



## Koneru Lakshmaiah Education Foundation

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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

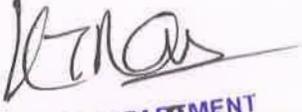
### Minutes of 28<sup>th</sup> Board of Studies Meeting

24<sup>th</sup> May 2022

28<sup>th</sup> BOS meeting of Computer Science and Engineering Department held on 24<sup>th</sup> May 2022 in online mode (Microsoft Teams) from 2:00 PM to 5:00PM.

#### The Following members were present:

1. Dr. K. THIRUPATHI RAO, PROFESSOR, CHAIRMAN
2. Dr. G PARDHA SARADHI VARAMA, VICE CHANCELLOR, MEMBER
3. Dr. MADHU MUTHYAM, PROFESSOR, EXTERNAL MEMBER
4. Dr. AMARALINGESWARA RAO KAKA, PROGRAM DIRECTOR, EXTERNAL MEMBER
5. Mr. JAGAN MOHAN CHEVVAKULA, Sr. QA MANAGER, EXTERNAL MEMBER
6. Mr. V. HARI KIRAN, ASSOCIATE PROFESSOR, MEMBER
7. Dr. T PAVAN KUMAR, PROFESSOR, MEMBER
8. Dr. CHIRANJEEVI, PROFESSOR, MEMBER
9. Dr. N. SRINIVASU, PROFESSOR, MEMBER
10. Dr. K.V. DURGA KIRAN, PROFESSOR, MEMBER
11. Dr. A SENTHIL, PROFESSOR, MEMBER
12. Dr. MD. MOULANA, PROFESSOR, MEMBER
13. Dr. T. SANTHI SRI, PROFESSOR, MEMBER
14. Dr. A. V PRAVEEN KRISHNA, ASSOC.PROFESSOR, MEMBER

  
HEAD OF THE DEPARTMENT  
Computer Science and Engineering  
KLEF, (Deemed to be University)  
Green Fields, VADDESWARAM-522 302,  
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15. Dr. M. SRINIVAS , PROFESSOR, MEMBER
16. Dr. VSRK SHARMA, PROFESSOR, MEMBER
17. Dr. M. NAGESWARA RAO, PROFESSOR, MEMBER
18. Dr. P. RAJARAJESWARI, PROFESSOR, MEMBER
19. Dr. M KAVITHA, ASSOC.PROFESSOR, MEMBER
20. Dr. V. CHANDRA PRAKASH, PROFESSOR, MEMBER
21. Dr. V. SRIKANTH, PROFESSOR, MEMBER
22. Dr. Y. PRASANTH, PROFESSOR, MEMBER
23. Dr. K RAJASEKHAR, PROFESSOR, MEMBER
24. Dr. B. VIJAYA BABU, PROFESSOR, MEMBER
25. Dr. K.V. RAJU, PROFESSOR, MEMBER
26. Dr. K.V.V. SATYANARAYANA, PROFESSOR, MEMBER
27. Dr. V. KRISHNA REDDY, PROFESSOR, MEMBER
28. Dr. G. PRADEEPINI, PROFESSOR, MEMBER
29. Dr. GANDHARBA SWAIN, PROFESSOR, MEMBER
30. Dr. S. SAGAR IMAMBI, PROFESSOR, MEMBER
31. Dr. K. BHANU PRAKASH, PROFESSOR, MEMBER
32. Dr. E. VAMSIDHAR, PROFESSOR, MEMBER
33. Dr. VELMURUGAN A K, PROFESSOR, MEMBER

*KINAS*  
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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

34. Dr. VITHYA GANESAN, PROFESSOR, MEMBER
35. Dr. B. SRINIVASA RAO, PROFESSOR, MEMBER
36. Dr. DEBNATH BHATTACHARYA, PROFESSOR, MEMBER
37. Dr. SURYAKANTH. V GANGASHETTY, PROFESSOR, MEMBER
38. Dr. D. GOVIND, PROFESSOR, MEMBER
39. Dr. SANDEEP KUMAR, PROFESSOR, MEMBER
40. Dr. K SAMUDRAVIJAYA, PROFESSOR, MEMBER
41. Dr. ANIRUDDHA BHATTACHARYA, PROFESSOR, MEMBER
42. Dr. VISHWANATHAN RAMASAMY REDDY, PROFESSOR, MEMBER
43. Dr. ELAI RENGASARI NAGANATHAN, PROFESSOR, MEMBER
44. Dr. KANDEPU BALA VENKATA BRAHMARAO, PROFESSOR, MEMBER
45. Dr. T K RAMA KRISHNA RAO, PROFESSOR, MEMBER
46. Dr. YOGESH KUMAR SHARMA, PROFESSOR, MEMBER
47. Dr. V. MURUGESH, PROFESSOR, MEMBER
48. Dr. LEENA ARYA, PROFESSOR, MEMBER
49. Dr. RAVI RASTOGI, PROFESSOR, MEMBER
50. Dr. MEERAJ KHALIM AMJAD, PROFESSOR, MEMBER
51. Dr. G. SIVA NAGESWARA RAO, PROFESSOR, MEMBER
52. Dr. VENU BABU R, ASSOC.PROFESSOR, MEMBER

*KLNas*  
24/15/22  
HEAD OF THE DEPARTMENT  
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### **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

53. Dr. ASHESH K, ASSOC.PROFESSOR, MEMBER

54. Dr. SAI BABA CH, ASSOC.PROFESSOR, MEMBER

55. Dr. B VIJAY KUMAR, ASSOC.PROFESSOR, MEMBER

56. Dr. K. RAVINDRANATH, ASSOC.PROFESSOR, MEMBER

57. Dr. RAJU ANITHA, ASSOC.PROFESSOR, MEMBER

58. Dr. P. VENKATESWARA RAO, ASSOC.PROFESSOR, MEMBER

59. Dr. K. AMARENDRA, PROFESSOR, DEPARTMENT OF CS&IT, MEMBER

60. Dr. B THIRUATHI REDDY, PROFESSOR, DEPARTMENT OF AI&DS, MEMBER

61. Dr. B. V. APPA RAO, PROFESSOR, DEPARTMENT OF MATHS, MEMBER

62. Dr. SHANMUKH KUMAR, PROFESSOR, DEPARTMENT OF CHEMISTRY, MEMBER

63. Dr. M. KAMESWARA RAO, PROFESSOR, DEPARTMENT OF ECM, MEMBER

64. Dr. B. T. P. MADHAV, PROFESSOR, DEPARTMENT OF ECE, MEMBER

65. Dr. M. V. V. K. SRINIVAS PRASAD, PROFESSOR, DEPARTMENT OF PHYSICS, MEMBER

66. Ms. M SURYA, B. Tech STUDENT, STUDENT MEMBER

67. Ms. PAVAN SAI, B. Tech STUDENT, STUDENT MEMBER

68. Mr. SAI SIVA, B. Tech STUDENT, STUDENT MEMBER

69. Miss. KARISHMA, B. Tech STUDENT, STUDENT MEMBER

70. Miss. G REEMA, M. Tech STUDENT, STUDENT MEMBER

*Binay*  
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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

71. Mr. KALYAM CHAKRAVARTHI NARAYANA, M. Tech STUDENT, STUDENT MEMBER

**The following members were absent:**

1. MR. RAMESH KUMAR DACHA, ASSOCIATE DIRECTOR, EXTERNAL MEMBER
2. DR. TARUN NARAYAN SHANKAR, PROFESSOR, MEMBER
3. DR. MANOJ WADHWA, PROFESSOR, MEMBER
4. DR. ARPIT JAIN, PROFESSOR, MEMBER

The Chairman, BoS welcomed all the members to the BoS meeting and started the meeting by highlighting the Vision & Mission statements of the department and the University. He also presented PEOs, POs and PSOs of the program.

*[Signature]*  
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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### AGENDA and RESOLUTIONS

#### AGENDA ITEM-1

Consider and approve DAC minutes held on 22 <sup>nd</sup> May 2022.	Resolution: Approved DAC minutes and recommended to Academic Council for approval.
---	--

- Chairman of BoS commenced the meeting by welcoming and introducing the external members, to the internal and co-opted members and thanked them for accepting to become the member of the Board of Studies.
- Chairman of the BoS informed all the members about the Department Academic Committee (DAC) meeting held on 22<sup>nd</sup> May 2022 (Agenda Item No: 1) and highlighted the major resolutions of discussion.

It is resolved to approve the recommendations made by DAC. **Annexure-1 DAC minutes (Dt: 22-05-2022)**

#### AGENDA ITEM-2

Proposed to introduce two courses under engineering science category for B.Tech-CSE 2022-23 admitted Batch students based on the feedback received from stakeholders	Resolution: Approved the introduced courses for B.Tech-CSE 2022-23 admitted Batch students and the same is recommended to Academic Council for approval
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- Dr. Md. Mujahid, Academic Peer, Recommend the introduction of a new course on "Introduction to Electronic Systems and IoT" at our institution. In today's rapidly evolving technological landscape, this course has the potential to provide students with invaluable knowledge and skills that are highly relevant to the modern world. It is resolved to approve the introduction of the new course "Introduction to Electronic Systems and IoT" for 2022-23 admitted batch CSE students.
- Dr. A. Srinath, Dean-Skill Development, recommend including an IoT workshop as an integral part of the curriculum. This hands-on experience will provide students with practical skills in IoT technology, enhancing their understanding and employability in the rapidly evolving field of Internet of Things. The BoS recognized the importance of preparing students for the rapidly evolving

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technology landscape and acknowledges that this workshop will enhance their practical knowledge and skills in the field of IoT. It is resolved to approve the introduction of the new course "IoT Workshop" for 2022-23 admitted batch CSE students.

S. No	Course Code	Course Title	Course Type	Credits	Remarks
1	22EC1102	Introduction to Electronic Systems & IoT	Engineering Science	2	Introduced to provide basic knowledge on electronic systems and IoT components to the students
2	22SC1209	IoT Workshop	Engineering Science	2	Introduced in place of Design Tools Workshop-II course.

**The detailed syllabus for the list of proposed courses is given in Annexure-2(a)**

**The detailed feedback and action taken report is presented in Annexure-2(b)**

### AGENDA ITEM-3

Consider and approve the curriculum structure of B.Tech-CSE, M.Tech-CSE and M.Tech-AI&DS programs offered for 2022-23 admitted batch students.	Resolution: Approved 2022-23 admitted batch B.Tech and M.Tech curriculum structures and recommended to Academic Council for approval.
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The BOS members discussed the proposed course structures of B.Tech-CSE, M.Tech-CSE and M.Tech-AI&DS, 2022-23 admitted batches of Computer Science and Engineering department.

- Dr. K Thirupathi Rao, Chairman BOS discussed the category wise courses and credits of B.Tech CSE curriculum structure. 2022-23 Admitted batch B. Tech CSE requires a minimum of 164 credits to acquire Regular Degree.
- Students require an extra 20 credits to acquire an Honor Degree. For these extra 20 credits, students must take the courses in advance or peer mentor mode from those offered in Professional Core, Professional Electives, skill development and Project categories.
- The variation in credits and evolution procedure of advance and peer mentor courses is discussed and approved.

*K.L.Rao*  
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- The BoS members approved the proposed changes and agreed that these changes are necessary for B.Tech Computer Science and Engineering students to be ready as per industry needs.
- Dr K. Thirupathi Rao discussed the curriculum structure of M.Tech-CSE and M.Tech-AI&DS. All the BOS members agree that it is well designed and covers a wide range of topics and needs.

**The detailed Course Structure of B.Tech-CSE 2022-23 admitted batch is given in Annexure-3(a)**

**The detailed Course Structure of M.Tech-CSE, M.Tech -AI&DS 2022-23 admitted batch is given in Annexure-3(b)**

### AGENDA ITEM-4

Consider and approve the Program Development Document for syllabus of B.Tech & M.Tech programs offered for 2022-23 admitted batch students	Resolution: Approved the Program Development Document (PDD) for syllabus of B.Tech & M.Tech programs offered for 2022-23 admitted batch students
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- By considering all the changes in curriculum, PDDs for 2022-23 B.Tech and M.Tech admitted batches are discussed.
- It is resolved to approve the PDDs of B.Tech and M.Tech programs of 2022-23

**The detailed Program Development Document for B.Tech Computer Science and Engineering Program is given in Annexure-4(a).**

**The detailed Program Development Document for M.Tech Computer Science and Engineering Program is given in Annexure-4(b).**

**The detailed Program Development Document for M.Tech Artificial Intelligence & Data Science Program is given in Annexure-4(c).**

### AGENDA ITEM-5

Consider and approve the list of MOOCs courses proposed for 2022-23 admitted batch students.	Resolution: The courses offered in MOOC's mode are discussed and finalized. The courses are recommended to the Academic Council for approval.
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*10/10/2022*  
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BoS members are agreed to offer Open Elective, Management Elective, Foreign Language elective courses through MOOCs (Coursera, NPTEL) platform to provide academic flexibilities and to develop more effective learning experiences for the students.

It is resolved that the list of MOOC's Courses is approved for the students of B.Tech -CSE 2022-23 admitted batch. The resolution is recommended to the Academic Council for approval.

**The detailed list of recommended MOOCs Courses is given through Annexure-5.**

### AGENDA ITEM-6

Consider and approve the list of Value-Added courses proposed for 2022-23 admitted batch students.

Resolution: List of Value-Added courses are finalized and recommended to Academic Council for approval.

To enrich the curriculum and to provide students with the skills they need to succeed in the workplace, all the BoS members are recommended to offer a list of value-added courses to 2022-23 admitted batch students.

It is resolved to offer the proposed list of value-added courses to 2022-23 B.Tech admitted batch students. The resolution is recommended to the Academic Council for approval.

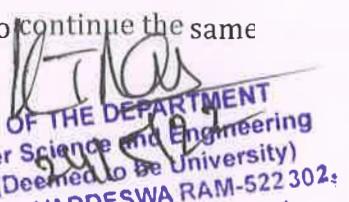
**The detailed list of Value-Added Courses is given in Annexure-6.**

### AGENDA ITEM-7

Discussion on the skill development and progression of the students.

Resolution: Resolution for the list of courses and certifications with respect to the cohorts and specializations is approved and recommended to Academic Council for approval.

The courses and list of certifications that can be offered to the students of Y20 & Y21 with respect to the cohorts and specialization have been discussed with the committee members and received approval for the same. The academic progression of CSE students for the Academic Year: 2021-22 is discussed by projecting the detailed result analysis. The members congratulated for getting good results also suggested to continue the same for coming academic year.

  
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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

**Detailed discussion on Skill Development and Progression is given in Annexure-7.**

### AGENDA ITEM-8

Discussion on National Educational Policy implementation.	Resolution: The possible implementation of newly proposed National Education Policy related to the CSE department was stated to introduce from Y22 admitting batch. It is approved and recommended to Academic Council for approval.
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The possible implementation of the newly proposed National Education Policy related to the department was stated to introduce from Y22 admitting batch, discussed with the committee members, and received approval for the same.

National Education Policy implementation discussion is attached through **Annexure 8.**

### AGENDA ITEM-9

Discuss and approve the work in lieu committee recommendation on Y13 admitted batch student.	Resolution: Work in Lieu committee recommendation on Ms Lavanya (13003015) application is approved and recommended to Academics Council for approval
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Based on the work in lieu committee recommendations, Ms V Lavanya (13003015) has been given work equivalence for the following subjects:

- 13CS402 Simulation and Modelling
- 13MP401 Mini Project

**Detailed discussion on Work in Lieu Committee Recommendation is attached through Annexure-9.**

### AGENDA ITEM-10

Discuss and approve the minor degree programs offered by CSE for B.Tech 2022-23 admitted batch students.	Resolution: Minor degree programs proposed for B.Tech 2022-23 admitted batch students are approved and recommended to Academic Council for approval.
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*M. T. A.*  
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BoS Chairman discussed the minor degree programs proposed for 2022-23 admitted batch students and got the approval on the following programs from all the BOS members. The same is recommended to academic council for approval.

- MINOR DEGREE in Computer Science
- MINOR DEGREE in Computer Engineering
- MINOR DEGREE in Web Engineering

**Minor degree programs and a list of courses is given in Annexure-10.**

### AGENDA ITEM-11

Discuss and approve the honours degree with specialization for 2022-23 admitted batch B.Tech students.

