**SHRISAI SHIKSHAN SANSTHA’S**

### NAGPUR INSTITUTE OF TECHNOLOGY, NAGPUR

##### DEPARTMENT OF INFORMATION TECHNOLOGY

**Odd Session: 2023-24 COURSE OUTCOMES**

|  |  |
| --- | --- |
| **Subject Name:** Digital Electronics & Fundamental | of Microprocessor |
| **Subject Code : BTIT303T** | **SEM / Branch: -III**/IT |

**========================================================================**

**COURSE OBJECTIVES:**

|  |  |
| --- | --- |
| 1 | To prepare student to apply basic fundamental knowledge of Digital Electronics in Information Technology practiceinvolving number system, logic gates and Boolean Algebra. |
| 2 | To prepare student to analyze, plan, design and solve various type of K-map up to Five variables. |
| 3 | To provide the students the knowledge regarding the various types of devices in combinational circuits. |
| 4 | . To provide the students the knowledge regarding the various types of Flip-flop and their conversion, types of counterin sequential circuit. The course will provide students with fundamental of Microprocessor 8085. |

**COURSE OUTCOMES:**

|  |  |  |
| --- | --- | --- |
| **S.NO** | **DESCRIPTION** | **PO(1..12) & PSO(1..2)****MAPPING** |
| CO1 | The student would be able to understand the importance and necessity of logic gates alsodetermine and solve the Boolean expression. | PO1,PO2,,PO4 |
| CO2 | The student would be able to solve various type of K-map in SOP & POS forms. | PO1,PO2,PO3,PO4 |
| CO3 | The student would be equipped with the basic knowledge related to design of combinationalcircuits. | PO3,PO4,PSO1 |
| CO4 | The student would be equipped with the basic knowledge related to design of sequentialcircuits, Flip-Flops, counters. | PO3,PO5,PSO1 |
| CO5 | The students should be able to understand of necessity of instructions, types of addressingmodes and instruction sets, programming for microprocessor. | PO1,PO2,PO3 |

**COURSE OUTCOMES VS POS MAPPING (**DETAILED; HIGH: 3; MEDIUM: 2; LOW: 1**):**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SNO** | **COURSE OUTCOMES** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO 3** |
| CO1 | The student would be able to understand the importance and necessity of logic gates also determine and solve the Booleanexpression. | 1 | 1 | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - |
| CO2 | The student would be able to solve various type of K-map in SOP& POS forms. | 1 | 1 | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - |
| CO3 | The student would beequipped with the basic | - | - | 3 | 3 | - | - | - | - | - | - | - | - | 3 | - | - |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | knowledge related to design of combinationalcircuits. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CO4 | The student would be equipped with the basic knowledge related to design of sequential circuits, Flip-Flops,counters. | - | - | 1 | - | 3 | - | - | - | - | - | - | - | 3 | - | - |
| CO5 | The students should be able to understand of necessity ofinstructions, types of addressing modes and instruction sets,programming formicroprocessor. | 2 | 2 | 2 | - | - | - | - | - | - | - | - | - | - | - | - |

*\* For Entire Course, PO /PSO Mapping; 1 (Low); 2(Medium); 3(High) Contribution to PO/PSO*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PO1F | EngineeringFKnowledgeF | PO7F | EnvironmentF&FSustainabilityF | PSO1F | DomainFSkills1F |
| PO2F | ProblemFAnalysisF | PO8F | EthicsF | PSO2F | DomainFSkills2F |
| PO3F | DesignF&FDevelopmentF | PO9F | IndividualF&FTeamFWorkF | F | F |
| PO4F | InvestigationsF | PO10F | CommunicationFSkillsF | F | F |
| PO5F | ModernFToolsF | PO11F | ProjectFMgt.F&FFinanceF | F | F |
| PO6F | EnginerrF&FSocietyF | PO12F | LifeFLongFLearningF | F | F |

