### INDRA GANESAN COLLEGE OF ENGINEERING

**IG Valley, Manikandam, Tiruchirappalli, Tamil Nadu – 620 012, India(ApprovedbyAICTE,NewDelhi,AffiliatedtoAnnaUniversity,Chennai-25)**

### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PREFACE OF THE COURSE FILE

Batch : **2018-2019**

AcademicYear : **2018-2019 /ODD**

Program : **COMPUTER SCIENCE AND ENGINEERING**

Year&Semester : **1ST Year/1STSemester/‘A’Section**

Course Code : **CP5151**

NBACourse Code :

Name ofthe Course : ADVANCED DATA STRUCTURES AND ALGORITHMS

Facultyin-charge :**Mrs. T. Sugashini/ Asst.Prof/ CSE**

Signature oftheFacultyin-charge HoD/ CSE

### CP5151 ADVANCED DATA STRUCTURES AND ALGORITHMS

### LTPC

### 3003

**OBJECTIVES:**

* To understand the usage of algorithms in computing.
* To learn and use hierarchical data structures and its operations.
* To learn the usage of graphs and its applications..
* To select and design data structures and algorithms that is appropriate for problems.
* To study about NP Completeness of problems.

### UNIT I ROLE OF ALGORITHMS IN COMPUTING 12

### Algorithms – Algorithms as a Technology- Insertion Sort – Analyzing Algorithms – Designing Algorithms- Growth of Functions: Asymptotic Notation – Standard Notations and Common Functions- Recurrences: The Substitution Method – The Recursion-Tree Method.

### UNIT II HIERARCHICAL DATA STRUCTURES 12

### Binary Search Trees: Basics – Querying a Binary search tree – Insertion and Deletion- Red-Black trees: Properties of Red-Black Trees – Rotations – Insertion – Deletion -B-Trees: Definition of Btrees – Basic operations on B-Trees – Deleting a key from a B-Tree- Fibonacci Heaps: structure – Mergeable-heap operations- Decreasing a key and deleting a node-Bounding the maximum degree.

### UNIT III GRAPHS 12

### Elementary Graph Algorithms: Representations of Graphs – Breadth-First Search – Depth-First Search – Topological Sort – Strongly Connected Components- Minimum Spanning Trees: Growing a Minimum Spanning Tree – Kruskal and Prim- Single-Source Shortest Paths: The Bellman-Ford algorithm – Single-Source Shortest paths in Directed Acyclic Graphs – Dijkstra‘s Algorithm; All-Pairs Shortest Paths: Shortest Paths and Matrix Multiplication – The FloydWarshall Algorithm;

### UNIT IV ALGORITHM DESIGN TECHNIQUES 12

Dynamic Programming: Matrix-Chain Multiplication – Elements of Dynamic Programming – Longest Common Subsequence- Greedy Algorithms: An Activity-Selection Problem – Elements of the Greedy Strategy- Huffman Codes.

### UNITV NP COMPLETE AND NP HARD 12

NP-Completeness: Polynomial Time – Polynomial-Time Verification – NP- Completeness and Reducability – NP-Completeness Proofs – NP-Complete Problems.

**Total :** 60 PERIODS

### 

### OUTCOMES:

**At the end of the course, the students should be able to:**

• Design data structures and algorithms to solve computing problems.

• Design algorithms using graph structure and various string matching algorithms to solve real-life problems.

• Apply suitable design strategy for problem solving.

### 

### TEXTBOOKS:

1. Alfred V. Aho, John E. Hopcroft, Jeffrey D. Ullman, ―Data Structures and Algorithms‖, Pearson Education, Reprint 2006.
2. Robert Sedgewick and Kevin Wayne, ―ALGORITHMS‖, Fourth Edition, Pearson Education.
3. S.Sridhar,‖Design and Analysis of Algorithms‖, First Edition, Oxford University Press. 2014.
4. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein, ―Introduction to Algorithms‖, Third Edition, Prentice-Hall, 2011.

### REFERENCES:

1. Alfred V. Aho, John E. Hopcroft, Jeffrey D. Ullman, ―Data Structures and Algorithms‖, Pearson Education, Reprint 2006.
2. Robert Sedgewick and Kevin Wayne, ―ALGORITHMS‖, Fourth Edition, Pearson Education.
3. S.Sridhar,‖Design and Analysis of Algorithms‖, First Edition, Oxford University Press. 2014.
4. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein, ―Introduction to Algorithms‖, Third Edition, Prentice-Hall, 2011.