Resolution: The courses offered to CSE students to pertain Honors Degree with specializations are approved and recommended to Academics Council for approval.

The courses that are offered to CSE students to pertain Honors Degree with specializations were discussed with the committee members and received approval for the same.

**Detailed list of courses recommended to offer in advance and peer mentor mode, Honors Degree programs with Specializations is attached through Annexure 11.**

### AGENDA ITEM-12

Other points:

Discuss and approve the Proposal on SAC activities and the Courses relating AICTE-SLA 'Parakh' Program.

Resolution: SAC activities and the Courses relating AICTE-SLA 'Parakh' Program are approved and recommended to Academic Council for approval.

Proposed SAC activities along with outcomes and **AICTE-SLA 'Parakh'** mapped courses for 2022-23 admitted batch are discussed. It is resolved to approve the same and the list on **discussed points are given in Annexure 12a and Annexure 12b.**

*[Signature]*  
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

## Screenshots of BOS meeting:

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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### Annexure-1

#### DEPARTMENT ACADEMIC COMMITTEE MEETING MINUTES

##### **Minutes of the DAC Meeting-Computer Science and Engineering Department held on 22-05-2022 (Saturday) from 3.30 P.M to 5:00 PM Online (Microsoft Teams).**

The head of the department welcomed DAC members and started the meeting by highlighting the Vision & Mission statements of Department and University, also he discussed PEOs and PO statements of the programs.

The following Agenda Items are discussed, and the resolutions passed are marked against them:

1. To discussion about 2021-2022 Even Semester Course Closure Minutes
2. To discuss result analysis of 2021-2022 Even Semester courses.
3. To discuss about CO-PO Attainment of courses in 2021-2022 Even Semester
4. To discuss about Gap Analysis report on CO-PO Attainment and Teaching Pedagogy
5. To discuss the feedback received from stake holders on curriculum.
6. To discuss about proposed curriculum for B.Tech -CSE 2022-23 admitting batch
7. To discuss about new courses proposed for B.Tech -CSE 2022-23 admitting batch
8. To discuss MOOCs courses and Value-added courses proposed for the A.Y 2022-23.
9. To discuss about Proposal of SAC activities
10. To discuss about Proposal of Courses relating AICTE-SLA 'Parakh' Program

#### **The following members were present:**

1. Dr. K. Thirupathi Rao, Professor Chairman
2. Prof. Hari Kiran Vege, Professor Convenor
3. Dr. P. Sai Kiran, Professor Member
4. Dr. N. Srinivasu, Professor Member
5. Dr.K.Srinivas, Professor Member

  
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6. Dr. M. Chiranjeevi, Assoc. Professor Member
7. Dr S Balaji, Professor Member
8. Dr. Pragnyaban Mishra, Assoc. Professor Member
9. Dr. V. Chadra Prakash, Professor Member
10. Dr. K. V. S. Rama Rao, Professor Member
11. Dr. K. V. V. Satyanarayana, Professor Member
12. Dr. G. Pradeepini, Professor Member
13. Dr. V. Vijayababu, Professor Member
14. Dr. G. Krishna Mohan, Professor Member
15. Dr. Y. Prasanth, Professor Member
16. Dr. T. Pavan Kumar, Professor Member
17. Dr. Gulikhan Sonowal, Assoc. Professor Member
18. Dr. K. V. D. Kiran, Professor Member
19. Dr. G. Sivanageswara Rao, Professor Member
20. Dr. P. Vidya Sagar, Assoc. Professor Member
21. Dr. Suryakanth V. Gangashetty, Professor Member
22. Dr. M. Sreedevi, Professor Member
23. Dr. Md. Moulana, Professor Member
24. Dr. Enireddy Vamsidhar, Professor Member
25. Dr. T. Santhisri, Professor Member
26. Dr. Nikhat Praveen, Assoc. Professor Member

  
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27. Dr. B. Vijay Kumar, Assoc. Professor Member
28. Dr.P.Vidyullatha, Assoc. Professor Member
29. Dr.K.V.Prasad, Assoc. Professor Member
30. Dr. Arpita Gupta, Assoc. Professor Member
31. Dr. Ch. Smitha, Assoc. Professor Member
32. Dr. K. Vijaya Sri, Assoc. Professor Member
33. Dr.K.Ashesh, Assoc. Professor Member
34. Dr.P.Yellamma, Assoc. Professor Member
35. Dr.A.Senthil, Assoc. Professor Member
36. Dr.M.Kavitha, Assoc. Professor Member
37. Dr. Naushad Varish, Assoc. Professor Member
38. Dr. Iwin Thanakumar Joseph, Assoc. Professor Member
39. Dr.G. Suryakanth, Assoc. Professor Member
40. Dr.Bhabendu Kumar Mohantha, Assoc. Professor Member
41. Dr. C Ramakrishnaiah, Assoc. Professor Member
42. Dr. Praveen Krishna, Assoc. Professor Member
43. Dr.R. Venubabu , Assoc. Professor Member
44. Dr.Nithin Tyagi, Assoc. Professor Member
45. Dr.K.Sreenivasa Rao, Assoc. Professor Member
46. Dr. Samudra Vijaya, Assoc. Professor Member
47. Dr.SanasamInunganbi , Assoc. Professor Member

*K. N. A.*  
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48. Dr G Rekha, Assoc. Professor Member
49. Dr M Saidi Reddy, Assoc. Professor Member
50. Dr.K. Ruth Ramya, Assoc. Professor Member
51. Mr.J. Surya Kiran, Asst. Professor Member
52. Mrs.A.Roshini, Asst. Professor Member
53. Mrs.K.Madhuri, Asst. Professor Member
54. Ms. Sai Durga Tejaswi, Asst. Professor Member
55. Mrs. B.Prabha, Asst. Professor Member
56. Ms. B. Madhuri, Asst. Professor Member
57. Mr.V. Naresh, Asst. Professor Member
58. Mr. Balajee. R.M, Asst. Professor Member
59. Mr.Suresh Venkat, Asst. Professor Member
60. Mrs. V. Bhavani, Asst. Professor Member
61. Mrs.T.Anuradha, Asst. Professor Member
62. Mr. S. Jayesh , Asst. Professor Member
63. Mr. M.Vishnuvardhan, Asst. Professor Member
64. Mr. Ch. Mohan Kumar, Asst. Professor Member
65. Mr. Pradeep, Asst. Professor Member
66. Mr. B. Sreedhar, Asst. Professor Member
67. Mrs. G.Bindu, Asst. Professor Member
68. Mr. Feroz Khan, Asst. Professor Member

  
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69. Mrs. N. Anjana Devi, Asst. Professor Member

70. Mrs. V. Anitha, Asst. Professor Member

71. Mr. P. Rathna Kumar, Asst. Professor Member

### **The following points were discussed and resolved:**

Based on course closure minutes, the following points were discussed.

- For the Artificial Neural network course, COHORT 5A faculty and research group head recommended to put forward the book titles which are more relevant and recommended to be available in E- Library.
- AWS course feedback is analysed and Cohort-1, cloud computing research group faculty are recommended to plan additional training sessions to build more skill set.
- Crypt Analysis and Cyber Defence course feedback is analysed and discussed on lecture component. Due to operational constraints, discussion concluded for this course as lecture hours not changed.
- For Operating System Design course, feedback is analysed, and discussion ends with operating systems course available for Y21 batch.
- For Machine Learning course, Dr Sagar Imambi recommended to incorporate more case studies as part of skilling component. Concluded, Students get benefitted for the inclusion of certifications either in AWS or in Azure. Global challenges are suggested for only advance and peer learning students and not recommended for regular students. Y19 batch students are currently working on some of the case studies from machine learning related to tensor flow certification. Some of the certifications listed are Tensor flow certification, AI fundamentals certification, AWS and Azure.... etc.
- Mathematical programming-1 and Mathematical programming-2 courses feedback are analysed and proposed to give more exercise problems to the students for mathematical programming course for Y21 admitted batch students.

  
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Based on Result analysis of 2021-2022 Even Semester courses the following points are discussed.

- The current pass percentage is more than 90% for maximum courses. The result is analysed based on the copy shared by the exam cell. Due to Phase 2 and Phase 3 exams few courses need to get updated results.
- Placement training and Aptitude builder-II courses, student's issues are yet to solve so that pass percentage may increase for these courses.
- Few courses like design patterns, Cloud system Infrastructure courses CCs are instructed to still work on giving more practice problems to ensure the pass percentage increase little bit more.
- CO-PO Attainment of 2021-2022 Even Semester courses and gap analysis report on CO-PO attainment and teaching pedagogy are discussed.
- Stake holder feedback collected on 2022-23 Admitted batches proposed curriculum is discussed. Based on stake holders feedback the following new courses are proposed for 2022-23 admitted batch B.Tech CSE students.
  1. Dr. A. Srinath, Dean-Skill Development, recommend including an IoT workshop as an integral part of the curriculum. This hands-on experience will provide students with practical skills in IoT technology, enhancing their understanding and employability in the rapidly evolving field of Internet of Things.
  2. Dr.Md.Mujahid, Academic Peer, Recommend the introduction of a new course on "Introduction to Electronic Systems and IoT" at our institution. In today's rapidly evolving technological landscape, this course has the potential to provide students with invaluable knowledge and skills that are highly relevant to the modern world.
  3. The proposed structure for B.Tech CSE is discussed in detail. The category wise courses and credits are discussed and concluded as the curriculum offered with good number of courses to fulfil the local, regional, national and global needs. The curriculum structure for 2022-23 B.Tech- CSE is recommended for BOS approval.

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- Stake holder feedback on M.Tech-CSE and M.Tech-AI&DS structures are discussed. As the same Y21 structures approved for Y22 M.Tech admitted batch students without any revisions. The curriculum structures of M.Tech -CSE and M.Tech AI&DS programs are recommended for BOS approval.
- List of courses proposed for Open elective, management elective and foreign language electives under MOOCs mode are discussed and the same recommended for BOS approval.
- List of value-added courses proposed for 2022-23 admitted batch students are discussed and same recommended for BOS approval.
- Proposal on SAC activities are discussed and the same is forwarded for BOS approval.
- Proposal on the courses relating AICTE-SLA 'Parakh' Program is discussed and the same is forwarded to BOS approval.
- Detailed course closure minutes are given in annexure 1.
- Course wise result analysis on 2021-22 Even semester is attached in Annexure-2.
- CO-PO Attainment of courses offered in 2021-2022 Even Semester is attached through annexure 3.
- Gap analysis report on CO-PO attainment on the courses offered in 2021-22 Even Semester is attached through annexure 4.
- Detailed stakeholder feedback is attached through Annexure-5.
- Detailed structures proposed for B.Tech and M.Tech programs are attached through Annexure-6.
- List of MOOCs courses proposed for 2022-23 is attached through Annexure-7.
- List of value-added courses proposed for 2022-23 are attached through Annexure-8.
- Proposal on SAC activities given through Annexure-9. Proposal of Courses relating AICTE-SLA 'Parakh' Program is given in Annexure 10.

*[Signature]*  
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Meeting chat

12G Program: Structure for UG and PG programs

Recording has started 2:36 PM

Reply

Signed\_Y19 structure... People in your organization

Signed\_Y20\_CSE STRU... People in your organization

Signed\_Y21 Structure... People in your organization

Press Ctrl+Shift+M to unmute your microphone.

03:42:00

139

Hari Krishnan

DG

DR

Dr K Sreenivasulu

Sai Durga Teja Reddy

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Meeting chat

12G Program: Structure for UG and PG programs

262 people will see your message

Reply

Signed\_Y19 structure... People in your organization

Signed\_Y20\_CSE STRU... People in your organization

Signed\_Y21 Structure... People in your organization

03:43:00

134

Hari Krishnan

GS

DR

DM

Dr K Sreenivasulu

Sai Durga Teja Reddy

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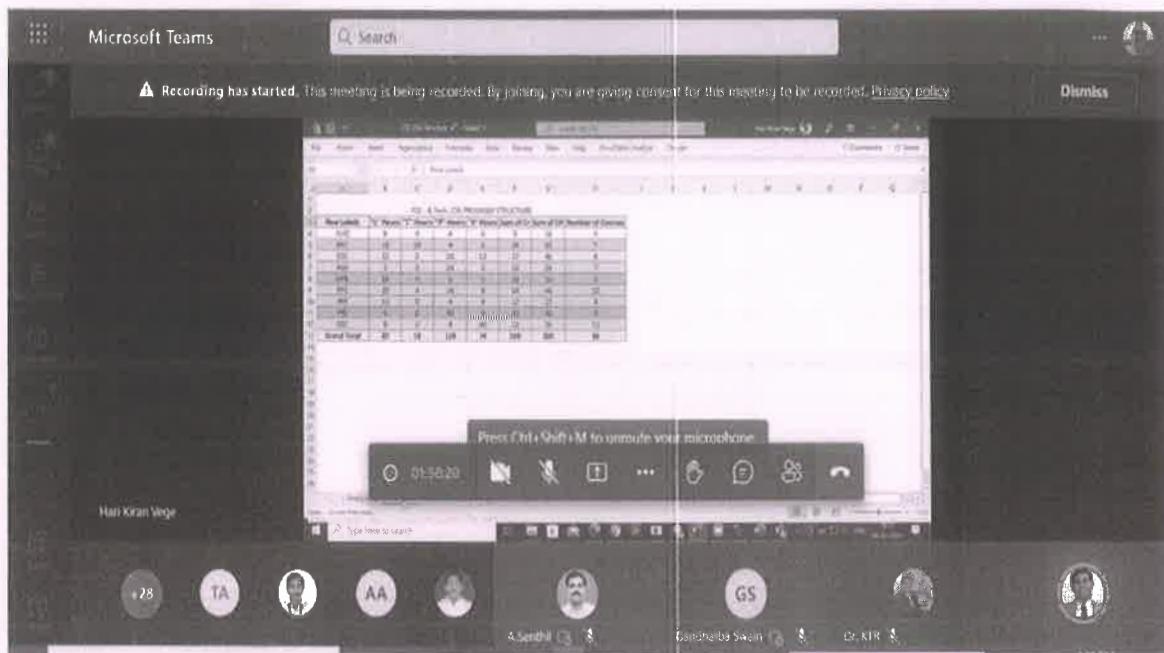
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Chairman-DAC

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### Annexure-2(a)

**Course Code: 22EC1102 Course Name: Introduction to Electronic Systems & IoT**

**L-T-P-S: 1-0-2-0 Credits: 2**

**Prerequisite: Nil**

#### Course outcome:

CO#	CO Description	PO/PSO	BTL
CO1	To acquaint the students about the fundamentals of Electronics	PO1	2
CO2	To understand Fundamentals of Internet of things	PO1, PO2	2
CO3	To demonstrate the Interfacing Arduino with LCD, LED, buzzer	PO3, PO2	3
CO4	To design and configure Arduino boards using sensors and & actuators	PO2, PO3 PSO1	3
CO5	To build a small application using Arduino for real time problems in the world	PO3, PO5, PSO2	5

#### Syllabus:

Electronics components: Resistors, transistors, capacitors, diodes, inductors and transformers, relays, Ohm's and Watt's Law, Series and Parallel Circuit, Power Supply, Motors and Pulse with Modulation, Using light to control electricity, Photovoltaic Cells and Transducers. Introduction to IOT: Understanding IoT fundamentals, IoT Architecture and protocols, Various Platforms for IoT, Real time Examples of IoT, Overview of IoT components and IoT Communication Technologies and Challenges in IoT, Applications of IoT in various domains. Arduino Simulation Environment: Arduino Uno Architecture, Setup the IDE, Writing Arduino Software, Arduino Libraries, Basics of Embedded C programming for Arduino, Interfacing LED, push button and buzzer with Arduino, Interfacing Arduino with LCD. Sensor & Actuators with Arduino: Overview of Sensors working, Analog and Digital Sensors, Interfacing of Temperature, Humidity, Motion, Light and Gas Sensor with Arduino, Interfacing of Actuators with Arduino, Interfacing of Relay Switch and Servo Motor with Arduino

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### Text Books:

1. Jonathan Bartlett, "Electronics for Beginners: A Practical Introduction to Schematics Circuits and Microcontrollers "2020 Edition ,Apress
2. Internet of Things: A Hands-on Approach", by Arshdeep Bahga and Vijay Madisetti., VPT

### References:

1. Francis daCosta, "Rethinking the Internet of Things: A Scalable Approach, ,Apress
2. Andrew King Programming the Internet of Things: An Introduction to Building Integrated, Device-to-Cloud IoT Solutions,2021, O'Reilly
3. CunoPfister "Getting Started with the Internet of Things: Connecting Sensors and Microcontrollers to the Cloud (Make: Projects) 1st Edition, O'Reilly Media,
4. Dr. Guillaume Girardin, Antoine Bonnabel, Dr. Eric Mounier, 'Technologies & Sensors for the Internet of Things Businesses & Market Trends 2014 - 2024',

  
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**Course Code: 22SC1209**

**Course Name: IOT WORKSHOP**

**L-T-P-S: 0-0-4-0 Credits: 2**

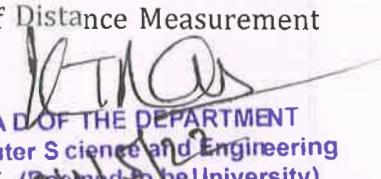
**Prerequisite: Nil**

### Course outcome:

CO#	CO Description	PO/PSO	BTL
CO1	To make the student to understand about the programming fundamentals of Arduino software and tinker cad.	PO1	2
CO2	To demonstrate the Interfacing of Arduino UNO and ESP32 with LCD, LED, buzzer, and push button	PO3, PO1	2
CO3	To design and configure the sensors with Arduino UNO and ESP32 boards	PO3, PSO2	3
CO4	To design and configure the actuators with Arduino UNO and ESP32 boards and build Arduino and ESP based applications	PO3 PSO2	3

### Syllabus:

Getting started with Arduino UNO and ESP32: Installing Software, Programming basics for Arduino and ESP32. Getting Started with Tinker cad: Introduction to Tinker cad, Tinker cad UI, analysis of sensors, wiring process, component naming, Electronics component properties, circuit designing, coding styles, simulation process, compilation errors correction. Arduino Uno and ESP32 Simulation Environment: Arduino Uno and ESP32 Architecture, Setup the IDE, Writing Arduino Uno and ESP32 Software programs, Arduino Uno and ESP32 Libraries, Interfacing LED with Arduino UNO and ESP32, Interfacing Multiple LED with Arduino UNO and ESP32, interfacing push button and buzzer with Arduino UNO and ESP32, Interfacing LCD with Arduino and ESP32. Interfacing sensors with Arduino UNO and ESP32: Overview of Sensors working , Programming for Serial Monitor, interfacing of Light Sensor(LDR), interfacing of Temperature & Humidity sensor(DHT11 Sensor), Interfacing of Motion Sensor(PIR Sensor), interfacing of Gas Sensor(MQ12 Sensor) , interfacing of Distance Measurement

  
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sensor(Ultrasound Sensor) Interfacing of Actuators with Arduino UNO and ESP32 and Application: Overview of Actuators, Interfacing of Relay Switch ,interfacing of Servo Motor with Arduino and ESP32 , Interfacing Remote controller to Arduino UNO and ESP32, Design of Arduino Uno and ESP32 based application.

### Textbooks:

1. Jonathan Bartlett, "Electronics for Beginners a Practical Introduction to Schematics Circuits and Microcontrollers "2020 Edition, Apress
2. Internet of Things: A Hands-on Approach", by Arshdeep Bahga and Vijay Madisetti., VPT

### References:

1. Cuno Pfister, "Getting Started with the Internet of Things: Connecting Sensors and Microcontrollers to the Cloud (Make: Projects) 1st Edition, O'Reilly Media.
2. Dr. Guillaume Girardin, Antoine Bondable, Dr. Eric Mounier, 'Technologies & Sensors for the internet of Things Businesses & Market Trends 201.4 - 2024'.

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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### Annexure-2(b)

#### Report- Analysis of Feedback on curriculum – received from the stake holders prior to the commencement of the Academic Year 2022-23

Feedback from different stake holders has been collected in respect of the curriculum offered for the academic year 2022-23

S. No.	Type of Stake holder	Number of feedbacks
1	Students	901
2	Parents	40
3	Alumni	20
4	Faculty	283
5	Academic peers	18
6	Industry persons	15
Total		1227

Stakeholder Category	Stakeholder Feedback / Recommendation	Action taken in DAC (22/05/2022)	Action Taken in BOS (24/05/2022)
Academic Peer	Dr.Md.Mujahid, Recommend the introduction of a new course on "Introduction to Electronic Systems and IoT" at our institution. In today's rapidly evolving technological landscape, this course has the potential to provide students with invaluable knowledge and skills that are highly relevant to the modern world.	It is resolved to consider and recommend the introduction of the new course "Introduction to Electronic Systems and IoT" to BOS for 2022-23 admitted batch CSE students.	It is resolved to approve the introduction of the new course "Introduction to Electronic Systems and IoT" for 2022-23 admitted batch CSE students.

  
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Stakeholder Category	Stakeholder Feedback / Recommendation	Action taken in DAC (22/05/2022)	Action Taken in BOS (24/05/2022)
Faculty	Dr. A. Srinath, Dean-Skill Development, recommend including an IoT workshop as an integral part of the curriculum. This hands-on experience will provide students with practical skills in IoT technology, enhancing their understanding and employability in the rapidly evolving field of Internet of Things.	It is resolved to consider and recommend the introduction of the new course " IoT Workshop" to BOS for 2022-23 admitted batch CSE students.	The BoS recognizes the importance of preparing students for the rapidly evolving technology landscape and acknowledges that this workshop will enhance their practical knowledge and skills in the field of IoT.  It is resolved to approve the introduction of the new course " IoT Workshop" for 2022-23 admitted batch CSE students.

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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

#### Annexure-3 (a)

#### B.Tech 2022-23 Admitted Batch Category wise Course Structure

S. No	Course Code	Course Title	Category	Mode	L	T	P	S	Cr	CH	Pre-requisite	New/ Revised/ Retained	Stake Holder	Justification	EES
1	22UC1101	Integrated Professional English	HSS	R	0	0	4	0	2	4	NIL	Retained	No changes		SKILL DEVELOPMENT
2	22UC2103	Essential Skills for Employability	HSS	R	0	0	4	0	2	4	NIL	Retained	No changes		EMPLOYABILITY
3	22UC3105	Universal Human Values & Professional Ethics	HSS	R	2	0	0	0	2	2	NIL	Retained	No changes		EMPLOYABILITY
4	22UC1202	English Proficiency	HSS	R	0	0	4	0	2	4	NIL	Retained	No changes		SKILL DEVELOPMENT
5	22UC2204	Corporate Readiness Skills	HSS	R	0	0	4	0	2	4	NIL	Retained	No changes		EMPLOYABILITY
6	22UC0011	Ecology & Environment	HSS	R	2	0	0	0	2	2	NIL	Retained	No changes		SKILL DEVELOPMENT
7	22UC0009	Gender Sensitization (Audit Course - 3 )	HSS	M	2	0	0	0	0	2	NIL	Retained	No changes		
<b>Total Credits</b>									<b>12</b>	<b>22</b>		Retained	No changes		
8	22MT1101	Mathematical for Computing	BS	R	2	2	0	2	4.5	4	NIL	Retained	No changes		SKILL DEVELOPMENT
9	22MT2103	Probability, Statistics & Queueing Theory	BS	R	2	2	0	0	4	4	NIL	Retained	No changes		SKILL DEVELOPMENT
10	SE-1	Physics Elective	BS	R	3	0	2	0	4	5	NIL	Retained	No changes		

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S. No	Course Code	Course Title	Category	Mode	L	T	P	S	Cr	CH	Pre-requisite	New/ Revised/ Retained	Stake Holder	Justification	EES
11	SE-2	Chemistry Elective	BS	R	3	0	2	0	4	5	NIL	Retained	No changes		
12	22MT2102	Mathematics for Engineers	BS	R	2	1	0	0	3	3	NIL	Retained	No changes		SKILL DEVELOPMENT
13	22CS2204	Mathematical Programming	BS	R	2	2	0	0	4	4	NIL	Retained	No changes		SKILL DEVELOPMENT
14	22CS3106	Problem Solving Skills - 1	BS	R	0	0	2	2	1.5	4	NIL	Retained	No changes		SKILL DEVELOPMENT
15	20UC1203	Design Thinking for Innovation	BS	R	1	0	0	4	2	5	NIL	Retained	No changes		Entrepreneurship
16	22CS3207	Problem Solving Skills - 2	BS	R	0	0	2	2	1.5	4	22CS3106	Retained	No changes		SKILL DEVELOPMENT
Total Credits								28.5	38			Retained	No changes		
17	22SC1101	Computational Thinking for Structured Design	ES	R	3	0	2	6	5.5	11	NIL	Retained	No changes		EMPLOYABILITY
18	22EC1101	Digital Logic & Processors	ES	R	3	0	2	0	4	5	NIL	Retained	No changes		EMPLOYABILITY
19	22EC1102	Introduction to Electronic Systems & IoT	ES	R	1	0	2	0	2	3	NIL	New	Academic Peer	This course has the potential to provide students with electronic systems knowledge	EMPLOYABILITY
20	22ME1103	Digital Tools Workshop	ES	R	0	0	4	0	2	4	NIL	Retained	No changes		SKILL DEVELOPMENT

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21	22SC1202	Data Structures	ES	R	3	0	2	4	5	9	22SC1101	Retained	No changes		EMPLOYABILITY
22	22EC1202	Computer Organization & Architecture	ES	R	2	0	0	0	2	2	22EC1101	Retained	No changes		EMPLOYABILITY
23	22SC1209	IoT Workshop	ES	R	0	0	4	0	2	4	22EC1102	New	Faculty	This workshop will enhance practical knowledge and skills in the field of IoT.	SKILL DEVELOPMENT
<b>Total Credits</b>						<b>22.5</b>	<b>38</b>								
24	22CS2108	Enterprise Programming	PC	R	2	0	2	4	4	8	22SC1203	Retained	No changes		EMPLOYABILITY
25	22CS2109	Operating Systems	PC	R	2	0	2	0	3	4	22EC1202	Retained	No changes		EMPLOYABILITY
26	22CS2215	Automata Theory & Formal Languages	PC	R	2	1	0	0	3	3	22MT1202	Retained	No changes		EMPLOYABILITY
27	22SC1203	Computational Thinking for Object Oriented Design	PC	R	3	0	2	4	5	8	22SC1101	Retained	No changes		EMPLOYABILITY
28	22CS2116	Advanced Object Oriented Programming	PC	R	2	0	2	4	4	8	22SC1203	Retained	No changes		Employability
29	22CS2110	Database Management Systems	PC	R	2	0	2	0	3	4	22SC1202	Retained	No changes		EMPLOYABILITY
30	22CS2111	Software Engineering	PC	M	2	1	0	0	3	3	NIL	Retained	No changes		EMPLOYABILITY
31	22CS2212	Computer Networks & Security	PC	R	2	2	0	0	4	4	NIL	Retained	No changes		EMPLOYABILITY

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S. No	Course Code	Course Title	Category	Mode	L	T	P	S	Cr	CH	Pre-requisite	New/ Revised/ Retained	Stake Holder	Justification	EES
32	22CS2213	AI for Data Science	PC	R	2	0	2	0	3	4	22SC1202	Retained	No changes		EMPLOYABILITY
33	22CS2214	Design & Analysis of Algorithms	PC	R	2	0	2	4	4	8	22SC1202	Retained	No changes		EMPLOYABILITY
34	22CS4115	Parallel & Distributed Computing	PC	M	2	1	0	0	3	3	22CS2109	Retained	No changes		EMPLOYABILITY
<b>Total Credits</b>								<b>39</b>	<b>57</b>						
35	FC-1	Flexi Core Course - 1	FC	R	2	0	2	0	3	4	Course Specific				
36	FC-2	Flexi Core Course - 2	FC	R	2	0	2	0	3	4	Course Specific				
<b>Total Credits</b>								<b>6</b>							
37	PE-1	Professional Elective - 1	PE	R	2	0	2	4	4	8	Course Specific				
38	PE-2	Professional Elective - 2	PE	R	2	0	2	0	3	4	Course Specific				
39	PE-3	Professional Elective - 3	PE	R	2	0	2	4	4	8	Course Specific				
40	PE-4	Professional Elective - 4	PE	R	2	0	2	0	3	4	Course Specific				
41	PE-5	Professional Elective - 5	PE	R	2	0	2	0	3	3	Course Specific				
<b>Total Credits</b>								<b>17</b>	<b>27</b>						
42	FL	Foreign Language Elective	OE	R	2	0	0	0	2	2	NIL				SKILL DEVELOPMENT

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43	OE-1	Open Elective - 1	OE	R	3	0	0	0	3	3	NIL				
44	ME	Management Elective	OE	R	3	0	0	0	3	3	NIL				
45	OE-2	Open Elective - 2	OE	R	3	0	0	0	3	3	NIL				
46	OE-3	Open Elective - 3	OE	R	3	0	0	0	3	3	NIL				
<b>Total Credits</b>										<b>14</b>	<b>14</b>				
	22IE3042	RESEARCH SEMINAR	PJ	0	0	2	4	2	6	0	NIL	Retained	No changes		SKILL DEVELOPMENT
47	22IE3243	Term Paper	PJ	R	0	0	0	4	1	4	NIL	Retained	No changes		SKILL DEVELOPMENT
48	22IE4048/ 22IE4050/ 22IE4051	Capstone Project - 1/ PRACTICE SCHOOL/ INTERNSHIP	PJ	R	0	0	0	2 4	6	24	22IE3243	Retained	No changes		EMPLOYABILITY
49	22IE2040	Social Internship	PJ	R	0	0	0	4	1	4	NIL	Retained	No changes		EMPLOYABILITY
50	22IE3041	Technical Internship	PJ	R	0	0	0	4	1	4	NIL	Retained	No changes		EMPLOYABILITY
51	22IE4042	Research Internship	PJ	0	0	0	8	0	8	0	22IE3243	Retained	No changes		EMPLOYABILITY
51	22IE4049/ 22IE4050/ 22IE4051	Capstone Project - 2/ PRACTICE SCHOOL/ INTERNSHIP	PJ	R	0	0	0	2 4	6	24	22IE4048	Retained	No changes		EMPLOYABILITY
52	22IE4051	RESEARCH PROJECT	PJ	R	0	0	0	2 4	6	24	22IE4048	Retained	No changes		EMPLOYABILITY
<b>Total Credits</b>										<b>15</b>	<b>60</b>				

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52		Tool Based Learning - 1	SDC	R	0	0	0	4	1	4	NIL				SKILL DEVELOPMENT
53		Tool Based Learning - 2	SDC	R	0	0	0	4	1	4	NIL				SKILL DEVELOPMENT
54		Technical Skilling - 1	SDC	R	0	0	2	4	2	6	NIL				
55		Technical Skilling - 3	SDC	R	0	0	2	4	2	6	22CS2108				
56		Technical Skilling - 2	SDC	R	0	0	2	4	2	6	22CS2108				
57		Technical Skilling - 4	SDC	R	0	0	2	4	2	6	22TS2006				
58	22CS3EL01A	COMPETITIVE CODING TRAINING-LEVEL 1	SDC	R	0	0	0	8	0	0					
59	22CS3EL02A	COMPETITIVE CODING TRAINING-LEVEL 2	SDC	R	0	0	0	8	0	0					
<b>Total Credits</b>								<b>10</b>	<b>32</b>						
60	22UC0007	Audit Course - 1 (Indian Constitution)	AU	R	2	0	0	0	0	2	NIL	Retained	No changes		
61	22UC0010	Audit Course - 4 (Entrepreneurship)	AU	M	2	0	0	0	0	2	NIL	Retained	No changes		Entrepreneurship
62	22UC0008	Audit Course - 2 (Indian Heritage & Culture)	AU	R	2	0	0	0	0	2	NIL	Retained	No changes		
<b>Total Credits</b>								<b>0</b>							
63	22UC1001	Bridge Course - 1 (Programming Essentials in Python)	Bridge Course	M	0	0	0	4	0	4	NIL				SKILL DEVELOPMENT