F

**Prepared by Approved by**

**Prof. Tushar Shelke (HoD)**

**Dr. M. Makesar**

#### NAGPUR INSTITUTE OF TECHNOLOGY, NAGPUR

**DEPARTMENT OF INFORMATION TECHNOLOGY SESSION: 2023-2024**

## Data ware Housing and Mining

#### SEM: VII

**Session: 2023-2024**

##### Course: Data ware Housing and Mining Course Code: IT701T COURSE OUTCOMES:

###### On the successful completion of this course Student are able to

CO1: Design a Data warehouse system and perform business analysis with OLAP tools. CO2: Design a Data warehouse system and perform business analysis with OLAP tools. CO3: Apply frequent pattern and association rule mining techniques for data analysis. CO4: Design appropriate classification and clustering techniques for data analysis.

###### CO5: Infer knowledge from raw data.

**COURSE OUTCOMES VS POS MAPPING : (**DETAILED; HIGH: 3; MEDIUM: 2; LOW: 1**):**

|  |  |  |
| --- | --- | --- |
| **COs** | **PO** | **PSO** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **1** | **2** |
| 701.1 | 3 | 2 | 2 | 3 | - | - | - | - | - | - | - | 2 | 2 | 2 |
| 701.2 | 3 | 3 | 2 | - | - | - | - | - | - | - | - | 2 | 3 | 2 |
| 701.3 | 3 | 2 | 2 | 2 | - | - | - | - | - | - | - | 2 | 2 | 3 |
| 701.4 | 3 | 2 | 3 | 3 | - | - | - | - | - | - | - | 3 | 2 | 2 |
| 701.5 | 3 | 2 | 3 | 3 | - | - | - | - | - | - | - | 3 | 2 | 2 |
| AVG | **3** | **2** | **2** | **3** | - | - | - | - | - | - | - | **4** | **2** | **2** |
| 3/2/1 Indicates Strength of Correlation. 3-High, 2-Medium and 1-Low |

**Name of Faculty& Sign Name HOD & Sign Name of Dean (Acad) & Sign**

# NAGPUR INSTITUTE OF TECHNOLOGY

AICTE ID : 1-4830701

DTE Code: 4144

RTMNU College Code: 315

(Affiliated to RTM Nagpur University & Approved by AICTE New Delhi) CAMPUS: 13/2, Mahurzari, Near Fetri, Katol Road, Nagpur-441501, India

Email Id : registrar@nit.edu.in Web : [www.nit.edu.in](http://www.nit.edu.in/) Contact No. 09764974144

**SESSION: 2023-2024**

**Faculty Name : Monika R. Walde Semester/ Branch: - III -Sem -IT Subject Name: Emerging Trends in IT**

**Subject code:- BTIT304T Course Outcome:** At the end of this course students are able to:

|  |  |  |
| --- | --- | --- |
|  | CO1 | Create a business case for an emerging information technology. |
| CO2 | Identify factors affecting the successful adoption of new informationtechnologies. |
| CO3 | Identify the key attributes, business benefits, risks, and cost factors of a newtechnology. |
| CO4 | Know how to effectively use advanced search and selection metrics foridentifying and selecting new technology. |
| CO5 | Describe technology trends that presently drive or are expected to drive theselection of new technologies over the next decade. |
| CO6 | To done analytical and logical skills for problem solving. |
|  | **COs** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |  |
| **CO1** | **3** | **3** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **3** |  |
| **CO2** | **3** | **2** | **-** | **-** | **3** | **-** | **-** | **-** | **-** | **2** | **-** | **2** |  |
| **CO3** | **2** | **3** | **3** | **-** | **2** | **2** | **-** | **-** | **3** | **-** | **-** | **-** |  |
| **CO4** | **3** | **2** | **-** | **-** | **2** | **3** | **-** | **-** | **3** | **-** | **-** | **3** |  |
| **CO5** | **3** | **2** | **-** | **-** | **2** | **2** | **-** | **-** | **2** | **-** | **-** | **3** |  |
| **CO6** | **3** | **2** | **-** | **-** | **2** | **2** | **-** | **-** | **2** | **-** | **2** | **3** |  |