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**DEPARTMENTOFCOMPUTERSCIENCEANDENGINEERING**

Ref:SBECW/CSE/Coursecommitteemeeting/EM-I/2018-19(ODD) DATE: 12.06.19

**COURSE CODE AND COURSE NAME:** CP5151 Advanced Data Structures and Algorithms

**ACADEMIC YEAR:** 2018-2019(ODD) **SEM:**01 **REGULATION**:2017

**PROGRAM**:CSE **DATEOFMEETING**:14.09.19 **TIME**: 10.00AM **Venue**:CSEDept.HoDCabin

MembersPresent

Table.1Coursecommitteemembers

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Name ofthefaculty&Designation,Program** | **Sem/Sec/Program** | **Signature** |
| 1. | Mrs.T. Sugashini AP/CSE | I SEM//CSE |  |
| 2. | Mrs.A.Ramya AP/CSE | I SEM//CSE |  |

HODwelcomed allthememberspresent

* 1. Contentofsyllabus,unitwisediscussed.Natureofqualitative,quantitative,problematic,theoreticalconceptsetc.havebeendiscussed
  2. WithreferencetotheR-2013regulation,Numberofperiodsperunit=09,totalnumberofperiods=45periods.10 periodsallottedfortutorials.
  3. Visionandmissionofthecollege,departmentdiscussed. POs,PEOs, PSOsdiscussed.
  4. Courseoutcomesdefinedforeachunits,consideringlearningoutcomes.

Table.2CourseOutcomes

|  |  |  |  |
| --- | --- | --- | --- |
| **CO** | **CourseOutcomes** | **POs** | **PSOs** |
| **C406.1** | Design data structures and algorithms to solve computing problems | 1,2,3,4,5,6,7,8,9,10,11,12 | 1,2,3 |
| **C406.2** | Design algorithms using graph structure. | 1,2,3,4,5,6,7,8,9,10,11,12 | 1,2,3 |
| **C406.3** | Design various string matching algorithms to solve real-life problems. | 1,2,3,4,5,6,7,8,9,10,11,12 | 1,2,3 |
| **C406.4** | Apply suitable design strategy for problem solving. | 1,2,3,4,5,6,7,8,9,10,11,12 | 1,2,3 |
| **C406.5** | Develop completeness of algorithm techniques & strategies. | 1,2,3,4,5,6,7,8,9,10,11,12 | 1,2,3 |
|  |  |  |  |

* 1. MappingofCOswithPOsandPSOsisdonewithsuitablecorrelationlevels(1forlow,2formedium,3forhigh,“-”fornocorrelation,beforecontentbeyondsyllabus)

Table.3MappingofCOs,C,PSOswithPOs-beforeCBS.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Course | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| C406.1 | 2 | 2 | 3 | 3 | 1 | 2 | 1 |  | 2 | 1 | 2 | 2 | 2 | 2 |
| C406.2 | 1 | 3 | 2 | 1 | \* | 1 | \* |  | 3 | 1 | 2 | 3 | 2 | 2 |
| C406.3 | 2 | 1 | \* | 1 | 3 | 2 | 3 |  | 2 | \* | 2 | 1 | 2 | 2 |
| C406.4 | 1 | 2 | 2 | 3 | 3 | 1 | 3 |  | 2 | 1 | 2 | 2 | 2 | 2 |
| C406.5 | 3 | 3 | 1 | 2 | 3 | 3 | 3 |  | 3 | 1 | 2 | 3 | 2 | 2 |
| C406.6 | 3 | 1 | 2 | 2 | 2 | 3 | 2 |  | \* | 2 | 2 | 1 | 2 | 2 |

* 1. Identificationofcontentbeyondsyllabus-curriculargapsareidentifiedconsideringindustryneeds,employers feedback, alumni feedback, government policy on industrialization, new investments by private/public sectors, societal needs and level of correlation of COs with POs and PSOs. Accordingly the details ofCBS addedanditscorrelationisgivenbelow.

Table.4Identificationofcontentbeyondsyllabus

|  |  |  |
| --- | --- | --- |
| Contentbeyondsyllabusadded | POsstrengthened/Vacant filled | CO/Unit |
| Application ofLists:SparseMatrix,P | PO3 VaccantFilled | C406.3& C406.5/II & III |

* 1. MappingofCOswith POs,PSOs- afterCBS.