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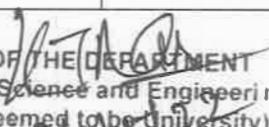
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S. No	Course Code	Course Title	Category	Mode	L	T	P	S	Cr	CH	Pre-requisite	New/ Revised/ Retained	Stake Holder	Justification	EES
64	22UC2002	Bridge Course - 2 (Linux Essentials & System Administration)	Bridge Course	M	0	0	0	4	0	4	NIL				SKILL DEVELOPMENT
65	VAC-1	Value Added Course - 1	VAC	R	0	0	0	4	0	0	NIL				
66	VAC-2	Value Added Course - 2	VAC	R	0	0	0	4	0	0	NIL				
67	VAC-3	Value Added Course - 3	VAC	R	0	0	0	4	0	0	NIL				
68	VAC-4	Value Added Course - 4	VAC	R	0	0	0	4	0	4	NIL				
69	SP	SPORTS CERTIFICATE	Sports	R	0	0	2	0	0	2	NIL				
Total Credits								164	288						

### PROFESSIONAL ELECTIVES

#### Artificial Intelligence & Intelligent Process Automation (AI & IPA)

1	22CS3020RA	MACHINE LEARNING	PE-1	R	2	0	2	4	4	8	22CS2213	Retained	No changes		SKILL DEVELOPMENT
2	22CS3022RA	SOFT COMPUTING	PE-2	R	2	0	2	0	3	4	22CS2213	Retained	No changes		EMPLOYABILITY
3	22CS3026RA	ARTIFICIAL NEURAL NETWORKS	PE-2	R	2	0	2	0	3	4	22CS2213	Retained	No changes		EMPLOYABILITY
4	22CS3269RA	DEEP LEARNING	PE-3	R	2	0	2	4	4	8	22CS3020	Retained	No changes		SKILL DEVELOPMENT
5	22CS3270RA	COGNITIVE COMPUTING	PE-4	R	2	0	2	0	3	4	22CS2213	Retained	No changes		EMPLOYABILITY

  
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6	22CS3271RA	PERCEPTION AND COMPUTER VISION	PE-4	R	2	0	2	0	3	4	22CS2213	Retained	No changes		EMPLOYABILITY
7	22CS3278RA	DIGITAL VIDEO PROCESSING	PE-4	R	2	0	2	0	3	4	22MT1202	Retained	No changes		EMPLOYABILITY
8	22CS3282RA	MACHINE LEARNING ON CLOUD	PE-4	R	2	0	2	0	3	4	22CS3020	Retained	No changes		SKILL DEVELOPMENT
9	22CS3272RA	COMPUTATIONAL EPIDEMIOLOGY	PE-5	R	2	0	2	0	3	4	22CS2213	Retained	No changes		EMPLOYABILITY
10	22CS3273RA	NATURAL LANGUAGE PROCESSING	PE-5	R	2	0	2	0	3	4	22CS2213	Retained	No changes		EMPLOYABILITY
11	22CS3274RA	SPEECH PROCESSING	PE-5	R	2	0	2	0	3	4	22CS2213	Retained	No changes		EMPLOYABILITY
12	22CS3292RA	Design & Management of Distributed Applications for AI on Cloud	PE-5	R	2	0	2	0	3	4	Nil	Retained	No changes		SKILL DEVELOPMENT
13	22CS3293RA	Architecting Deep Learning Workloads on Cloud	PE-5	R	2	0	2	0	3	4	22CS2213	Retained	No changes		EMPLOYABILITY

#### Data Science & Big Data Analytics (DS&BDA)

1	22CS3051RA	DATA VISUALISATION TECHNIQUES	PE-1	R	2	0	2	4	4	8	IAD & CIS	Retained	No changes		EMPLOYABILITY
2	22CS3052RA	DATA WAREHOUSING & MINING	PE-2	R	2	0	2	0	3	4	22CS2110	Retained	No changes		EMPLOYABILITY
3	22CS3275RA	BIG DATA ANALYTICS	PE-3	R	2	0	2	4	4	8	22CS2110	Retained	No changes		EMPLOYABILITY

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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

S. No	Course Code	Course Title	Category	Mode	L	T	P	S	Cr	CH	Pre-requisite	New/ Revised/ Retained	Stake Holder	Justification	EES
4	22CS3276RA	BIG DATA OPTIMIZATION	PE-4	R	2	0	2	0	3	4	22CS2110	Retained	No changes		EMPLOYABILITY
5	22CS3277RA	BIOINFORMATICS	PE-4	R	2	0	2	0	3	4	22CS2214	Retained	No changes		EMPLOYABILITY
6	22CS3278RA	DIGITAL VIDEO PROCESSING	PE-4	R	2	0	2	0	3	4	22CS2213	Retained	No changes		EMPLOYABILITY
7	22CS3283RA	DATA ANALYTICS ON CLOUD	PE-4	R	2	0	2	0	3	4	22CS2213	Retained	No changes		EMPLOYABILITY
8	22CS3284RA	DIGITAL MEDIA ANALYTICS	PE-4	R	2	0	2	0	3	4	22CS2213	Retained	No changes		EMPLOYABILITY
9	22CS3272RA	COMPUTATIONAL EPIDEMIOLOGY	PE-5	R	2	0	2	0	3	4	22CS2213	Retained	No changes		EMPLOYABILITY
10	22CS3279RA	ADVANCED DATABASES	PE-5	R	2	0	2	0	3	4	22CS2110	Retained	No changes		EMPLOYABILITY
11	22CS3289RA	BUSINESS ANALYTICS	PE-5	R	2	0	2	0	3	4	22CS2110	Retained	No changes		EMPLOYABILITY
12	22CS3280RA	GRAPH & WEB ANALYTICS	PE-5	R	2	0	2	0	3	4	22CS2213	Retained	No changes		EMPLOYABILITY
13	22CS3294RA	Data Governance on Cloud	PE-5	R	2	0	2	0	3	4	NIL	Retained	No changes		EMPLOYABILITY

### Cloud & Edge Computing (CEC)

1	22CS3037RA	CLOUD INFRASTRUCTURE & SERVICES	PE-1	R	2	0	2	4	4	8	22CS2109	Retained	No changes		SKILL DEVELOPMENT
2	22CS3032RA	ADVANCED OPERATING SYSTEMS	PE-2	R	2	0	2	0	3	4	22CS2109	Retained	No changes		EMPLOYABILITY

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3	22CS3036RA	FUNCTIONAL & CONCURRENT PROGRAMMING	PE-2	R	2	0	2	0	3	4	22SC1203	Retained	No changes		EMPLOYABILITY
4	22CS3086RA	CLOUD DEVOPS	PE-2	R	2	0	2	0	3	4	SE	Retained	No changes		SKILL DEVELOPMENT
5	22CS3281RA	CLOUD & SERVERLESS COMPUTING	PE-3	R	2	0	2	4	4	8	NIL	Retained	No changes		EMPLOYABILITY
6	22CS3251RA	ADVANCED COMPUTER ARCHITECTURE	PE-4	R	2	0	2	0	3	4	22EC1202	Retained	No changes		EMPLOYABILITY
7	22CS3252RA	PARALLEL ALGORITHMS	PE-4	R	2	0	2	0	3	4	22CS2109/ 22SC1203	Retained	No changes		EMPLOYABILITY
8	22CS3287RA	CLOUD SECURITY	PE-4	R	2	0	2	0	3	4	22CS2109& 22CS2212	Retained	No changes		EMPLOYABILITY
9	22CS3285RA	ARCHITECTING CLOUD SOLUTIONS*	PE-4	R	2	0	2	0	3	4	22CS2109& 22CS2212	Retained	No changes		EMPLOYABILITY
10	22CS3253RA	EDGE COMPUTING	PE-5	R	2	0	2	0	3	4	22CS2109	Retained	No changes		EMPLOYABILITY
11	22CS3038RA	HIGH PERFORMANCE COMPUTING	PE-5	R	2	0	2	0	3	4	22CS2109	Retained	No changes		EMPLOYABILITY
12	22CS3290RA	Design of distributed applications on cloud	PE-5	R	2	0	2	0	3	4	22CS2109	Retained	No changes		EMPLOYABILITY
13	22CS3288RA	CLOUD NETWORKING	PE-5	R	2	0	2	0	3	4	22CS2109	Retained	No changes		EMPLOYABILITY

#### Cybersecurity & Blockchain Technology (CYS & BCT)

1	22CS3041RA	CRYPT ANALYSIS & CYBER DEFENSE	PE-1	R	2	0	2	4	4	8	22CS2212	Retained	No changes		SKILL DEVELOPMENT
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2	22CS3042RA	NETWORK & INFRASTRUCTURE SECURITY	PE-2	R	2	0	2	0	3	4	22CS2212	Retained	No changes		EMPLOYABILITY
3	22CS3045RA	INTRODUCTION TO BLOCKCHAIN & CRYPTO CURRENCIES	PE-2	R	2	0	2	0	3	4	22CS2212	Retained	No changes		SKILL DEVELOPMENT
4	22CS3259RA	DIGITAL FORENSICS	PE-3	R	2	0	2	4	4	8	22CS3041	Retained	No changes		SKILL DEVELOPMENT
5	22CS3260RA	DATABASE & SYSTEM SECURITY	PE-4	R	2	0	2	0	3	4	22CS2110	Retained	No changes		EMPLOYABILITY
6	22CS3261RA	PROGRAMMING FOR SMART CONTRACTS	PE-4	R	2	0	2	0	3	4	22CS3045	Retained	No changes		EMPLOYABILITY
7	22CS3287RA	CLOUD SECURITY	PE-4	R	2	0	2	0	3	4	22CS2109/ 22CS2212	Retained	No changes		EMPLOYABILITY
8	22CS3262RA	SECURE SOFTWARE ENGINEERING	PE-5	R	2	0	2	0	3	4	22CS2111	Retained	No changes		EMPLOYABILITY
9	22CS3264RA	WEB SECURITY	PE-5	R	2	0	2	0	3	4	22CS2212	Retained	No changes		EMPLOYABILITY
10	22CS3291RA	SECURITY GOVERNANCE & MANAGEMENT	PE-5	R	2	0	2	0	3	4	NIL	Retained	No.changes		EMPLOYABILITY

### Software Modelling & DevOps (SM&DPS)

1	22CS3062RA	SOFTWARE VERIFICATION & VALIDATION	PE-1	R	2	0	2	4	4	8	22CS2111	Retained	No changes		SKILL DEVELOPMENT
2	22CS3064RA	UX DESIGN	PE-2	R	2	0	2	0	3	4	20UC1203	Retained	No changes		EMPLOYABILITY

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3	22CS3065RA	DESIGN PATTERNS & CLEAN CODING TECHNIQUES	PE-2	R	2	0	2	0	3	4	22SC1203	Retained	No changes		EMPLOYABILITY
4	22CS3256RA	CONTINUOUS DELIVERY & DEVOPS	PE-3	R	2	0	2	4	4	8	22CS2111	Retained	No changes		SKILL DEVELOPMENT
5	22CS3257RA	VISUAL PROGRAMMING	PE-4	R	2	0	2	0	3	4	22SC1203	Retained	No changes		EMPLOYABILITY
6	22CS3231RA	SOFTWARE PROJECT MANAGEMENT	PE-4	R	2	0	2	0	3	4	22CS2111	Retained	No changes		EMPLOYABILITY
7	22CS3295RA	SOFTWARE ARCHITECTURE & DESIGN	PE-4	R	2	0	2	0	3	4	22CS2111	Retained	No changes		EMPLOYABILITY
8	22CS3258RA	SOFTWARE RELIABILITY	PE-5	R	2	0	2	0	3	4	22CS2111	Retained	No changes		EMPLOYABILITY
9	22CS3255RA	CROSS-PLATFORM DEVELOPMENT FRAMEWORKS	PE-5	R	2	0	2	0	3	4	22SC1203	Retained	No changes		EMPLOYABILITY

### Game Development & UX Design (GUX)

1	22CS3071RA	PROGRAMMING FOR GAME DEVELOPMENT	PE-1	R	2	0	2	4	4	8	22CS2109	Retained	No changes		SKILL DEVELOPMENT
2	22CS3064RA	UX DESIGN	PE-2	R	2	0	2	0	3	4	20UC1203	Retained	No changes		EMPLOYABILITY
3	22CS3266RA	AR & VR APPLICATION DEVELOPMENT	PE-3	R	2	0	2	4	4	8	22CS2109	Retained	No changes		SKILL DEVELOPMENT
4	22CS3296RA	COMPUTER GRAPHICS	PE-4	R	2	0	2	0	3	4	NIL	Retained	No changes		EMPLOYABILITY
5	22CS3297RA	3D MODELLING & ANIMATION	PE-4	R	2	0	2	0	3	4	NIL	Retained	No changes		EMPLOYABILITY

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6	22CS3278RA	DIGITAL VIDEO PROCESSING	PE-4	R	2	0	2	0	3	4	22MT1101	Retained	No changes		EMPLOYABILITY
7	22CS3268RA	PRINCIPLES OF GAME DESIGN	PE-5	R	2	0	2	0	3	4	NIL	Retained	No changes		EMPLOYABILITY
8	22CS3267RA	BUSINESS OF GAMES & ENTREPRENEURSHIP	PE-5	R	2	0	2	0	3	4	NIL	Retained	No changes		EMPLOYABILITY

#### Cyber Physical Systems & Internet of Things (CPS&IOT)

1	22CS3117RA	IOT SENSING AND ACTUATING DEVICES	PE-1	R	2	0	2	4	4	8	NIL	Retained	No changes		SKILL DEVELOPMENT
2	22CS3118RA	INTERNET OF THINGS: ARCHITECTURES AND PROTOCOLS	PE-2	R	2	0	2	0	3	4	22CS2212	Retained	No changes		EMPLOYABILITY
3	22CS3298RA	CYBER PHYSICAL SYSTEMS	PE-3	R	2	0	2	4	4	8	22CS2212	Retained	No changes		SKILL DEVELOPMENT
4	22CS3278RA	DIGITAL VIDEO PROCESSING	PE-4	R	2	0	2	0	3	4	22MT1202	Retained	No changes		EMPLOYABILITY
5	22CS3299RA	Foundations of Hybrid and Embedded Systems	PE-4	R	2	0	2	0	3	4	22EC1102	Retained	No changes		EMPLOYABILITY
6	22CS3250RA	CLOUD COMPUTING FOR IOT ENGINEERS	PE-5	R	2	0	2	0	3	4	NIL	Retained	No changes		EMPLOYABILITY
7	22CS3265RA	WIRELESS SENSOR NETWORKS	PE-5	R	2	0	2	0	3	4	22CS2212	Retained	No changes		EMPLOYABILITY
8	22CS3253RA	EDGE COMPUTING	PE-5	R	2	0	2	0	3	4	NIL	Retained	No changes		EMPLOYABILITY

#### FLEXICORE COURSES

1	22CS3064RA	UX DESIGN	FXC	R	2	0	2	0	3	4	20UC1203	Retained	No changes		EMPLOYABILITY
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2	22CS3060RA	CONTINUOUS DELIVERY & DEVOPS	FXC	R	2	0	2	0	3	4	22CS2111	Retained	No changes		EMPLOYABILITY
3	22CS3116RA	SIGNAL PROCESSING	FXC	R	2	2	0	0	4	4	22MT1101	Retained	No changes		EMPLOYABILITY
4	22CS3036RA	CLOUD INFRASTRUCTURE & SERVICES	FXC	R	2	0	2	0	3	4	22CS2109 & 22CS2212	Retained	No changes		SKILL DEVELOPMENT
5	22CS3040RA	CRYPT ANALYSIS & CYBER DEFENSE	FXC	R	2	0	2	0	3	4	22CS2212	Retained	No changes		SKILL DEVELOPMENT
6	22CS3015RA	EMBEDDED SYSTEMS	FXC	R	2	0	2	0	3	4	22EC1202	Retained	No changes		EMPLOYABILITY
7	22CS3232RA	MACHINE LEARNING	FXC	R	2	0	2	0	3	4	22CS2213	Retained	No changes		SKILL DEVELOPMENT
8	22CS3133RA	DATA VISUALIZATION TECHNIQUES	FXC	R	2	0	2	0	3	4	22MT2103	Retained	No changes		EMPLOYABILITY
9	22CS3255RA	CROSS-PLATFORM DEVELOPMENT FRAMEWORKS	FXC	R	2	0	2	0	3	4	22CS2108	Retained	No changes		EMPLOYABILITY
10	22CS3234RA	APPLICATION DEVELOPMENT ON CLOUD	FXC	R	2	0	2	0	3	4	22CS2108	Retained	No changes		EMPLOYABILITY
11	22CS3235RA	SOLUTIONS ARCHITECTING ON CLOUD	FXC	R	2	0	2	0	3	4	22CS2109 & 22CS2212	Retained	No changes		EMPLOYABILITY
12	22CS3231RA	VISUAL PROGRAMMING	FXC	R	2	0	2	0	3	4	22SC1203	Retained	No changes		EMPLOYABILITY
13	22CS3279RA	ADVANCED DATABASE SYSTEMS	FXC	R	2	0	2	0	3	4	22CS2110	Retained	No changes		EMPLOYABILITY