##### Prepared by- Approved by-Dept. Head

###### ( Prof.Monika Walde ) (Dr.M.Makesar)

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**NAGPUR INSTITUTE OF TECHNOLOGY, NAGPUR**

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**SESSION: 2023-2024**

**Faculty Name : Nidhi D.Rathi**

#### Semester/ Branch: - V- Sem / IT

**Subject Name: Gaming Architecture & Programming Subject Code:- BEIT505T.1**

**Course Outcome:** At the end of this course students are able to:

|  |  |  |
| --- | --- | --- |
|  | CO1 | Discuss the concept of Game design and development. |
| CO2 | Design the processes and use mechanics for game development. |
| CO3 | Explain the Core architecture of Game Programming. |
| CO4 | Use game programming platforms, frameworks and engines. |
| CO5 | Create Interactive Games. |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **COs** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CO1** | **3** | **2** | **-** | **-** | **2** | **-** | **-** | **-** | **2** | **3** | **-** | **3** |
| **CO2** | **3** | **2** | **2** | **-** | **2** | **-** | **-** | **-** | **3** | **3** | **-** | **3** |
| **CO3** | **3** | **3** | **3** | **3** | **3** | **2** | **-** | **-** | **3** | **3** | **3** | **3** |
| **CO4** | **3** | **2** | **3** | **2** | **3** | **-** | **-** | **-** | **3** | **3** | **3** | **3** |
| **CO5** | **3** | **3** | **3** | **2** | **3** | **-** | **2** | **-** | **-** | **3** | **3** | **3** |

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(Prof. N.D.Rathi) (Dr.M.Makeshwar)

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AICTE ID : 1-4830701

DTE Code: 4144

RTMNU College Code: 315

**SESSION: 2023-2024**

**Faculty Name : Monika R. Walde Semester/ Branch: - V -Sem -IT Subject Name: JavaProgramming Subject code:- BTIT503T**

**Course Outcome:** At the end of this course students are able to:

|  |  |  |
| --- | --- | --- |
|  | CO1 | Understand the basic data types and control flow constructs using J2SE. |
| CO2 | Make use of various Object Oriented Concept like inhertances,data hiding,Exception Handling etc. to implenments various program in java. |
| CO3 | Understand the concept of Multi threading & Multi programming. |
| CO4 | Implenetation of String class,Date class, Time class & Calender Class inVarious micro projects. |
| CO5 | Understand the concept of Collections Framework. |
|  | **COs** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CO1** | **3** | **2** | **3** | **-** | **3** | **-** | **-** | **-** | **2** | **1** | **2** | **3** |
| **CO2** | **3** | **2** | **3** | **1** | **2** | **-** | **-** | **-** | **2** | **2** | **2** | **3** |
| **CO3** | **2** | **2** | **3** | **2** | **2** | **-** | **1** | **-** | **2** | **-** | **2** | **3** |
| **CO4** | **3** | **2** | **-** | **2** | **2** | **-** | **-** | **-** | **2** | **2** | **2** | **3** |
| **CO5** | **3** | **2** | **3** | **1** | **2** | **-** | **-** | **-** | **2** | **1** | **2** | **2** |

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###### ( Prof.Monika Walde ) (Dr.M.Makesar)

Page **1** of **1**

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DTE Code: 4144

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**COURSE OUTCOME**

**At the end of course students are able to:**

|  |  |
| --- | --- |
| **BTIT703T.3** | **Mobile Computing** |
| **CO1** | To understand the basic concepts of Wireless Communication with Cellular system. |
| **CO2** | To learn about GSM system with Cell layout, Radio, Network Switching and Operation subsystem, HLR& VLR. |
| **CO3** | To learn Wireless LAN with its Architecture and MAC Layer. |
| **CO4** | To learn Mobile IP, Dynamic Host Configuration Protocol, Mobile Ad hoc Networks. |
| **CO5** | To learn about TCP over Wireless Networks with Wireless Application Protocol. |