Table.5MappingofCOs,C,PSOswithPOs-after CBS.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Course | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| C406.1 | 2 | 2 | 3 | 3 | 1 | 2 | 1 |  | 2 | 1 | 2 | 2 | 2 | 2 |
| C406.2 | 1 | 3 | 2 | 1 | \* | 1 | \* |  | 3 | 1 | 2 | 3 | 2 | 2 |
| C406.3 | 2 | 1 | 2 | 1 | 3 | 2 | 3 |  | 2 | \* | 2 | 1 | 2 | 2 |
| C406.4 | 1 | 2 | 2 | 3 | 3 | 1 | 3 |  | 2 | 1 | 2 | 2 | 2 | 2 |
| C406.5 | 3 | 3 | 1 | 2 | 3 | 3 | 3 |  | 3 | 1 | 2 | 3 | 2 | 2 |
| C406.6 | 3 | 1 | 2 | 2 | 2 | 3 | 2 |  | \* | 2 | 2 | 1 | 2 | 2 |

* 1. Contentbeyondsyllabusisthusidentifiedbasedontheabove.PlanforhandlingofCBSby internal/externalresourceperson/industrialvisitsaredecided. This willbeincludedintheclasslogbook.
  2. Lecturescheduleshouldbepreparedunitwise,asinthesyllabus.Numberofperiodsperunitandtotalnumberofperiods plannedshouldnotbelessthan,periods allotted inthesyllabus ofAnnaUniversity.
  3. PlanforadditionalPeriodsforIAtests,CBS,NPTELdelivery,Seminar,Quizetcaretobeincorporatedinthelectureschedule.Theseperiods areadded exclusiveofnumberofperiodsprescribedinthesyllabus.
  4. Planforatleastthreeassignments(withlevel ofcorrelation),seminartopic,quizquestionsdiscussed.
  5. Separate tutorial sheets should be prepared and supplied to all students. Minimum two periods per unit to beplanned, totally 10 tutorial periods. Minimum 2 tutorial questions should be set per unit, totally 10 tutorialquestions.
  6. Bright students and slow learners are to be identified, immediately after IA test - I. such students may becounselled suitably and the evidence for counselling to be recorded in the attendance cum assessment record.(Sign of students with date and time of counselling, to be strictly recorded and to be attached in the coursefile).Suchcounsellingmaybeconductedaftercollegehours.
  7. For those students secured less than 60% in the IA Test, Makeup test should be conducted. Correspondinglyroot cause analysis for reasons of failure, corrective and preventive action, and follow up action taken shouldbefiledproperly.
  8. Contentsofcoursefiletobereviewed periodically.
  9. Lecture schedule, assignment questions, tutorial questions, course materials, AU questions (at least 5) shouldbesuppliedwithinoneweekafterthecommencementofclasses.
  10. Coursematerialshouldbe uploadedin thecollegewebsitefor student’sreference.
  11. Discrepancy in question paper, if any to be informed to the controller of examinations through web portalentry, after getting approval from theHoD& the Principal. Critically asked questions, if any to be discussedwiththestudentsofthenextbatch.
  12. Immediately after the publication of the results, analysis are to be carried out and follow up action to be takenforthefailures.
  13. IA test question papers should be set as per the norms of the college, incorporating marks for learningoutcomes andcourseoutcomes.Commonquestionpapersshouldbeset.
  14. Certificate courses/Workshop/guest lectures may be planned inviting experts from industry/higher learninginstitutions.
  15. After IA test, an objective type tests may be conducted (3 times in a semester-30 minutes duration-maximum10questions).QuestionsaskedinGATE,TANCET,IESoranyotherCompetitiveexaminationcanbetaken

asa reference. This is to facilitate the bright studentsto prepare forhigherlevelof thinking and to enhanceplacementandhigherstudiesopportunities.

* 1. IAtestpapers,assignmentpapersoranyotherpaperssubmittedbythestudents,shouldbereturnedtothestudents within5days aftercorrection. Samplepapershouldbesuitablyfiled.
  2. Longabsenteesofstudentsifanytobeinformedtotheparentsthroughclasscoordinator,ifsuchstudentsattendancelessthan75%.