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14	22CS3045RA	INTRODUCTION TO BLOCKCHAIN AND CRYPTO CURRENCIES	FXC	R	2	2	0	0	4	4	22CS2212	Retained	No changes		SKILL DEVELOPMENT
15	22CS3042RA	NETWORK & INFRASTRUCTURE SECURITY	FXC	R	2	0	2	0	3	4	22CS2212	Retained	No changes		SKILL DEVELOPMENT
16	22CS3119RA	INTERNET OF THINGS	FXC	R	2	0	2	0	3	4	NIL	Retained	No changes		EMPLOYABILITY
17	22CS3204RA	COMPILER DESIGN	FXC	R	2	0	2	0	3	4	22CS2215	Retained	No changes		EMPLOYABILITY
18	22CS3036RA	FUNCTIONAL & CONCURRENT PROGRAMMING	FXC	R	2	0	2	0	3	4	22SC1203	Retained	No changes		EMPLOYABILITY
19	22CS3061RA	AUTOMATA THEORY AND FORMAL LANGUAGES	FXC	R	2	1	0	0	3	3	Nil	Retained	No changes		EMPLOYABILITY
20	22CS3065RA	Quantum Computing	FXC	R	2	0	2	0	3	4	Nil	Retained	No changes		EMPLOYABILITY
21	20CS3066RA	SOFTWARE VERIFICATION & VALIDATION	FXC	R	2	0	2	0	3	4	SE	Retained	No changes		EMPLOYABILITY
22	20CS3016RA	.NET PROGRAMMING (EPAM)	FXC	R	2	0	2	0	3	4	NIL	Retained	No changes		EMPLOYABILITY
23	20CS3017RA	FRONT END WEB DEVELOPMENT (EPAM)	FXC	R	2	0	2	0	3	4	NIL	Retained	No changes		EMPLOYABILITY
24	20CS3018RA	SOFTWARE TESTING (EPAM)	FXC	R	2	0	2	0	3	4	NIL	Retained	No changes		EMPLOYABILITY

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25	20CS3019RA	CLOUD DEVOPS (EPAM)	FXC	R	2	0	2	0	3	4	NIL	Retained	No changes		EMPLOYABILITY

#### Skill Development Courses

1	22TS2101	PYTHON FULL STACK DEVELOPMENT	SDC	R	0	0	2	4	2	6	NIL	Retained	No changes		SKILL DEVELOPMENT
2	22TS3103	JAVA FULL STACK DEVELOPMENT + MICROSERVICES	SDC	R	0	0	2	4	2	6	22CS2108	Retained	No changes		SKILL DEVELOPMENT
3	22TS2202	MERN STACK WEB DEVELOPMENT	SDC	R	0	0	2	4	2	6	22CS2108	Retained	No changes		SKILL DEVELOPMENT
4	22TS3292RA	TS-SDP4 (CLOUD DEVOPS)	TS-DPS	R	0	0	2	4	2	6	22CS2111	Retained	No changes		SKILL DEVELOPMENT
5	22TS3291RA	TS-SDP4 (CLOUD BASED SOLUTIONS ARCHITECT)	TS-CEC	R	0	0	2	4	2	6	22CS3037	Retained	No changes		SKILL DEVELOPMENT
6	22TS3293RA	TS-SDP4 (CLOUD BASED SECURITY SPECIALITY)	TS-CYS	R	0	0	2	4	2	6	22CS2212	Retained	No changes		SKILL DEVELOPMENT
7	22TS3294RA	TS-SDP4 (CERTIFIED GAME DEVELOPER)	TS-GUX	R	0	0	2	4	2	6	22CS3071	Retained	No changes		SKILL DEVELOPMENT
8	22TS3295RA	TS SDP-4 (CLOUD BASED AI/ML SPECIALITY)	TS-AI	R	0	0	2	4	2	6	22CS2213	Retained	No changes		SKILL DEVELOPMENT
9	22TS3296RA	TS SDP-4 (CLOUD BASED DATA ANALYTICS SPECIALITY)	TS-BDA	R	0	0	2	4	2	6	22CS2213	Retained	No changes		SKILL DEVELOPMENT

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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

S. No	Course Code	Course Title	Category	Mode	L	T	P	S	Cr	CH	Pre-requisite	New/ Revised/ Retained	Stake Holder	Justification	EES
10	22TS3290RA	TS-SDP4 (CLOUD BASED IOT DEVELOPER)	TS-IOT	R	0	0	2	4	2	6	NIL	Retained	No changes		SKILL DEVELOPMENT
11	22TS3297RA	TS-SDP4 (IT VENTURE MANAGEMENT)	TS-ITVM	R	0	0	2	4	2	6	NIL	Retained	No changes		Entrepreneurship

#### Tool based Learning

1	22TS1005	CLOUD FOUNDATIONS-AWS(CF)	TBL	R	0	0	0	4	1	4	NIL	Retained	No changes		SKILL DEVELOPMENT
2	22TS1006	GOOGLE CLOUD(GC)	TBL	R	0	0	0	4	1	4	NIL	Retained	No changes		SKILL DEVELOPMENT
3	22TS2006	BLUEPRISM(BP)	TBL	R	0	0	0	4	1	4	NIL	Retained	No changes		SKILL DEVELOPMENT
4	22TS2007	UI PATH(UP)	TBL	R	0	0	0	4	1	4	NIL	Retained	No changes		SKILL DEVELOPMENT
5	22TS2008	ROBOTIC PROCESS AUTOMATION(RPA)	TBL	R	0	0	0	4	1	4	NIL	Retained	No changes		SKILL DEVELOPMENT

#### SCIENCE ELECTIVE COURSES

1	22PH1001	ENGINEERING PHYSICS	BS	R	3	0	2	0	4	5	NIL	Retained	No changes		
2	22PH1008	PHYSICS FOR ELECTRONICS ENGINEERING	BS	R	3	0	2	0	4	5	NIL	Retained	No changes		
3	22PH1004	SOLID STATE PHYSICS	BS	R	3	0	2	0	4	5	NIL	Retained	No changes		
4	22PH4101	QUANTUM PHYSICS FOR ENGINEERS	BS	R	3	0	2	0	4	5	NIL	Retained	No changes		

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5	22CY1001	ENGINEERING CHEMISTRY	BS	R	3	0	2	0	4	5	NIL	Retained	No changes		
6	22CY1003	CHEMISTRY & BIO-INFORMATICS FOR ENGINEERS	BS	R	3	0	2	0	4	5	NIL	Retained	No changes		
7	22CY1004	ORGANIC ELECTRONICS	BS	R	3	0	2	0	4	5	NIL	Retained	No changes		

### OPEN ELECTIVES, FOREIGN LANGUAGE ELECTIVES, MANAGEMENT ELECTIVES

1	22FL3054	FRENCH LANGUAGE	FE	R	2	0	0	0	2	2	NIL	Retained	No changes		
2	22FL3055	GERMAN LANGUAGE	FE	M	3	0	0	0	3	3	NIL	Retained	No changes		
3	22FL3058	JAPANESE LANGUAGE-1	FE	R	2	0	0	0	2	2	NIL	Retained	No changes		
4	22FL3063	JAPANESE LANGUAGE-2	FE	R	3	0	0	0	3	3	NIL	Retained	No changes		
5	22FL3064	JAPANESE LANGUAGE-3	FE	R	3	0	0	0	3	3	NIL	Retained	No changes		
6	22MB4053	MANAGING PERSONAL FINANCES	ME	R	3	0	0	0	3	3	NIL	Retained	No changes		
7	22MB4055	ORGANIZATION MANAGEMENT	ME	R	3	0	0	0	3	3	NIL	Retained	No changes		
8	22CS40A7	FUNDAMENTALS OF SOFTWARE ENGINEERING	OE	R	3	0	0	0	3	3	NIL	Retained	No changes		
9	22CS40A6	FUNDAMENTALS OF DBMS	OE	R	3	0	0	0	3	3	NIL	Retained	No changes		

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S. No	Course Code	Course Title	Category	Mode	L	T	P	S	Cr	CH	Pre-requisite	New/ Revised/ Retained	Stake Holder	Justification	EES
10	22CS40A8	FUNDAMENTALS OF INFORMATION TECHNOLOGY	OE	R	3	0	0	0	3	3	NIL	Retained	No changes		
11	22GN40D7	National Cadet Corps-4	OE	R	2	0	6	0	5	8	NIL	Retained	No changes		
12	22GN40D8	CAMP-1	OE	R	0	0	4	0	5	4	NIL	Retained	No changes		
13	22GN40D9	CAMP-2	OE	R	0	0	4	0	5	4	NIL	Retained	No changes		
14	22GN40D1	National Cadet Corps-1	OE-1	R	2	0	2	0	3	4	NIL	Retained	No changes		
15	22GN40D4	National Service Scheme-1	OE-1	R	2	0	2	0	3	4	NIL	Retained	No changes		
16	22BT40A1	IPR & PATENT LAWS	OE-1	R	3	0	0	0	3	3	NIL	Retained	No changes		
17	22BT40A9	BIOMATERIALS	OE-1	R	3	0	0	0	3	3	NIL	Retained	No changes		
18	22GN40D2	National Cadet Corps-2	OE-2	R	2	0	2	0	3	4	NIL	Retained	No changes		
19	22GN40D5	National Service Scheme-2	OE-2	R	2	0	2	0	3	4	NIL	Retained	No changes		
20	22CE40A2	Environmental Pollution Control Methods	OE-2	R	3	0	0	0	3	3	NIL	Retained	No changes		
21	22CE40A3	Solid and Hazardous waste management	OE-2	R	3	0	0	0	3	3	NIL	Retained	No changes		
22	22CE40A4	Remote Sensing & GIS	OE-2	R	3	0	0	0	3	3	NIL	Retained	No changes		

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S. No	Course Code	Course Title	Category	Mode	L	T	P	S	Cr	CH	Pre-requisite	New/ Revised/ Retained	Stake Holder	Justification	EES
23	22CE40A5	Disaster Management	OE-2	R	3	0	0	0	3	3	NIL	Retained	No changes		
24	22MB4056	Resources Safety and Quality Management	OE-2	R	2	0	0	0	2	2	NIL	Retained	No changes		
25	22MB4058	Construction project Management	OE-2	R	2	0	0	0	2	2	NIL	Retained	No changes		
26	22GN40D3	National Cadet Corps-3	OE-3	R	2	0	2	0	3	4	NIL	Retained	No changes		
27	22GN40D6	National Service Scheme-3	OE-3	R	2	0	2	0	3	4	NIL	Retained	No changes		
28	20ME40B7	Hybrid Electric vehicles	OE-3	R	3	0	0	0	3	3	NIL	Retained	No changes		
29	20ME40B4	Robotics	OE-3	R	3	0	0	0	3	3	NIL	Retained	No changes		
30	20ME40B5	Mechatronics	OE-3	R	3	0	0	0	3	3	NIL	Retained	No changes		
31	20ME40B6	Education for Sustainable Development	OE-3	M	4	0	0	0	4	4	NIL	Retained	No changes		

**Total number of courses =145**

**Percentage of Syllabus Revision = (Total No. of courses revised + new courses) \* 100/Total**

**Courses=2\*100/145=1.37%**

**Percentage of Courses focusing on Employability= 103\*100/145=57.94 %**

**Percentage of Courses focusing on Entrepreneurship= 3\*100/145=2.06 %**

**Percentage of Courses focusing on Skill Development = 58\*100/145=40 %**

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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### Annexure-3 (b)

#### M.Tech – Computer Science and Engineering

#### 2022-23 Admitted Batch Category Wise Course Structure

S. No	Course Code	Course Name	L	T	P	S	Cr	CH
1	22CS5101	MATHEMATICAL FOUNDATIONS FOR COMPUTER SCIENCE	3	2	0	0	5	5
2	22CS5102	COMPUTER ORGANIZATION & ARCHITECTURE	3	2	0	0	5	5
3	22CS5103	DATA STRUCTURES & ALGORITHMS	3	0	2	0	4	5
4	22CS5104	DISTRIBUTED DATABASE MANAGEMENT SYSTEMS	3	0	2	0	4	5
5		ELECTIVE – 1	2	0	2	4	4	8
6		ELECTIVE-2	2	0	2	0	3	4
7	22IE5149	SEMINAR	0	0	4	0	2	4
8	22CS5205	OPERATING SYSTEM DESIGN	3	2	0	0	5	5
9	22CS5206	COMPUTER NETWORKS & SECURITY	3	2	0	0	5	5
10	22CS5207	OBJECT ORIENTED ANALYSIS AND DESIGN	3	0	2	0	4	5
11	22CS5208	ENTERPRISE PROGRAMMING	3	0	2	0	4	5
12		ELECTIVE-3	3	0	4	4	6	11
13		ELECTIVE-4	3	0	4	4	6	11
14	22IE5250	TERMPAPER	0	0	4	0	2	4
15	22IE6050	RESEARCH PROJECT	0	0	72	0	36	72
<b>Total Credits</b>			34	8	100	12	95	154

#### ELECTIVE COURSES LIST

#### ELECTIVE-1

1	22CS51A1	Soft Computing	2	0	2	4	4	8
2	22CS51A2	Machine Learning	2	0	2	4	4	8

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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

S. No	Course Code	Course Name	L	T	P	S	Cr	CH
3	22CS51A3	Data Warehousing & Mining	2	0	2	4	4	8
4	22CS51A4	Natural Language Processing	2	0	2	4	4	8

#### ELECTIVE-2

1	22CS51B1	Requirements Engineering	2	0	2	0	3	4
2	22CS51B2	Principles of Programming Languages	2	0	2	0	3	4
3	22CS51B3	Compiler Design	2	0	2	0	3	4
4	22CS51B4	Software Verification & Validation	2	0	2	0	3	4

#### ELECTIVE-3

1	22CS52C1	Cryptography & Network Security	3	0	4	4	6	11
2	22CS52C2	Mobile computing	3	0	4	4	6	11
3	22CS52C3	High Performance Computing	3	0	4	4	6	11
4	22CS52C4	Network management Systems	3	0	4	4	6	11
5	22CS52C5	Continuous Delivery & Devops	3	0	4	4	6	11

#### ELECTIVE-4

1	22CS52D1	Service Oriented Architecture	3	0	4	4	6	11
2	22CS52D2	Visual Programming	3	0	4	4	6	11
3	22CS52D3	Digital Image Processing	3	0	4	4	6	11
4	22CS52D4	Big Data Analytics	3	0	4	4	6	11

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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