**PROGRAMME OUTCOMES**

**At the end of this program graduate should be able to:**

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate and analyze real world problems to reach substantial conclusions using computer science and engineering concepts.
3. **Design/development of solutions:** Design a system component and process to meet desired needs.
4. **Conduct investigations of complex problems:** use research based knowledge and methods including design, interpretation of data, analysis & synthesis of the information to provide valid conclusion.
5. **Modern tool usage:** apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** communicate effectively both in written & oral formats.
7. **Environment and sustainability:** Understand the impact of professional engineering solutions in societal and environmental contexts.
8. **Ethics:** Demonstrate professional skills and ethics.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Ability to communicate effectively with peer community and society on complex software/system engineering activities through unambiguous spoken language, written reports, presentations.
11. **Project management and finance:** Ability to apply the knowledge of Engineering and Management principles to manage projects as a team member or leader in multidisciplinary teams.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**CO- PO MAPPING:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CO/PO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 3 | 3 | 2 | - | 2 | - | 1 | - | - | - | - | 3 |
| CO2 | 1 | 2 | 3 | - | - | - | 2 | - | 1 | - | 1 | 3 |
| CO3 | 3 | 3 | 1 | - | 3 | - | - | - | 2 | - | 1 | 3 |
| CO4 | 3 | 3 | - | - | 2 | - | - | - | - | - | 1 | 3 |
| CO5 | 3 | 2 | 3 | - | 1 | - | - | - | - | - | 1 | 2 |

**Prepared by Checked by**

**Dept. Academic Coordinator**

**Approved by Head, IT**

(Prof. P. Sonewane) (Prof. A. Burghate) (Dr. M. Makesar)

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**COURSE OUTCOME**

**At the end of course students are able to:**

|  |  |
| --- | --- |
| **BTIT704T.3** | **Open Elective (DBMS)** |
| **CO1** | Understand the basics of DBMS to analyze an information prolem in the form of an Entity relation anddesign an appropriate data model for it. |
| **CO2** | Demonstrate basics of File organizations and its types. |
| **CO3** | Interpret functional dependencies and various normalization forms. |
| **CO4** | Perform basic transaction processing and management. |
| **CO5** | Demonstrate SQL queries to perform CRUD (Create, Retrieve, Update, Delete) operations on database. |

**PROGRAMME OUTCOMES**

**At the end of this program graduate should be able to:**

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate and analyze real world problems to reach substantial conclusions using computer science and engineering concepts.
3. **Design/development of solutions:** Design a system component and process to meet desired needs.
4. **Conduct investigations of complex problems:** use research based knowledge and methods including design, interpretation of data, analysis & synthesis of the information to provide valid conclusion.
5. **Modern tool usage:** apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** communicate effectively both in written & oral formats.
7. **Environment and sustainability:** Understand the impact of professional engineering solutions in societal and environmental contexts.
8. **Ethics:** Demonstrate professional skills and ethics.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Ability to communicate effectively with peer community and society on complex software/system engineering activities through unambiguous spoken language, written reports, presentations.
11. **Project management and finance:** Ability to apply the knowledge of Engineering and Management principles to manage projects as a team member or leader in multidisciplinary teams.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**CO- PO MAPPING:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CO/PO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 3 | 3 | 2 | - | 2 | - | 1 | - | - | - | - | 3 |
| CO2 | 1 | 2 | 3 | - | - | - | 2 | - | 1 | - | 1 | 3 |
| CO3 | 3 | 3 | 1 | - | 3 | - | - | - | 2 | - | 1 | 3 |
| CO4 | 3 | 3 | - | - | 2 | - | - | - | - | - | 1 | 3 |
| CO5 | 3 | 2 | 3 | - | 1 | - | - | - | - | - | 1 | 2 |