**Coursecoordinator HoD/CSE**

# INDRA GANESAN COLLEGE OF ENGINEERING

(Approved by AICTE, NewDelhi and affiliated to Anna University, Chennai)

### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING CONTENTS OF COURSE FILE

(To be paste and done inner side of the file-frontside)

1. Preface of the coursefile\*
2. Vision,Mission,PEOs,POs,PSOs,Bloomstaxonomy\*
3. Subject handlersofyesteryears\*
4. Timetable/Workloadofthestaff–Distributionofteachingload–RolesandResponsibilities\*
5. Syllabus signed by HoD\*
6. LectureSchedulewithWebsitesforreference –Courseoutcomes,mapping,CBS,(atleastfive)\*
7. CourseCommitteemeetingwithCourseco-ordinatorandminutes\*(CommonCoursesonly)
8. IdentificationofCurriculargapandContentBeyondthesyllabus\*
9. Selfstudytopics-Journal/Conferencepaperspublishedintheabovesubject(recent-atleast2)\*
10. NominalRoll-3copies-(a).Fortestmarkentry.(b).forAssignmententry.(c).fortutorialmarkentry\*
11. AUQuestionpapers(atleast5)\*
12. UnitwiseQ&A-Objectivetypequestions-20questionsineachunitwithanswers\*
13. PPTMaterial,CourseMaterial-Unitwise\*
14. AssignmentquestionpaperwithCOs,POs&PSOsmappingandsampleanswersheet(atleast3)\*&
15. TutorialQuestionpaper withCOs,POs&PSOsmappingand answer key(minimum3 questionsperunit,15questions percourse)\*&
16. ClassTest/IA-Testquestionpaper,KeywithSampleanswer paper (atleast3)-eachIAtest,CTs\*&
17. Retestquestionpaper–sample\*&
18. RootCauseAnalysis,CAP,Followupaction\*&
19. AU Webportalentrysheet\*&
20. Content beyondthesyllabusproof\*&$
21. Studentfeedbackonfaculty\*&$
22. Courseendsurvey\*&$
23. InternalAssessmentsheet\*&$
24. AUquestionpaperwithstudentsfeedback\*&$
25. Discrepancyofthequestionpaperandcorrespondence,ifany\*&$
26. AUgradesheet\*&$@
27. CO–PO&PSOattainmentsheet\*&$@
28. Anyotherdocumentsnotlisted–specifyandenclose\*&Note:
29. This fileshouldbepreparedandsignedbyHoD/CSE, withinoneweekbeforethecommencementoftheclasses(Markedas \*)
30. Thisfileshouldbesubmittedforverification, aftereachinternalassessmenttest(\*&)
31. Thisfileshouldbesubmittedforverification,withintwoweeks,afterthelastworkingday(\*&$)
32. FinalsubmissionwithinoneweekafterthepublicationofAUresults.(**\*&$@**)

# INDRAGANESANCOLLEGEOFENGINEERING

(ApprovedbyAICTE,NewDelhi andaffiliatedtoAnnaUniversity,Chennai)

### DEPARTMENTOFCOMPUTERSCIENCE AND ENGINEERING REVIEW OF COURSE FILE

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|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S.N | Details  Date: | R-I-\* | R-II-\*& | R-III-  \*& | R-IV-  \*&$ | R-V-  \*&$@ |
| 1. | Prefaceofthe coursefile |  |  |  |  |  |
| 2. | Vision,Mission,PEOs, POs,PSOs, Blooms  taxonomy |  |  |  |  |  |
| 3. | Subjecthandlersofyesteryears |  |  |  |  |  |
| 4. | Timetable/Workloadofthestaff – Distribution of  teachingload–Rolesand Responsibilities |  |  |  |  |  |
| 5. | Syllabussigned bystaff&HoD |  |  |  |  |  |
| 6. | LectureSchedulesignedbystaff&HoD |  |  |  |  |  |
| 7. | CourseCommitteemeetingcircularandminutes |  |  |  |  |  |
| 8. | IdentificationofCurricular gapandContent  Beyondthesyllabus |  |  |  |  |  |
| 9. | Self-studytopics |  |  |  |  |  |
| 10. | PreviousAUQuestionpapers |  |  |  |  |  |
| 11. | UnitwiseQ&A andObjectivetypequestions |  |  |  |  |  |
| 12. | Unitwisecoursematerial |  |  |  |  |  |
| 13. | Assignmentquestionpaperwithsampleanswer  sheetsandmarkentry |  |  |  |  |  |
| 14. | Tutorialquestionpaperwithkeyandmarkentry |  |  |  |  |  |
| 15. | Classtest/IAtestQPaper withKey,sample  answerpapersandmarkentry |  |  |  |  |  |
| 16. | IATest-resultanalysis-CAP-evidence-rootcause  analysis. |  |  |  |  |  |
| 17. | Retest–Qpaper-Attendance-marks |  |  |  |  |  |
| 18. | AUWebportal entrysheet |  |  |  |  |  |
| 19. | Verypoorperformancein firsttwotests-action  taken.-communicationtoparents-evidence |  |  |  |  |  |
| 20. | Absencefortwotests-actiontaken-communication  toparents-evidence. |  |  |  |  |  |
| 21. | Indisciplineofstudentreported, ifany |  |  |  |  |  |
| 22. | Special class/coachingclass/remedial  class/attendance-CAP |  |  |  |  |  |
| 23. | ConductofSeminar,Quizzes-proof |  |  |  |  |  |
| 24. | Contentbeyondthesyllabus-proof |  |  |  |  |  |
| 25. | Student feedbackonfaculty |  |  |  |  |  |
| 26. | Courseendsurvey |  |  |  |  |  |
| 27. | InternalAssessmentsheet |  |  |  |  |  |
| 28. | AUquestionpaperwithstudentsfeedback |  |  |  |  |  |
| 29. | Discrepancyofthequestionpaperand  correspondence,ifany |  |  |  |  |  |
| 30. | AUresultanalysis-Details ofarrearstudents. |  |  |  |  |  |
| 31. | AUgrade sheet |  |  |  |  |  |
| 32. | CO –PO&PSOattainmentsheet |  |  |  |  |  |
|  | **SignatureofCourse handlingfaculty** |  |  |  |  |  |
|  | **Signatureof HoD** |  |  |  |  |  |