#### Annexure-3 (c)

#### M.Tech - ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

#### 2022-23 Admitted Batch Category Wise Course Structure

S. No	Course Code	Course Name	L	T	P	S	Cr	CH
1	22CS5109	MATHEMATICAL PROGRAMMING - 1	3	2	0	0	5	5
2	22CS5110	COMPUTATIONAL THINKING FOR OBJECT ORIENTED DESIGN	3	0	4	0	5	7
3	22CS5111	BIG DATA ANALYTICS	3	0	2	0	4	5
4	22CS5112	MACHINE LEARNING & REINFORCEMENT LEARNING	3	0	2	0	4	5
5		ELECTIVE - 1	2	0	2	4	4	8
6		ELECTIVE - 2	2	0	2	0	3	4
7	22IE 5149	SEMINAR	0	0	4	0	2	4
8	22CS5113	MATHEMATICAL PROGRAMMING - 2	2	2	0	0	4	4
9	22CS5114	DATA STRUCTURES & ALGORITHMS	3	0	4	4	6	11
10	22CS5115	ADVANCED DATABASES	3	0	2	0	4	5
11	22CS5116	DEEP LEARNING	3	0	4	4	6	11
12		ELECTIVE-3	3	0	2	0	4	5
13		ELECTIVE-4	3	0	2	0	4	5
14	22IE5250	TERMPAPER	0	0	4	0	2	4
15	22IE6050	RESEARCH PROJECT	0	0	72	0	36	72
<b>Total Credits</b>			33	4	106	12	93	155

#### ELECTIVE COURSES LIST

#### ELECTIVE-1

1	22CS51E1	Cloud infrastructure & Services	2	0	2	4	4	8
2	22CS51E2	Parallel & Distributed Computing	2	0	2	4	4	8
3	22CS51E3	Cloud Devops	2	0	2	4	4	8

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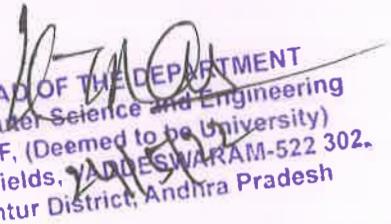
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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

S. No	Course Code	Course Name	L	T	P	S	Cr	CH
<b>ELECTIVE-2</b>								
1	22CS51F1	Computer Vision and Perception	2	0	2	0	3	4
2	22CS51F2	Soft Computing	2	0	2	0	3	4
3	22CS51F3	Artificial Neural Networks	2	0	2	0	3	4
<b>ELECTIVE-3</b>								
1	22CS51G1	Data Warehousing & Mining	3	0	2	0	4	5
2	22CS51G2	Graph & Web Analytics	3	0	2	0	4	5
3	22CS51G3	Big Data Optimization	3	0	2	0	4	5
<b>ELECTIVE-4</b>								
1	22CS52H1	Cognitive Computing	3	0	2	0	4	5
2	22CS52H2	Natural Language Processing	3	0	2	0	4	5
3	22CS52H3	Edge Computing	3	0	2	0	4	5

  
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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### Annexure - 5

### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

#### 2022-23 MOOCS COURSES

S. No	Course Code	Course Title	Category	Mode	L	T	P	S	Cr	CH
1	22FL3052M	LEARN SPANISH: BASIC SPANISH VOCABULARY	FE	M	3	0	0	0	4	4
2	22FL3060M	RUSSIAN FOR BEGINNERS	FE	M	3	0	0	0	4	4
3	22FL3063M	KOREAN LANGUAGE	FE	M	3	0	0	0	4	4
4	22FL3053M	LEARN CHINESE: HSK TEST PREPARATION	FE	M	3	0	0	0	4	4
5	22MB4058M	SIX SIGMA YELLOW BELT	ME	M	4	0	0	0	4	4
6	22MB4059M	SEARCH ENGINE OPTIMIZATION	ME	M	4	0	0	0	4	4
7	22MB4060M	FINTECH: FINANCE INDUSTRY TRANSFORMATION AND REGULATION	ME	M	4	0	0	0	4	4
8	22MB4061M	AN INTRODUCTION TO MICROECONOMICS	ME	M	4	0	0	0	4	4
9	22OE4001M	GRAPHIC DESIGN	OE-1	M	4	0	0	0	4	4
10	22OE4002M	PHOTOGRAPHY BASICS AND BEYOND FROM SMART PHONE TO DSLR	OE-1	M	4	0	0	0	4	4
11	22OE4003M	EXPLORING OUR RESPONSES TO CLIMATE CHANGE	OE-1	M	4	0	0	0	4	4
12	22OE4004M	PATENT LAW FOR ENGINEERS AND SCIENTISTS	OE-1	M	4	0	0	0	3	3
13	22OE4004M	SELF DRIVING CARS	OE-2	M	4	0	0	0	4	4
14	22OE4005M	ENERGY PRODUCTION, DISTRIBUTION & SAFETY	OE-2	M	4	0	0	0	4	4
15	22OE4006M	CONSTRUCTION MANAGEMENT	OE-2	M	4	0	0	0	4	4
16	22OE4007M	GEOGRAPHIC INFORMATION SYSTEMS	OE-2	M	4	0	0	0	4	4
17	22OE4008M	NON-CONVENTIONAL ENERGY RESOURCES	OE-2	M	4	0	0	0	4	4

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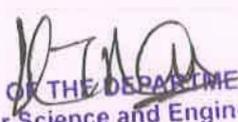
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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

S. No	Course Code	Course Title	Category	Mode	L	T	P	S	Cr	CH
18	220E4009M	LEADING SUSTAINABLE COMMUNITY TRANSFORMATION	OE-3	M	4	0	0	0	4	4
19	220E4010M	DIGITAL MARKETING	OE-3	M	4	0	0	0	4	4
20	220E4234M	INNOVATION MANAGEMENT	OE-3	M	4	0	0	0	4	4

  
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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### Annexure - 6

## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### 2022-23 VALUE ADDED COURSES

S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
1	Artificial Intelligence	AWS	Amazon	AWS Certified Machine Learning – Specialty	<a href="https://aws.amazon.com/certification/certified-machine-learning-specialty/">https://aws.amazon.com/certification/certified-machine-learning-specialty/</a>	Employability	L1
2	Artificial Intelligence	TensorFlow	Google	Google TensorFlow Developer Certificate	<a href="https://www.tensorflow.org/certificate">https://www.tensorflow.org/certificate</a>	Employability	L2
3	Artificial Intelligence	Azure	Microsoft	Microsoft Certified: Azure AI Engineer Associate	<a href="https://docs.microsoft.com/en-us/learn/certifications/azure-ai-engineer/">https://docs.microsoft.com/en-us/learn/certifications/azure-ai-engineer/</a>	Employability	L1
4	Blockchain Technology	Hyperledger	Linux Foundation	Certified Hyperledger Fabric Developer (CHFD)	<a href="https://training.linuxfoundation.org/certification/certified-hyperledger-fabric-developer/">https://training.linuxfoundation.org/certification/certified-hyperledger-fabric-developer/</a>	Employability	L1
5	Cloud & DevOps	AWS	Amazon	AWS Certified Cloud Practitioner	<a href="https://aws.amazon.com/certification/certified-cloud-practitioner/">https://aws.amazon.com/certification/certified-cloud-practitioner/</a>	Employability	L0
6	Cloud & DevOps	AWS	Amazon	AWS Certified Developer - Associate	<a href="https://aws.amazon.com/certification/certified-developer-associate/">https://aws.amazon.com/certification/certified-developer-associate/</a>	Employability	L1
7	Cloud & DevOps	AWS	Amazon	AWS Certified SysOps Administrator - Associate	<a href="https://aws.amazon.com/certification/certified-sysops-administrator-associate/">https://aws.amazon.com/certification/certified-sysops-administrator-associate/</a>	Employability	L1

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S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
8	Cloud & DevOps	AWS	Amazon	AWS Certified Solutions Architect – Associate	<a href="https://aws.amazon.com/certification/certified-solutions-architect-associate/">https://aws.amazon.com/certification/certified-solutions-architect-associate/</a>	Employability	L1
9	Cloud & DevOps	AWS	Amazon	AWS Certified DevOps Engineer - Professional	<a href="https://aws.amazon.com/certification/certified-devops-engineer-professional/">https://aws.amazon.com/certification/certified-devops-engineer-professional/</a>	Employability	L2
10	Cloud & DevOps	Aviatrix	Aviatrix	Aviatrix : Multi Cloud Network Associate Course	<a href="https://aviatrix.teachable.com/">https://aviatrix.teachable.com/</a>	Employability	L0
11	Cloud & DevOps		CompTIA	CompTIA Cloud +	<a href="https://www.comptia.org/certifications/cloud#buyoptions">https://www.comptia.org/certifications/cloud#buyoptions</a>	Employability	L2
12	Cloud & DevOps	GCP	Google	Google : Associate Cloud Engineer	<a href="https://cloud.google.com/certification/cloud-engineer">https://cloud.google.com/certification/cloud-engineer</a>	Employability	L1
13	Cloud & DevOps	IBM Cloud	IBM	IBM Certified Professional Developer - Cloud v4	<a href="https://www.ibm.com/certify/cre?rt?id=C0001904">https://www.ibm.com/certify/cre?rt?id=C0001904</a>	Employability	L2
14	Cloud & DevOps	Kubernetes	Linux Foundation	Certified Kubernetes Application Developer (CKAD)	<a href="https://training.linuxfoundation.org/certification/certified-kubernetes-application-developer-ckad/">https://training.linuxfoundation.org/certification/certified-kubernetes-application-developer-ckad/</a>	Employability	L1
15	Cloud & DevOps	Azure	Microsoft	Microsoft Certified: Azure Fundamentals	<a href="https://docs.microsoft.com/en-us/learn/certifications/azure-fundamentals/">https://docs.microsoft.com/en-us/learn/certifications/azure-fundamentals/</a>	Employability	L0
16	Cloud & DevOps	Azure	Microsoft	Microsoft Certified: Azure Administrator Associate	<a href="https://docs.microsoft.com/en-us/learn/certifications/azure-administrator/">https://docs.microsoft.com/en-us/learn/certifications/azure-administrator/</a>	Employability	L1

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S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
17	Cloud & DevOps	Azure	Microsoft	Microsoft Certified: Azure Developer Associate	<a href="https://docs.microsoft.com/en-us/learn/certifications/azure-developer/">https://docs.microsoft.com/en-us/learn/certifications/azure-developer/</a>	Employability	L1
18	Cloud & DevOps	Azure	Microsoft	Microsoft Certified: DevOps Engineer Expert	<a href="https://docs.microsoft.com/en-us/learn/certifications/devops-engineer/">https://docs.microsoft.com/en-us/learn/certifications/devops-engineer/</a>	Employability	L2
19	Cloud & DevOps	Azure	Microsoft	Microsoft Certified: Azure Solutions Architect Expert	<a href="https://docs.microsoft.com/en-us/learn/certifications/azure-solutions-architect/">https://docs.microsoft.com/en-us/learn/certifications/azure-solutions-architect/</a>	Employability	L2
20	Cloud & DevOps	Oracle Cloud	Oracle	Oracle Cloud Infrastructure 2021 Certified Architect Associate	<a href="https://education.oracle.com/oracle-cloud-infrastructure-2021-certified-architect-associate/trackp_OCIAA2021CA">https://education.oracle.com/oracle-cloud-infrastructure-2021-certified-architect-associate/trackp_OCIAA2021CA</a>	Employability	L0
21	Cloud & DevOps	Oracle Cloud	Oracle	Oracle Cloud Infrastructure 2021 Certified Architect Professional	<a href="https://education.oracle.com/oracle-cloud-infrastructure-2021-certified-architect-professional/trackp_OCICAP2021_OPN">https://education.oracle.com/oracle-cloud-infrastructure-2021-certified-architect-professional/trackp_OCICAP2021_OPN</a>	Employability	L1
22	Cloud & DevOps	Oracle Cloud	Oracle	Oracle Cloud Infrastructure 2021 Certified Cloud Operations Associate	<a href="https://education.oracle.com/oracle-cloud-infrastructure-2021-certified-cloud-operations-associate/trackp_OCICCOA20210_PN">https://education.oracle.com/oracle-cloud-infrastructure-2021-certified-cloud-operations-associate/trackp_OCICCOA20210_PN</a>	Employability	L2

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S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
23	Cloud & DevOps	Red Hat	Red Hat	Red Hat Certified Specialist in Containers and Kubernetes	<a href="https://www.redhat.com/en/services/certification/red-hat-certified-specialist-in-containers-and-kubernetes">https://www.redhat.com/en/services/certification/red-hat-certified-specialist-in-containers-and-kubernetes</a>	Employability	L2
24	CRM Tools	Pega	Pega Systems	PEGA Certified System Architect	<a href="https://academy.pega.com/exam/pega-certified-system-architect-2">https://academy.pega.com/exam/pega-certified-system-architect-2</a>	Employability	L1
25	CRM Tools	Pega	Pega Systems	PEGA Certified Senior System Architect	<a href="https://academy.pega.com/exam/pega-certified-senior-system-architect-1">https://academy.pega.com/exam/pega-certified-senior-system-architect-1</a>	Employability	L2
26	CRM Tools	Pega	Pega Systems	PEGA Certified Lead System Architect	<a href="https://academy.pega.com/exam/pega-lsa-architecture-exam-0">https://academy.pega.com/exam/pega-lsa-architecture-exam-0</a>	Employability	L3
27	CRM Tools	Salesforce	Salesforce	Salesforce Certified Administrator	<a href="https://trailhead.salesforce.com/credentials/administrator">https://trailhead.salesforce.com/credentials/administrator</a>	Employability	L1
28	CRM Tools	Salesforce	Salesforce	Salesforce Certified Developer	<a href="https://trailhead.salesforce.com/credentials/developeroverview">https://trailhead.salesforce.com/credentials/developeroverview</a>	Employability	L2
29	CRM Tools	ServiceNow	ServiceNow	ServiceNow Certified System Administrator	<a href="https://www.servicenow.com/services/training-and-certification.html">https://www.servicenow.com/services/training-and-certification.html</a>	Employability	L1
30	CRM Tools	ServiceNow	ServiceNow	ServiceNow Certified Application Developer	<a href="https://www.servicenow.com/services/training-and-certification.html">https://www.servicenow.com/services/training-and-certification.html</a>	Employability	L2
31	Cyber Security	AWS	Amazon	AWS Certified Security - Specialty	<a href="https://aws.amazon.com/certification/certified-security-specialty/">https://aws.amazon.com/certification/certified-security-specialty/</a>	Employability	L1

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S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
32	Cyber Security		CompTIA	CompTIA PenTest +	<a href="https://www.comptia.org/certifications/pentest">https://www.comptia.org/certifications/pentest</a>	Employability	L1
33	Cyber Security		CompTIA	CompTIA Security +	<a href="https://www.comptia.org/certifications/security">https://www.comptia.org/certifications/security</a>	Employability	L2
34	Cyber Security		ISC2	CSSLP – The Industry's Premier Secure Software Development Certification	<a href="https://www.isc2.org/Certifications/CSSLP#">https://www.isc2.org/Certifications/CSSLP#</a>	Employability	L1
35	Cyber Security		Palo Alto	PCCET: Palo Alto Networks Certified Cybersecurity Entry-level Technician	<a href="https://wsr.pearsonvue.com/testtaker/registration&gt;SelectExamPage/PALOALTO?conversationId=607683">https://wsr.pearsonvue.com/testtaker/registration&gt;SelectExamPage/PALOALTO?conversationId=607683</a>	Employability	L0
36	Cyber Security		Palo Alto	PCNSA: Palo Alto Networks Certified Network Security Administrator	<a href="https://wsr.pearsonvue.com/testtaker/registration&gt;SelectExamPage/PALOALTO?conversationId=607683">https://wsr.pearsonvue.com/testtaker/registration&gt;SelectExamPage/PALOALTO?conversationId=607683</a>	Employability	L1
37	Cyber Security		Palo Alto	PCCSE: Prisma Certified Cloud Security Engineer	<a href="https://wsr.pearsonvue.com/testtaker/registration&gt;SelectExamPage/PALOALTO?conversationId=607683">https://wsr.pearsonvue.com/testtaker/registration&gt;SelectExamPage/PALOALTO?conversationId=607683</a>	Employability	L2
38	Cyber Security		Palo Alto	PCNSE: Palo Alto Networks Certified Network Security Engineer	<a href="https://wsr.pearsonvue.com/testtaker/common/SessionExpired.htm?conversationId=607683">https://wsr.pearsonvue.com/testtaker/common/SessionExpired.htm?conversationId=607683</a>	Employability	L2