**Prepared by Checked by**

**Dept. Academic Coordinator**

**Approved by Head, IT**

(Prof. P. Sonewane) (Prof. A. Burghate) (Dr. M. Makesar)

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**DEPARTMENT OF INFORMATION TECHNOLOGY**

**CO-PO Mapping**

#### Semester/ Branch: - III-Sem -IT Subject code: -BEIT302T

**Subject Name: Programming Logic and Design using ‘C’ Name of Faculty: Prof. M. P. Moon**

**Course Outcome:**

|  |  |
| --- | --- |
| CO1 | Acquire fundamental knowledge of c programming language. |
| CO2 | Apply Array, functions and pointer techniques in program development. |
| CO3 | Able to implement programs on subroutines / functions, structure, union |
| CO4 | Apply knowledge of console programming for file handling and real time applications |
| CO5 | Apply knowledge of memory management related research and graphics for businessapplications and area. |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** | **PO 9** | **PO 10** | **PO 11** | **PO 12** |
| **CO 1** |  |  |  |  |  | 2 |  |  |  |  |  | 3 |
| **CO 2** | 2 | 1 | 3 | 2 |  |  |  |  | 1 |  | 2 | 3 |
| **CO 3** | 2 |  |  |  |  | 2 |  |  | 2 |  | 2 | 3 |
| **CO 4** |  |  |  | 2 |  |  |  |  | 2 |  | 3 | 3 |
| **CO 5** | 3 |  |  |  |  | 2 |  |  | 2 |  | 3 | 3 |

|  |  |  |
| --- | --- | --- |
| **Name of Faculty** | **Dean Academics** | **HOD (IT)** |
| **Prof. M. P.Moon** | **Dr. J. G. Chaudhari** | **Dr. M. Makesar** |

**NAGPUR INSTITUTE OF TECHNOLOGY, NAGPUR**

**DEPARTMENT OF INFORMATION TECHNOLOGY ODD SESSION: 2023-2024**

**Semester/ Branch: - V -SEM -IT**

#### Subject Name: Software Engineering & Project Management (BEIT501T) Faculty Name: Arti Burghate

**Course Outcome:**



|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **COs** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CO1** | **3** |  | **1** |  |  |  | **1** |  | **1** | **1** |  | **1** |
| **CO2** |  | **2** | **1** |  |  |  |  |  |  | **1** |  |  |
| **CO3** |  |  | **3** | **1** |  |  |  |  |  | **1** | **1** |  |
| **CO4** | **2** | **3** | **2** |  |  |  |  |  | **1** | **2** |  |  |
| **CO5** |  | **2** | **3** |  |  |  |  |  | **1** | **1** | **2** | **1** |

|  |  |  |
| --- | --- | --- |
| Ms.Arti Burghate | Dr.Mahendra Makesar | Dr.J.G.Chaudhari |
| Name of Faculty | HOD, IT | DEAN ACADEMICS |