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**DEPARTMENTOFCOMPUTERSCIENCEANDENGINEERING**

**FacultyTimeTable**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Mrs.T.SUGASHINI** | | | | | | | | |
| **DayOrder** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **I** |  |  | ADA |  |  |  |  |  |
| **II** |  |  |  |  |  |  |  |  |
| **III** |  |  |  | ADA |  |  |  |  |
| **IV** |  |  |  |  |  |  | ADA |  |
| **V** | ADA |  |  |  |  |  |  |  |
|  | | | | | | | | |
| **S.Code** | **Title** | | | | **Year/ Branch** | | **Hours** | |
| **CP5151** | ADVANCED DATA STRUCTURES AND ALGORITHMS | | | | I/CSEA | |  | |
| TOTAL-4hours | | | | | | | | |

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**DEPARTMENTOFCOMPUTERSCIENCEANDENGINEERING**

**Lecture Schedule**

Degree/Program:**B.E/ CSE** Course Code: **CP5151**  CourseName: **ADVANCED DATA STRUCTURES AND ALGORITHMS** Duration:**2018-2019** Semester: **I** Section**: A** Faculty:Mrs.T.Sugashini AP/CSE

**AIM:**

To expose the student’s principles of operation and performance in human compuer interaction

**OBJECTIVES:**

To impart knowledge on

(i)To learn the foundations of Human Computer Interaction.

(ii)To become familiar with the design technologies for individuals and persons with disabilities.

(iii)To be aware of mobile HCI.

(iv)To learn the guidelines for user interface.

**PREREQUISITES:**Human Study theory, Computer Study theory.

**AIM:**

To expose the student’s principles of operation and performance in human compuer interaction

**OBJECTIVES:**

To impart knowledge on

(i)To learn the foundations of Human Computer Interaction.

(ii)To become familiar with the design technologies for individuals and persons with disabilities.

(iii)To be aware of mobile HCI.

(iv)To learn the guidelines for user interface.

**PREREQUISITES:**Human Study theory, Computer Study theory.

**COURSE OUTCOMES:**

After the course, the student should be able to:

|  |  |  |  |
| --- | --- | --- | --- |
| **CO** | **Course Outcomes** | **POs** | **PSOs** |
| C406.1 | Design effective dialog for HCI | 1,2,3,4,5,6,7,8,9,10,11,12 | 1,2 |
| C406.2 | Design effective HCI for individuals and persons with disabilities. | 1,2,3,4,5,6,7,8,9,10,11,12 | 1,2 |
| C406.3 | Assess the importance of user feedback. | 1,2,3,4,5,6,7,8,9,10,11,12 | 1,2 |
| C406.4 | Explain the HCI implications for designing multimedia/ ecommerce/ e-learning Web sites. | 1,2,3,4,5,6,7,8,9,10,11,12 | 1,2 |
| C406.5 | Develop meaningful user interface. | 1,2,3,4,5,6,7,8,9,10,11,12 | 1,2 |