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S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
39	Data Science	AWS	Amazon	AWS Certified Data Analytics - Specialty	<a href="https://aws.amazon.com/certification/certified-data-analytics-specialty/">https://aws.amazon.com/certification/certified-data-analytics-specialty/</a>	Employability	L2
40	Data Science	SPSS-Statistics	IBM	IBM Certified Specialist - SPSS Statistics Level 1 v2	<a href="https://www.ibm.com/certify/ceirt?id=47100102">https://www.ibm.com/certify/ceirt?id=47100102</a>	Employability	L1
41	Data Science	SPSS-Modeller	IBM	IBM Certified Specialist - SPSS Modeler Professional v3	<a href="https://www.ibm.com/certify/ceirt?id=47100203">https://www.ibm.com/certify/ceirt?id=47100203</a>	Employability	L2
42	Data Science	Big Data	IBM	IBM Certified Data Engineer - Big Data	<a href="https://www.ibm.com/certify/ceirt?id=50001501">https://www.ibm.com/certify/ceirt?id=50001501</a>	Employability	L2
43	Data Science	Power BI	Microsoft	Microsoft Certified: Data Analyst Associate	<a href="https://docs.microsoft.com/en-us/learn/certifications/data-analyst-associate/">https://docs.microsoft.com/en-us/learn/certifications/data-analyst-associate/</a>	Employability	L1
44	Data Science	Power BI	Microsoft	MCSA: BI Reporting	<a href="https://docs.microsoft.com/en-us/learn/certifications/mcsa-bi-reporting/">https://docs.microsoft.com/en-us/learn/certifications/mcsa-bi-reporting/</a>	Employability	L1
45	Data Science	Azure	Microsoft	Microsoft Certified: Azure Data Engineer Associate	<a href="https://docs.microsoft.com/en-us/learn/certifications/azure-data-engineer/">https://docs.microsoft.com/en-us/learn/certifications/azure-data-engineer/</a>	Employability	L1
46	Data Science	Azure	Microsoft	Microsoft Certified: Azure Data Scientist Associate	<a href="https://docs.microsoft.com/en-us/learn/certifications/azure-data-scientist/">https://docs.microsoft.com/en-us/learn/certifications/azure-data-scientist/</a>	Employability	L1
47	Data Science		SAS	Data Curation for SAS Data Scientists	<a href="https://www.sas.com/en_us/certification/credentials/data-management/data-">https://www.sas.com/en_us/certification/credentials/data-management/data-</a>	Employability	L1

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S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
					<a href="#">curation.html#par reference d913</a>		
48	Data Science		SAS	SAS Big Data Preparation, Statistics, and Visual Exploration Exam	<a href="https://www.sas.com/en_us/certification/credentials/data-management/big-data-professional/big-data-preparation-exam.html#par reference d913">https://www.sas.com/en_us/certification/credentials/data-management/big-data-professional/big-data-preparation-exam.html#par reference d913</a>	Employability	L1
49	Data Science		SAS	SAS® Certified Predictive Modeler Using SAS® Enterprise Miner™ 14	<a href="https://www.sas.com/en_us/certification/credentials/advanced-analytics/predictive-modeler-14.html">https://www.sas.com/en_us/certification/credentials/advanced-analytics/predictive-modeler-14.html</a>	Employability	L1
50	Data Science		SAS	SAS® Certified Specialist: Machine Learning Using SAS Viya 3.5	<a href="https://www.sas.com/en_us/certification/credentials/advanced-analytics/machine-learning-specialist.html">https://www.sas.com/en_us/certification/credentials/advanced-analytics/machine-learning-specialist.html</a>	Employability	L1
51	Data Science		SAS	SAS® Big Data Programming and Loading Exam	<a href="https://www.sas.com/en_us/certification/credentials/data-management/big-data-professional/big-data-programming-loading-exam.html#par reference d913">https://www.sas.com/en_us/certification/credentials/data-management/big-data-professional/big-data-programming-loading-exam.html#par reference d913</a>	Employability	L2
52	Data Science		SAS	SAS Certified Specialist: Advanced Predictive Modeling	<a href="https://www.sas.com/en_us/certification/credentials/advanced-analytics/advanced-analytics-professional/advanced-">https://www.sas.com/en_us/certification/credentials/advanced-analytics/advanced-analytics-professional/advanced-</a>	Employability	L2

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S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
					<a href="#">predictive-modeling-exam.html#par reference d913</a>		
53	Data Science		SAS	SAS® Certified Specialist: Forecasting and Optimization Using SAS® Viya 3.5	<a href="https://www.sas.com/en_us/certification/credentials/advanced-analytics/forecasting-and-optimization-specialist.html">https://www.sas.com/en_us/certification/credentials/advanced-analytics/forecasting-and-optimization-specialist.html</a>	Employability	L2
54	Data Science		SAS	SAS Certified Specialist: Text Analytics, Time Series, Experimentation and Optimization	<a href="https://www.sas.com/en_us/certification/credentials/advanced-analytics/advanced-analytics-professional/text-analytics-exam.html#par reference d913">https://www.sas.com/en_us/certification/credentials/advanced-analytics/advanced-analytics-professional/text-analytics-exam.html#par reference d913</a>	Employability	L3
55	Data Science		SAS	SAS® Certified Specialist: Natural Language Processing and Computer Vision Using SAS Viya 3.5	<a href="https://www.sas.com/en_us/certification/credentials/advanced-analytics/natural-language-computer-vision-specialist.html">https://www.sas.com/en_us/certification/credentials/advanced-analytics/natural-language-computer-vision-specialist.html</a>	Employability	L3
56	Data Science	Tableau	Tableau	Tableau Desktop Certified Associate	<a href="https://www.tableau.com/learn/certification/desktop-certified-associate">https://www.tableau.com/learn/certification/desktop-certified-associate</a>	Employability	L1
57	Data Science	Tableau	Tableau	Tableau Certified Data Analyst	<a href="https://www.tableau.com/learn/certification/certified-data-analyst">https://www.tableau.com/learn/certification/certified-data-analyst</a>	Employability	L1
58	Database Management Systems	MongoDB	MongoDB University	MongoDB Certified Developer	<a href="https://university.mongodb.com/certification/developer/about">https://university.mongodb.com/certification/developer/about</a>	Employability	L1

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 KLEF, (Deemed to be University)  
 Green Fields, VADDESWARAM 522 302.  
 Guntur District, Andhra Pradesh



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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
59	Database Management Systems	MongoDB	MongoDB University	MongoDB Certified Database Administrator	<a href="https://university.mongodb.com/certification/dba/about">https://university.mongodb.com/certification/dba/about</a>	Employability	L2
60	Database Management Systems	MySQL	Oracle	Oracle : MySQL 5.7 Database Certified Administrator Professional	<a href="https://education.oracle.com/oracle-certified-professional-mysql-57-database-administrator/trackp_888">https://education.oracle.com/oracle-certified-professional-mysql-57-database-administrator/trackp_888</a>	Employability	L2
61	Database Management Systems	MySQL	Oracle	Oracle : MySQL 8.0 Database Certified Administrator Certification	<a href="https://education.oracle.com/oracle-certified-professional-mysql-80-database-administrator/trackp_MYSQLDB_A80OCP">https://education.oracle.com/oracle-certified-professional-mysql-80-database-administrator/trackp_MYSQLDB_A80OCP</a>	Employability	L2
62	Game Development	Unity	Unity	Unity Certified User: Programmer	<a href="https://unity.com/products/unity-certifications/user-programmer">https://unity.com/products/unity-certifications/user-programmer</a>	Employability	L0
63	Game Development	Unity	Unity	Unity Certified User: VR Developer	<a href="https://unity.com/products/unity-certifications/vr-developer">https://unity.com/products/unity-certifications/vr-developer</a>	Employability	L1
64	Game Development	Unity	Unity	Unity Certified Associate: Game Developer	<a href="https://unity.com/products/unity-certifications/associate-game-developer">https://unity.com/products/unity-certifications/associate-game-developer</a>	Employability	L1
65	Game Development	Unity	Unity	Unity Certified Associate: Programmer	<a href="https://unity.com/products/unity-certifications/associate-artist">https://unity.com/products/unity-certifications/associate-artist</a>	Employability	L1
66	Integration Tools	MuleSoft	MuleSoft	MuleSoft Certified Developer - Level 1 (Mule 4)	<a href="https://training.mulesoft.com/certification/developer-mule4-level1">https://training.mulesoft.com/certification/developer-mule4-level1</a>	Employability	L0

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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
67	Integration Tools	MuleSoft	MuleSoft	MuleSoft Certified Developer - Level 1 (Mule 4) DELTA	<a href="https://training.mulesoft.com/certification/developer-mule4for3-delta-level1">https://training.mulesoft.com/certification/developer-mule4for3-delta-level1</a>	Employability	L1
68	Integration Tools	MuleSoft	MuleSoft	MuleSoft Certified Developer - Integration and API Associate (Mule 3)	<a href="https://training.mulesoft.com/certification/developer-integration-API-associate-mule3-level1">https://training.mulesoft.com/certification/developer-integration-API-associate-mule3-level1</a>	Employability	L2
69	Integration Tools	MuleSoft	MuleSoft	MuleSoft Certified Developer - Integration Professional (Mule 3)	<a href="https://training.mulesoft.com/certification/developer-integration-professional-mule3-level2">https://training.mulesoft.com/certification/developer-integration-professional-mule3-level2</a>	Employability	L2
70	Networks	AWS	Amazon	AWS Certified Advanced Networking - Specialty	<a href="https://aws.amazon.com/certification/certified-advanced-networking-specialty/">https://aws.amazon.com/certification/certified-advanced-networking-specialty/</a>	Employability	L2
71	Networks	CISCO	CISCO	Cisco Certified Network Administrator	<a href="https://www.cisco.com/c/en/us/training-events/training-certifications/certifications/associate/ccna.html">https://www.cisco.com/c/en/us/training-events/training-certifications/certifications/associate/ccna.html</a>		L2
72	Networks		CompTIA	CompTIA Network +	<a href="https://www.comptia.org/certifications/network">https://www.comptia.org/certifications/network</a>	Employability	L2
73	Programming	Competitive Coding	Codechef	Code Chef Certified Data Structure & Algorithms Programme	<a href="https://www.codechef.com/certification/data-structures-and-algorithms">https://www.codechef.com/certification/data-structures-and-algorithms</a>	Employability	L1
74	Programming	Competitive Coding	Codechef	Code Chef Certified Data Structure & Algorithms Programme	<a href="https://www.codechef.com/certification/data-structures-and-algorithms">https://www.codechef.com/certification/data-structures-and-algorithms</a>	Employability	L2

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S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
75	Programming	Python	Open EDG	PCAP – Certified Associate in Python Programming Certification	<a href="https://pythoninstitute.org/certification/pcap-certification-associate/">https://pythoninstitute.org/certification/pcap-certification-associate/</a>	Employability	L1
76	Programming	C Language	Open EDG	CLA – C Programming Language Certified Associate Certification (CLA – C Certified Associate Programmer Certification)	<a href="https://cppinstitute.org/cla-c-programming-language-certified-associate">https://cppinstitute.org/cla-c-programming-language-certified-associate</a>	Employability	L1
77	Programming	C++ Language	Open EDG	CPA – C++ Certified Associate Programmer Certification	<a href="https://cppinstitute.org/cpa-c-certified-associate-programmer-certification">https://cppinstitute.org/cpa-c-certified-associate-programmer-certification</a>	Employability	L1
78	Programming	Python	Open EDG	PCPP – Certified Professional in Python Programming Certifications	<a href="https://pythoninstitute.org/certification/pcpp-certification-professional/">https://pythoninstitute.org/certification/pcpp-certification-professional/</a>	Employability	L2
79	Programming	C Language	Open EDG	CLP – C Certified Professional Programmer Certification	<a href="https://cppinstitute.org/clp-c-certified-professional-programmer">https://cppinstitute.org/clp-c-certified-professional-programmer</a>	Employability	L2
80	Programming	C++ Language	Open EDG	CPP – C++ Certified Professional	<a href="https://cppinstitute.org/cpp-c-certified-professional-programmer">https://cppinstitute.org/cpp-c-certified-professional-programmer</a>	Employability	L2

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24/10/22



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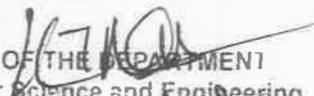
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S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
				Programmer Certification			
81	Programming	Core Java	Oracle	Oracle Certified Associate, Java SE 8 Programmer	<a href="https://education.oracle.com/oracle-certified-associate-java-se-8-programmer/trackp_333">https://education.oracle.com/oracle-certified-associate-java-se-8-programmer/trackp_333</a>	Employability	L1
82	Programming	Core Java	Oracle	Oracle Certified Professional, Java SE 8 Programmer	<a href="https://education.oracle.com/oracle-certified-professional-java-se-8-programmer/trackp_357">https://education.oracle.com/oracle-certified-professional-java-se-8-programmer/trackp_357</a>	Employability	L2
83	Quantum Computing	Quantum Composer	IBM	IBM Certified Associate Developer - Quantum Computation using Qiskit v0.2X	<a href="https://www.ibm.com/certify/ceirt?id=C0010300">https://www.ibm.com/certify/ceirt?id=C0010300</a>	Employability	L1
84	Robotic Process Automation	Automation Anywhere	Automation Anywhere	Automation Anywhere Certified Advanced RPA Professional (Automation 360)	<a href="https://university.automationanywhere.com/checkout?cid=xZuP2jL9Ar01&amp;co=695">https://university.automationanywhere.com/checkout?cid=xZuP2jL9Ar01&amp;co=695</a>	Employability	L1
85	Robotic Process Automation	Automation Anywhere	Automation Anywhere	Automation Anywhere Certified Advanced RPA Professional (v11)	<a href="https://university.automationanywhere.com/checkout?cid=4iKT2JrsWj41&amp;co=152">https://university.automationanywhere.com/checkout?cid=4iKT2JrsWj41&amp;co=152</a>	Employability	L2
86	Robotic Process Automation	BluePrism	BluePrism	ASDEV01: Blue Prism Certified Associate Developer Exam	<a href="https://wsr.pearsonvue.com/testtaker/registration/ExamSeriesDetailPage/BLUEPRISM?conversationId=1955764">https://wsr.pearsonvue.com/testtaker/registration/ExamSeriesDetailPage/BLUEPRISM?conversationId=1955764</a>	Employability	L1

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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
87	Robotic Process Automation	BluePrism	BluePrism	AD01: Blue Prism Certified Developer Exam	<a href="https://wsr.pearsonvue.com/testtaker/registration/ExamSeriesDetailPage/BLUEPRISM?conversationId=1955898">https://wsr.pearsonvue.com/testtaker/registration/ExamSeriesDetailPage/BLUEPRISM?conversationId=1955898</a>	Employability	L2
88	Robotic Process Automation	UiPath	UiPath	UiPath Certified RPA Associate (UiRPA)	<a href="https://home.pearsonvue.com/uipath">https://home.pearsonvue.com/uipath</a>	Employability	L1
89	Robotic Process Automation	UiPath	UiPath	UiPath Certified Advanced RPA Developer (UiARD)	<a href="https://home.pearsonvue.com/uipath">https://home.pearsonvue.com/uipath</a>	Employability	L2
90	Software Engineering	Scrum	Scrum Study	Scrum Study: Scrum Developer Certified	<a href="https://www.scrumstudy.com/certification/scrum-developer-certification">https://www.scrumstudy.com/certification/scrum-developer-certification</a>	Employability	L1
91	Software Engineering	Scrum	Scrum Study	Scrum Study: Scrum Master Certified	<a href="https://www.scrumstudy.com/certification/scrum-master-certification">https://www.scrumstudy.com/certification/scrum-master-certification</a>	Employability	L1
92	Software Engineering	Agile Methodology	Scrum Study	Scrum Study: Agile Master Certified	<a href="https://www.scrumstudy.com/certification/agile-certification">https://www.scrumstudy.com/certification/agile-certification</a>	Employability	L1
93	Software Engineering	Scrum	Scrum Study	Scrum Study: Scrum Product Owner Certified	<a href="https://www.scrumstudy.com/certification/scrum-product-owner-certification">https://www.scrumstudy.com/certification/scrum-product-owner-certification</a>	Employability	L1
94	Software Engineering	Scrum	Scrum Study	Scrum Study: Certified Trainer	<a href="https://www.scrumstudy.com/certification/trainer-accreditation-process">https://www.scrumstudy.com/certification/trainer-accreditation-process</a>	Employability	L1

