource</b>	
Text Books, Reference Books, Other Resources	
<b>Suggested Readings:</b>	
<b>TEXT BOOKS/ REFERENCE BOOKS:</b>	
<ol style="list-style-type: none"> <li>1. Xavier, C, "Web Technology and Design", New Age International.</li> <li>2. Ivan Bayross, "HTML, DHTML, Java Script, Perl &amp; CGI", BPB Publication.</li> <li>3. Ramesh Bangia, "Internet and Web Design", New Age International.</li> <li>4. Ullman, "PHP for the Web: Visual Quick Start Guide", Pearson Education.</li> <li>5. Jim Converse &amp; Joyce Park, "PHP &amp; MySQL Bible", Wiley India Publication</li> <li>6. "Internet and Internet Engineering", Daniel Minoli, TMH.</li> <li>7. Chuckmusiano &amp; Bill Kenndy, O Reilly, HTML The Definite Guide"</li> <li>8. Joseph Schmuller, Dynamic HTML, BPB, 2000.</li> <li>9. Deitel, Deitel, Goldberg, "Internet &amp; World Wide Web How to Program", Third Edition, Pearson Education, 2006.</li> <li>10. Raj Kamal, "Internet and Web Technologies", Tata McGraw-Hill.</li> </ol>	

<b>Part D: Assessment and Evaluation</b>		
<b>Suggested Continuous Evaluation Methods:</b>		
Maximum Marks: 100		
Continuous Comprehensive Evaluation (CCE): 25 Marks		
University Exam (UE): 75 Marks		
<b>Internal Assessment:</b>		
Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	25 Marks





## Declaration

The syllabus of this subject is frame as per the TOR of department of higher education, Chhattisgarh.

1. Dr. H.S. Hota - Chairman  
Prof. and Head, Dept. of Computer Science and Application  
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2. Dr. Sanjay Kumar - Member  
Prof. and Head, SoS in Computer Science, Pt. Ravishankar Shukla University,  
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6. Mr. Sushil Kumar Sahu - Member  
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Shaheed Mahendra Karma Vishwavidyalaya, Bastar  
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7. Mr. Vikrant Gupta - Member  
Prof. and Head, Batmul Ashram College, Salheana  
Shaheed Nand Kumar Patel University, Raigarh  
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8. Mr. L.K. Gavel - Member  
Asst. Prof. and Head, Govt. Ghanshyam Singh Gupt, PG College, Balod  
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9. Dr. Anil Kumar Sharma - Member  
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10. Mr. Vishwnath Tamrakar - Member  
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13. Dr. Ugrasen Suman - Member  
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(Present Online)

Date: 03.06.2022