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Date** | **Topics to be Covered** | **Book** |
| **UNIT -IFOUNDATIONS OF HCITarget periods :09** | | | |
| 1 | 6.3.19 | The Human: | T1/BB |
| 2 | 7.3.19 | I/O channels | R2/BB |
| 3 | 7.3.19 | Memory | T1/BB  T3/BB |
| 4 | 8.3.19 | Reasoning and problem solving |
| 5 | 9.3.19 | The Computer: | R3/BB |
| 6 | 10.3.19 | Devices and Memory | T2/BB |
| 7 | 15.3.19 | processing and networks | T1/BB |
| 8 | 16.3.19 | Interaction: Models and frameworks, Ergonomics and styles | T1/BB |
| 9 | 17.3.19 | elements , interactivity, Paradigms, Case Studies | T1/BB |
| 10 | 21.3.19 | Tutorial |  |
| 11 | 21.3.19 | Tutorial |  |
| **UNIT II -DESIGN & SOFTWARE PROCESSTarget periods :09** | | | |
| 12 | 28.3.19 | Interactive Design: Basics , process, scenarios. | T1/BB |
| 13 | 01.4.19 | navigation and screen design. | R2, T1/BB |
| 14 | 3.4.19 | Iteration and prototyping | R2, T1/BB |
| 15 | 16.4.19 | HCI in software process: | T1/BB |
| 16 | 20.4.19 | Software life cycle | R3 /BB |
| 17 | 21.4.19 | usability engineering | T1/BB |
| 18 | 24.4.19 | Prototyping in practice and design rationale. | T1/BB |
| 19 | 27.4.19 | Design rules: principles, standards, guidelines, rules. | R1/BB |
| 20 | 27.4.19 | Evaluation Techniques and Universal Design | T1/BB |
| 21 | 28.4.19 | Tutorial |  |
| 22 | 28.4.19 | Tutorial |  |
| **UNIT III -MODELS AND THEORIESTarget Periods :09** | | | |
| 23 | 30.4.19 | HCI Models: | T1/BB |
| 24 | 31.4.19 | Cognitive models: | T1/BB  T1/BB |
| 25 | 3.5.19 | Socio-Organizational issues | R1/BB |
| 26 | 5.5.19 | stakeholder requirements | T2/BB |
| 27 | 6.5.19 | Communication | R1/BB |
| 28 | 10.5.19 | collaboration models | T3/BB |
| 39 | 12.5.19 | Hypertext | T3/BB |
| 30 | 24.5.19 | Multimedia and WWW |  |
| 31 | 24.5.19 | Tutorial |  |
| 32 | 26.5.19 | Tutorial |  |
| **UNIT IV -MOBILE HCITarget Periods:09** | | | |
| 33 | 26.5.19 | Mobile Ecosystem  Platforms, Application frameworks | T1/BB  T1/BB |
| 34 | 28.5.19 |
| 35 | 28.5.19 | Types of Mobile Applications: | R2/BB |
| 36 | 2.6.19 | Widgets and Applications | T1/BB |
| 37 | 3.6.19 | Games- Mobile Information Architecture | T3/BB |
| 38 | 4.6.19 | Mobile 2.0 | R3/BB |
| 39 | 8.6.19 | Mobile Design: | R2/BB |
| 40 | 10.6.19 | Elements of Mobile Design and Tools | T1/BB |
| 41 | 10.6.19 | Tutorial |  |
| 42 | 12.6.19 | Tutorial |  |
| **UNIT V - WEB INTERFACE DESIGN Target Periods:09** | | | |
| 43 | 12.6.19 | Designing Web Interfaces | T1/BB |
| 44 | 15.6.19 | Drag & Drop | T2/BB |
| 45 | 15.6.19 | Direct Selection | R1/BB |
| 46 | 16.6.19 | Contextual Tools | T3/BB |
| 47 | 16.6.19 | Overlays | R3/BB |
| 48 | 17.6.19 | Inlays | T1/BB |
| 49 | 17.6.19 | Virtual Pages | R2/BB |
| 50 | 18.6.19 | Process Flow | R1/BB |
| 51 | 18.6.19 | Case Studies |  |
| 52 |  | Tutorial |  |
| 53 |  | Tutorial |  |
| **Content Beyond the Syllabus** | | | |
| 54 |  | Testing tools | Material |

### TEXTBOOKS:

1. Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale, “Human Computer Interaction”, 3rd Edition, Pearson Education, 2004 (UNIT I , II & III).
2. Brian Fling, “Mobile Design and Development”, First Edition ,O‟Reilly Media Inc., 2009 (UNIT –IV).
3. Bill Scott and Theresa Neil, “Designing Web Interfaces”, First Edition, O‟Reilly, 2009.(UNITV).