**NAGPUR INSTITUTE OF TECHNOLOGY, NAGPUR**

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**SESSION: 2023-2024**

**Faculty Name :Ankita.shende Semester/ Branch: - III sem-IT Subject Name: System Programming Subject code:- BTIT305T**

**Course Outcome:** At the end of this course students are able to:

|  |  |  |
| --- | --- | --- |
|  | CO1 | To understand the basics of system programmer like editors,compiler,linkers , loaders interpreter and macro |
| CO2 | To understand & and design of object code generation through translator(assembler) |
| CO3 | To understand the interlinking functions in program with macro & it’s processing |
| CO4 | To understand how linker and loader create an executable program from anobject module created by assembler and compiler |
| CO5 | To understand the various phases of complier and various drivers in UNIX |
|  | And difference between Unix and operating system |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **COs** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CO1** | **3** | **2** | **1** | **-** | **2** | **-** | **-** | **2** | **-** | **2** | **2** | **2** |
| **CO2** | **2** | **2** | **3** | **-** | **2** | **-** | **-3** | **-** | **2** | **-** | **3** | **-** |
| **CO3** | **3** | **3** | **\_** | **\_** | **2** | **-** | **-** | **-** | **2** | **\_** | **\_** | **\_** |
| **CO4** | **-** | **-** | **\_** | **2** | **\_** | **-** | **2** | **-** | **\_** | **\_** | **\_** | **2** |
| **CO5** | **3** | **1** | **3** | **\_** | **3** | **\_** | **\_** | **1** | **-** | **\_** | **2** | **2** |

#### Prepared by- Approved by-Dept. Head

( Prof Anki**ta shende )** (Dr.M.Makeshwar)

**NAGPUR INSTITUTE OF TECHNOLOGY, NAGPUR**

##### DEPARTMENT OF INFORMATION TECHNOLOGY ODD SESSION: 2023-2024

**------------------------------------------------------------------------------------------------------------------------------- CO PO MAPPING**

##### Semester/ Branch: - V Sem -IT Subject code: - BEIT504T Subject Name: Theory of Computation

**Course Outcome:**

|  |  |
| --- | --- |
| **CO1** | Define what is regular language and construct finite automata for it. |
| **CO2** | Construct equivalence among regular language regular expression regularGrammer |
| **CO3** | Formulate equation for pushdown automata |
| **CO4** | Identify the characteristics of problem for which no computation solutionexit |
| **CO5** | Understand the concepts of P vs. NP vs. NP complete |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CO1** | 3 | 3 | 3 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 3 |
| **CO2** | 3 | 3 | 3 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| **CO3** | 3 | 3 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| **CO4** | 3 | 2 | 1 | 1 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| **CO5** | 3 | 2 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 2 |

**NAGPUR INSTITUTE OF TECHNOLOGY, NAGPUR**

**DEPARTMENT OF INFORMATION TECHNOLOGY ODD SESSION: 2023-2024**

**Semester/ Branch: - III -SEM -IT**

**Subject Name: Universal Human Values (BEIT307T) Faculty Name: Arti Burghate**

#### Course Outcomes:



|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **COs** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CO1** | **-** |  |  |  |  |  | **2** | **2** |  | **3** |  | **3** |
| **CO2** |  |  |  |  |  |  | **2** | **2** |  | **3** |  | **3** |
| **CO3** |  |  |  |  |  |  | **2** | **2** |  | **3** |  | **3** |
| **CO4** |  |  |  |  |  |  | **2** | **2** |  | **3** |  | **3** |

|  |  |  |
| --- | --- | --- |
| Ms.Arti Burghate | Dr.Mahendra Makesar | Dr.J.G.Chaudhari |
| Name of Faculty | HOD, IT | DEAN ACADEMICS |