### REFERENCES:

1. Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale, “Human Computer Interaction”, 3rd Edition, Pearson Education, 2004 (UNIT I , II & III).
2. Brian Fling, “Mobile Design and Development”, First Edition ,O‟Reilly Media Inc., 2009 (UNIT –IV).
3. Bill Scott and Theresa Neil, “Designing Web Interfaces”, First Edition, O‟Reilly, 2009.(UNIT-V).

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| **RegisterNumber:** |  |  |  |  |  |  |  |  |  |  |  |  |

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|  | | **INDRAGANESANCOLLEGEOFENGINEERING**  **IGValley, Manikandam,Tiruchirappalli, TamilNadu–620012,India**  (ApprovedbyAICTE, NewDelhiandaffiliatedtoAnnaUniversity, Chennai) | | | | | | | |
| **InternalAssessmentExam -I** | | | | **Date/Session** |  | | **Marks** | | **50** |
| **Coursecode** | | **CS6008** | **CourseTitle** | Human Computer Interaction | | | | | |
| **Regulation** | | **2017** | **Duration** | **90 minutes** | | **AcademicYear** | | **2018-2019** | |
| **Year** | | **2018** | **Semester** | **VIII** | | **Department** | | **CSE** | |
| **COURSEOUTCOMES** | | | | | | | | | |
| **CO1:** | Design effective dialog for HCI | | | | | | | | |
| **CO2:** | Design effective HCI for individuals and persons with disabilities. | | | | | | | | |
| **CO3:** | Assess the importance of user feedback. | | | | | | | | |
| **CO4:** | Explain the HCI implications for designing multimedia/ ecommerce/ e-learning Web sites. | | | | | | | | |
| **CO5:** | Develop meaningful user interface. | | | | | | | | |
| **CO6:** | Design effective dialog for HCI | | | | | | | | |

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| **Q.No.** | **Question** | **CO** | **BTS** |
| **PARTA**  **(Answerallthe Questions10x2 =20Marks)** | | | |
| 1 | Bring out the layersofmobile ecosystem | 1 | 1 |
| 2 | Listtheprosandconsofmobilegameapplication | 2 | 1 |
| 3 | Why JavaScript and Ajax have been ignored for web application on the mobile? | 2 | 1 |
| 4 | Define Color palettes | 2 | 2 |
| 5 | Give some examples of world largest mobile operators | 1 | 1 |
| 6 | Identify the categories of mobile platforms | 2 | 2 |
| 7 | Compare the various mobile application type | 2 | 2 |
| 8 | Define application context | 2 | 2 |
| 9 | List the disciplines of information architecture | 2 | 2 |
| 10 | List the mobile prototyping | 3 | 2 |
| **PARTB**  **(AnsweralltheQuestions 2x10=20Marks)** | | | |
| 11a | Describe the following  a. Mobile EcoSystem  b. Platforms | 2 | 2 |
| OR | | | |
| 11b | Appraisethetypesofmobileapplicationswithexamples | 2 | 2 |
| 12a | Listandexplaintheelementsofmobiledesign | 2 | 2 |
| OR | | | |
| 12b | Explainbrieflyaboutmobileinformationarchitecture. | 2 | 2 |
| **PARTC**  **(AnsweralltheQuestions 1x10=10Marks)** | | | |
| 13a | ElaborateonMobileapplicationmediumtypes | 2 | 2 |
| OR | | | |
| 13b | With neat diagram of mobile ecosystem, discuss its platforms and application frameworks | 2 | 3 |

**CourseFaculty HoD**

**(Name/Sign/Date) (Name/Sign/Date)**

# INDRAGANESANCOLLEGEOFENGINEERING

### IGValley, Manikandam,Tiruchirappalli, TamilNadu–622012,India

(ApprovedbyAICTE,NewDelhiandaffiliatedtoAnnaUniversity,Chennai)

InternalAssessmentTestAnswerBook

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| **Name** |  | | | | | | | **Year/Semester/Section** | | |  | |
| **BatchNo.** |  | **Date/Session** | | |  | | | **Department** | | |  | |
| **Coursecode** |  | **CourseTitle** | | |  | | | | | | | |
| **InternalAssessmentTest** | | **IAT1** |  |  | **IAT2** |  |  | **IAT3** |  | **Model** | |  |
|  | |  | |  | |  | | |
| **NameandSignatureoftheInvigilatorwithdate** | | | | |  | | | | | | | |

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| Instruction totheStudent:Puttickmarktothequestionattendedinthecolumnagainstquestion. | | | | | | | | |
| **Part A** | | | **Part B/Part C** | | | | | **TotalMarks** |
| **Q.No.** |  | **Marks** | **Q.NO.** |  | **a** |  | **b** |
| **Marks** | **Marks** |
| **1** |  |  | **11** |  |  |  |  |  |
| **2** |  |  | **12** |  |  |  |  |  |
| **3** |  |  | **13** |  |  |  |  |  |
| **4** |  |  | **14** |  |  |  |  |  |
| **5** |  |  | **15** |  |  |  |  |  |
| **6** |  |  | **16** |  |  |  |  |  |
| **7** |  |  | **Total** | | | | |  |
| **8** |  |  | **GrandTotal** | | | **NameandSignature**  **ofthe Examinerwithdate** | | |
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| **Total** | |  |

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| **Tobefilledbytheexaminer** | | | | | | | |
| CourseOutcomes | 1 | 2 | 3 | 4 | 5 | 6 | Total |
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| MarksObtained |  |  |  |  |  |  |  |
| **IQACAudit-Remarks** | | | | | | NameandSignatureoftheIQACmember | |

**INDRAGANESANCOLLEGEOFENGINEERING**

C:\Users\student\AppData\Local\Temp\ksohtml2148\wps2.png**IG Valley, Manikandam, Tiruchirappalli, Tamil Nadu – 620 012, India(ApprovedbyAICTE,NewDelhi,AffiliatedtoAnnaUniversity,Chennai-25)**

## DEPARTMENTOFCOMPUTERSCIENCEAND ENGINEERING

### ACADEMICYEAR 2019– 2020(ODDSEMESTER)

**STUDENTS MARKSTATEMENT-COBASED**

### Internal Exam 1SUBJECTCODE&TITLE:CS6008 Human Computer Interaction

**YEAR/SEM: IV/VIII MONTH&YEAR: April &2018**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.NO** | **REGNO** | **STUDENTNAME** | **COX(Y)** | **COX(Y)** | **TOTAL**  **(60)** |
| 1 |  |  | 20 | 21 | 41 |
| 2 |  |  | 21 | 12 | 33 |
| 3 |  |  | 4 | 7 | 11 |
| 4 |  |  | 24 | 13 | 37 |
| 5 |  |  | 28 | 20 | 48 |
| 6 |  |  | 21 | 19 | 40 |
| 7 |  |  | 16 | 28 | 44 |
| 8 |  |  | 19 | 17 | 36 |
| 9 |  |  | 18 | 22 | 40 |
| 10 |  |  | 19 | 11 | 30 |
| 11 |  |  | 25 | 23 | 48 |
| 12 |  |  | 17 | 13 | 30 |
| 13 |  |  | 22 | 24 | 46 |
| 14 |  |  | 26 | 24 | 50 |
| 15 |  |  | 12 | 21 | 33 |
| 16 |  |  | 19 | 12 | 31 |
| 17 |  |  | 23 | 10 | 33 |
| 18 |  |  | 17 | 14 | 31 |
| 19 |  |  | 25 | 26 | 51 |
| 20 |  |  | 20 | 23 | 43 |
| 21 |  |  | AB | AB | AB |
| 22 |  |  | 13 | 21 | 34 |
| 23 |  |  | 31 | 12 | 43 |
| 24 |  |  | 19 | 21 | 40 |
| 25 |  |  | 21 | 13 | 34 |
| 26 |  |  | 26 | 11 | 37 |
| 27 |  |  | 17 | 16 | 33 |
| 28 |  |  | 15 | 15 | 30 |
| 29 |  |  | 24 | 21 | 45 |

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| 30 |  |  | 28 | 24 | 52 |
| 31 |  |  | 19 | 11 | 30 |
| 32 |  |  | 12 | 11 | 23 |
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| **<20** | | **20-30** | **31-40** | **41-50** | **51-60** |  | |
| 1 | | 1 | 16 | 11 | 2 |
|  | **TotalNo.ofCandidatesPresent** | | | | | | 31 |
| **TotalNo.ofCandidatesAbsent** | | | | | | 1 |
| **TotalNo.ofStudents Pass** | | | | | | 30 |
| **TotalNo.ofStudents Fail** | | | | | | 2 |
| **PercentageofPass** | | | | | | 93% |

### STAFFINCHARGE HoD/CSE PRINCIPAL