**NAGPUR INSTITUTE OF TECHNOLOGY, NAGPUR DEPARTMENT OF INFORMATION TECHNOLOGY SESSION: 2023-2024**

**Faculty Name :Ankita.shende Semester/ Branch: - Vsem-IT Subject Name: Yoga & Mediation Subject code:- BTIT508T**

**Course Outcome:** At the end of this course students are able to:

|  |  |  |
| --- | --- | --- |
|  | CO1 | Learn the fundamental and skills and strategies of yoga. |
| CO2CO3 | Learn various (postures) such hatha yoga and lyengar methods |
|  | Learning breathing techniques |
| CO4 | Improve strength, flexibility and sense of well being. |
|  |  |
|  | Increase relaxation of body and soul. |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **COs** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CO1** | **3** | **2** | **1** | **-** | **2** | **-** | **-** | **2** | **-** | **2** | **2** | **2** |
| **CO2** | **2** | **2** | **3** | **-** | **2** | **-** | **-3** | **-** | **2** | **-** | **3** | **-** |
| **CO3** | **3** | **3** | **\_** | **\_** | **2** | **-** | **-** | **-** | **2** | **\_** | **\_** | **\_** |
| **CO4** | **-** | **-** | **\_** | **2** | **\_** | **-** | **2** | **-** | **\_** | **\_** | **\_** | **2** |
| **CO5** | **3** | **1** | **3** | **\_** | **3** | **\_** | **\_** | **1** | **-** | **\_** | **2** | **2** |

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( Prof Anki**ta shende )** (Dr.M.Makeshwar)

### NAGPUR INSTITUTE OF TECHNOLOGY, NAGPUR

##### DEPARTMENT OF INFORMATION TECHNOLOGY ODD SESSION: 2023-2024

**-------------------------------------------------------------------------------------------------------------------------------**

##### CO PO MAPPING

**Semester/ Branch: - VI Sem -IT Subject code: - BEITIT702.2T Subject Name: Computer Network Security**

|  |  |
| --- | --- |
| **CO1** | To understand basics of Cryptography and Network Security and classify the symmetric encryption techniques. |
| **CO2** | Understand, analyze and implement the symmetric key algorithm for secure transmission of data |
| **CO3** | Acquire fundamental knowledge about the background of mathematics of asymmetric key cryptography and understand and analyze asymmetric key encryption algorithms and digital signatures |
| **CO4** | Analyze the concept of message integrity and the algorithms for checking the integrity of data |
| **CO5** | To understand various protocols for network security to protect against the threats in the networks.6. |

Course Outcome:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO1 0** | **PO1 1** | **PO12** |
| **CO1** | 3 | 3 | - | 1 | - | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| **CO2** | 3 | 2 | 2 | 2 | - | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| **CO3** | 3 | 2 | 1 | 2 | - | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| **CO4** | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **CO5** | 3 | 2 | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 | 1 | 2 |

# NAGPUR INSTITUTE OF TECHNOLOGY

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AICTE ID : 1-4830701

DTE Code: 4144

RTMNU College Code: 315

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**CO-PO Mapping**

#### Semester/ Branch: - V-Sem -IT Subject code: -BEIT502T

**Subject Name: Design and Analysis of Algorithms Name of Faculty: Prof. M. P. Moon**

**Course Outcome:**

|  |  |
| --- | --- |
| CO1 | Illustrate different approaches for analysis and design of efficient algorithms and Analysis performance of various algorithms using asymptotic notations |
| CO2 | Determine and Apply various divide & conquer strategies and greedy approaches for solving a given computational problem |
| CO3 | Demonstrate and Solve various real time problems using the concepts of dynamic programming |
| CO4 | Make use of backtracking and graph traversal techniques for solving real-world problems |
| CO5 | Recall and Classify the NP-hard and NP- complete problems |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** | **PO 9** | **PO 10** | **PO 11** | **PO 12** |
| **CO 1** |  | 3 | 3 |  |  | 1 |  |  | 2 |  |  | 2 |
| **CO 2** | 2 | 2 | 3 | 2 |  | 1 |  |  | 2 |  |  | 2 |
| **CO 3** | 2 | 3 | 3 | 2 |  |  | 2 |  | 2 |  |  | 2 |
| **CO 4** | 1 | 2 | 3 | 2 |  |  |  |  | 2 |  |  | 1 |
| **CO 5** | 2 | 1 | 1 | 3 |  |  | 2 | 2 | 3 | 2 |  | 2 |

|  |  |  |
| --- | --- | --- |
| **Name of Faculty** | **Dean Academics** | **HOD (IT)** |
| **Prof. M. P.Moon** | **Dr. J. G. Chaudhari** | **Dr. M. Makesar** |