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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
95	Software Engineering	Scaled Scrum	Scrum Study	Scrum Study: Scaled Scrum Master Certified	<a href="https://www.scrumstudy.com/certification/scaled-scrum-master-certified">https://www.scrumstudy.com/certification/scaled-scrum-master-certified</a>	Employability	L2
96	Software Engineering	Scaled Scrum	Scrum Study	Scrum Study: Scaled Scrum Product Owner Certified	<a href="https://www.scrumstudy.com/certification/scaled-scrum-product-owner-certified">https://www.scrumstudy.com/certification/scaled-scrum-product-owner-certified</a>	Employability	L2
97	Software Engineering	Scrum	Scrum Study	Scrum Study: Expert Scrum Master Certified	<a href="https://www.scrumstudy.com/certification/expert-scrum-master-certification">https://www.scrumstudy.com/certification/expert-scrum-master-certification</a>	Employability	L2
98	Software Engineering	Scrum	Scrum.org	Scrum.org: Professional Scrum Master	<a href="https://www.scrum.org/professional-scrum-certifications/professional-scrum-master-assessments">https://www.scrum.org/professional-scrum-certifications/professional-scrum-master-assessments</a>	Employability	L2
99	Software Engineering	Scrum	Scrum.org	Scrum.org: Professional Scrum Product Owner	<a href="https://www.scrum.org/professional-scrum-product-owner-certifications">https://www.scrum.org/professional-scrum-product-owner-certifications</a>	Employability	L2
100	Software Engineering	Scrum	Scrum.org	Scrum.org: Professional Scrum Developer	<a href="https://www.scrum.org/professional-scrum-developer-certification">https://www.scrum.org/professional-scrum-developer-certification</a>	Employability	L2
101	Software Engineering	Scaled Scrum	Scrum.org	Scrum.org: Scaled Professional Scrum	<a href="https://www.scrum.org/scaled-professional-scrum-certification">https://www.scrum.org/scaled-professional-scrum-certification</a>	Employability	L2
102	Software Engineering	Agile Methodology	Scrum.org	Scrum.org: Professional Agile Leadership	<a href="https://www.scrum.org/professional-agile-leadership-certification">https://www.scrum.org/professional-agile-leadership-certification</a>	Employability	L2
103	Software Engineering	Agile Methodology	Scrum.org	Scrum.org: Professional Agile Leadership - EBM	<a href="https://www.scrum.org/assessments/professional-agile-leadership-ebm">https://www.scrum.org/assessments/professional-agile-leadership-ebm</a>	Employability	L2

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S. No	Domain	Technology / Tool	Certification Provider	Certification Title	Certification Link	Certification Pathway	Level
					<a href="#">leadershiptm-evidence-based-management-certification</a>		
104	Software Engineering	Kanban	Scrum.org	Scrum.org: Professional Scrum with Kanban	<a href="https://www.scrum.org/professional-scrum-with-kanban-certification">https://www.scrum.org/professional-scrum-with-kanban-certification</a>	Employability	L2
105	Software Engineering	Scrum	Scrum.org	Scrum.org: Professional Scrum with User Experience	<a href="https://www.scrum.org/professional-scrum-user-experience-certification">https://www.scrum.org/professional-scrum-user-experience-certification</a>	Employability	L2
106	System Administration	Linux	Linux Foundation	Linux Foundation Certified IT Associate (LFCA)	<a href="https://training.linuxfoundation.org/certification/certified-it-associate/">https://training.linuxfoundation.org/certification/certified-it-associate/</a>	Employability	L1
107	System Administration	Linux	Linux Professional Institute	Linux Professional Institute Linux Essentials	<a href="https://www.lpi.org/our-certifications/linux-essentials-overview">https://www.lpi.org/our-certifications/linux-essentials-overview</a>	Employability	L1
108	System Administration	Linux	Red Hat	Red Hat Certified System Administrator (RHCSA)	<a href="https://www.redhat.com/en/services/certification/rhcsa">https://www.redhat.com/en/services/certification/rhcsa</a>	Employability	L1
109	Web & Mobile Development	Angular	Angular Training	Angular Developer Certified LEVEL 2	<a href="https://angulartraining.gumroad.com/l/ng-cert-L2">https://angulartraining.gumroad.com/l/ng-cert-L2</a>	Employability	L1
110	Web & Mobile Development	Javascript	GoDaddy	Go Daddy: Certified Web Professional	<a href="https://godaddyacademy.com/certification/#professional">https://godaddyacademy.com/certification/#professional</a>	Employability	L1
111	Web & Mobile Development	PHP	GoDaddy	Go Daddy: Certified Web Developer	<a href="https://godaddyacademy.com/certification/#developer">https://godaddyacademy.com/certification/#developer</a>	Employability	L2
112	Web & Mobile Development	Python, Django	GoDaddy	Go Daddy: Certified Web Architect	<a href="https://godaddyacademy.com/certification/#architect">https://godaddyacademy.com/certification/#architect</a>	Employability	L3

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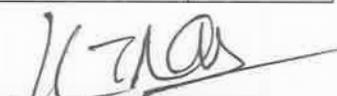
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113	Web & Mobile Development	NodeJS	Linux Foundation	OpenJS Node.js Application Developer (JSNAD)	<a href="https://training.linuxfoundation.org/certification/jsnad/">https://training.linuxfoundation.org/certification/jsnad/</a>	Employability	L1
114	Web & Mobile Development	NodeJS	Linux Foundation	OpenJS Node.js Services Developer (JSNSD)	<a href="https://training.linuxfoundation.org/certification/jsnsd/">https://training.linuxfoundation.org/certification/jsnsd/</a>	Employability	L2
115	Web & Mobile Development	Java EE	Oracle	Oracle Certified Professional, Java EE 7 Application Developer	<a href="https://education.oracle.com/oracle-certified-professional-java-ee-7-application-developer/trackp_900">https://education.oracle.com/oracle-certified-professional-java-ee-7-application-developer/trackp_900</a>	Employability	L3
116	Web & Mobile Development	Java EE	Red Hat	Red Hat Certified Enterprise Application Developer	<a href="https://www.redhat.com/en/services/training/ex183-red-hat-certified-enterprise-application-developer-exam">https://www.redhat.com/en/services/training/ex183-red-hat-certified-enterprise-application-developer-exam</a>	Employability	L1
117	Web & Mobile Development	Java EE	Red Hat	Red Hat Certified Enterprise Microservices Developer	<a href="https://www.redhat.com/en/services/certification/red-hat-certified-enterprise-microservices-developer">https://www.redhat.com/en/services/certification/red-hat-certified-enterprise-microservices-developer</a>	Employability	L2
118	Web & Mobile Development	OpenShift	Red Hat	Red Hat Certified Specialist in OpenShift Application Development	<a href="https://www.redhat.com/en/services/certification/rhcs-openshift-application-development">https://www.redhat.com/en/services/certification/rhcs-openshift-application-development</a>	Employability	L3

  
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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### Annexure - 7

### Skill Development and Progression

#### Cohort wise Global Certifications

Cohort-1, 1A	Cohort-2	Cohort-3	Cohort-4	Cohort-5A	Cohort-5B	Cohort-6	Cohort-8
<a href="https://aws.amazon.com/certification/certified-developer-associate/">https://aws.amazon.com/certification/certified-developer-associate/</a> Red Hat Certified System Administrator	<a href="https://pythoninstitute.org/certification/pcap-certification-associate/">https://pythoninstitute.org/certification/pcap-certification-associate/</a> <a href="https://aws.amazon.com/certification/certified-developer-associate/">https://aws.amazon.com/certification/certified-developer-associate/</a>	MySQL 8.0 Database Developer   Oracle University	Levels   CodeChef	<a href="https://docs.microsoft.com/en-us/learn/certifications/azure-ai-fundamental">https://docs.microsoft.com/en-us/learn/certifications/azure-ai-fundamental</a>	<a href="https://university.mongodb.com/certification/developer/about">https://university.mongodb.com/certification/developer/about</a>	<a href="https://www.comptia.org/certifications/cybersecurity-analyst">https://www.comptia.org/certifications/cybersecurity-analyst</a>	CPA – C++ Certified Associate Programmer Certification   C++ Institute   C/C++ Certification and Training Programs

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Cohort-1, 1A	Cohort-2	Cohort-3	Cohort-4	Cohort-5A	Cohort-5B	Cohort-6	Cohort-8
Microsoft Certified: Azure IoT Developer Specialty	<a href="https://university.mongodb.com/certification/developer/about">https://university.mongodb.com/certification/developer/about</a> <a href="https://www.redhat.com/en/services/certification/red-hat-certified-enterprise-microservices-developer">https://www.redhat.com/en/services/certification/red-hat-certified-enterprise-microservices-developer</a> <a href="https://godaddyacademy.com/cert">https://godaddyacademy.com/cert</a>		SAS Global Certification   SAS India CPA – C++ Certified Associate Programmer Certification   C++ Institute   C/C++ Certification and Training Programs	<a href="https://aws.amazon.com/certification/certified-machine-learning-specialty/">https://aws.amazon.com/certification/certified-machine-learning-specialty/</a> <a href="https://docs.microsoft.com/en-us/learn/certifications/azure-data-scientist/">https://docs.microsoft.com/en-us/learn/certifications/azure-data-scientist/</a> <a href="https://aws.amazon.com/certification/certified-data-associate/cybersecurity/">https://aws.amazon.com/certification/certified-data-associate/cybersecurity/</a>	cation/credential s/data- management/big- data- professional.html <a href="https://docs.microsoft.com/en-us/training-events/training-events/ai-certifications/certifications/certifications/associate/cybersecurity/">https://docs.microsoft.com/en-us/training-events/training-events/ai-certifications/certifications/certifications/associate/cybersecurity/</a>	Fundamentals Certification   Cybersecurity Certification <a href="https://www.certificationvirtualreality.com/virtual-reality-developer/">https://www.certificationvirtualreality.com/virtual-reality-developer/</a>	<a href="https://www.globaltechcouncil.org/virtual-reality/certified-virtual-reality-developer/">https://www.globaltechcouncil.org/virtual-reality/certified-virtual-reality-developer/</a> <a href="https://unity.com/products/unity-certifications/associate-game-developer">https://unity.com/products/unity-certifications/associate-game-developer</a>

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Cohort-1, 1A	Cohort-2	Cohort-3	Cohort-4	Cohort-5A	Cohort-5B	Cohort-6	Cohort-8
	ification/#archite ct		(cppinstitute.o rg)		analytics- specialty/	Certified Smart Contract Developer™   Certification   Blockchain Council (blockchain- council.org)  <a href="https://aws.amazon.com/certification/certified-security-specialty/">https://aws.amazon.com/certification/certified-security-specialty/</a>	<a href="https://cloud.google.com/certification">https://cloud.g oogle.com/cert ification</a>  <a href="https://developers.google.com/certification/associate-android-developer">https://develop ers.google.co m/certification /associate- android- developer</a>

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Cohort-1, 1A	Cohort-2	Cohort-3	Cohort-4	Cohort-5A	Cohort-5B	Cohort-6	Cohort-8
						AWS Certified Security - Specialty Certification   AWS Certification   AWS (amazon.com)	

*R. T. Rao*  
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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Annexure - 7

Y18, Y19 and Y20 2021-22 Odd Semester Course Wise Result Analytics

Batch	Course Code	Course Title	No of Students Registered	No of Students Detained	No of Students Passed	NA Count	Pass %
Y18	18FL3053M	LEARN CHINESE: HSK TEST PREPARATION	57	0	57	0	100
Y18	18FL3060M	RUSSIAN FOR BEGINNERS	389	0	389	0	100
Y18	18FL3062M	LEARN SPANISH: BASIC SPANISH VOCABULARY	382	0	382	0	100
Y18	18FL3062M	LEARN SPANISH: BASIC SPANISH VOCABULARY	138	0	138	0	100
Y18	18FL3063M	KOREAN LANGUAGE	324	0	324	0	100
Y18	18IE4048	MAIN PROJECT	1152	0	1151	0	99.91
Y18	18IE4050	PRACTICE SCHOOL	48	0	48	0	100
Y18	18IE4051	INTERNSHIP	90	0	90	0	100
Y18	18MB4058M	SIX SIGMA YELLOW BELT(SPECIALIZATION)	494	0	494	0	100
Y18	18MB4058M	SIX SIGMA YELLOW BELT(SPECIALIZATION)	138	0	138	0	100
Y18	18MB4059M	SEARCH ENGINE OPTIMIZATION(SPECIALIZATION)	479	0	479	0	100

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Batch	Course Code	Course Title	No of Students Registered	No of Students Detained	No of Students Passed	NA Count	Pass %
Y18	18MB4060M	FINTECH: FINANCE INDUSTRY TRANSFORMATION AND REGULATION(SPECIALIZATION)	179	0	178	0	99.44
Y18	18OE4001M	GRAPHIC DESIGN	430	0	430	0	100
Y18	18OE4002M	PHOTOGRAPHY BASICS	485	0	485	0	100
Y18	18OE4002M	PHOTOGRAPHY BASICS	138	0	138	0	100
Y18	18OE4003M	EXPLORING OUR RESPONSES TO CLIMATE CHANGE	236	0	236	0	100
Y18	18PH4002M	OPTICAL ENGINEERING	109	0	109	0	100
Y18	18PH4003M	SEMICONDUCTOR DEVICES	107	0	107	0	100
Y18	18UC0007	INDIAN HERITAGE AND CULTURE	138	0	138	0	100
Y18	18UC0007	INDIAN HERITAGE AND CULTURE	1151	0	1151	0	100
Y18	18UC0010	UNIVERSAL HUMAN VALUES & PROFESSIONAL ETHICS	1152	0	1146	0	99.48
Y18	18UC0010	UNIVERSAL HUMAN VALUES &	138	0	138	0	100

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Batch	Course Code	Course Title	No of Students Registered	No of Students Detained	No of Students Passed	NA Count	Pass %
		PROFESSIONAL ETHICS					
Y19	18CY1005	CHEMISTRY FOR ENGINEERS	951	0	893	7	93.9
Y19	18PH4101	QUANTUM PHYSICS FOR ENGINEERS	261	0	230	10	88.12
Y19	18UC0009M	ECOLOGY & ENVIRONMENT	177	0	152	0	85.88
Y19	19CS2210P	PARALLEL & DISTRIBUTED COMPUTING	20	0	20	0	100
Y19	19CS2210R	PARALLEL & DISTRIBUTED COMPUTING	73	0	57	0	78.08
Y19	19CS3021A	MACHINE LEARNING	53	0	51	0	96.23
Y19	19CS3021P	MACHINE LEARNING	58	0	58	0	100
Y19	19CS3021S	MACHINE LEARNING	365	0	319	29	87.4
Y19	19CS3022P	SOFT COMPUTING (CI)	19	0	19	0	100
Y19	19CS3022R	SOFT COMPUTING (CI)	86	0	78	0	90.7
Y19	19CS3026P	ARTIFICIAL NEURAL NETWORKS (CI)	25	0	25	0	100
Y19	19CS3026R	ARTIFICIAL NEURAL NETWORKS (CI)	345	0	341	0	98.84
Y19	19CS3032P	ADVANCED OPERATING SYSTEMS	8	0	8	0	100

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Batch	Course Code	Course Title	No of Students Registered	No of Students Detained	No of Students Passed	NA Count	Pass %
Y19	19CS3032R	ADVANCED OPERATING SYSTEMS	139	0	126	0	90.65
Y19	19CS3036P	CLOUD INFRASTRUCTURE & SERVICES	20	0	20	0	100
Y19	19CS3036R	CLOUD INFRASTRUCTURE & SERVICES	801	0	761	2	95.01
Y19	19CS3037A	CLOUD INFRASTRUCTURE & SERVICES	4	0	4	0	100
Y19	19CS3037P	CLOUD INFRASTRUCTURE & SERVICES	12	0	12	0	100
Y19	19CS3037S	CLOUD INFRASTRUCTURE & SERVICES	107	0	99	2	92.52
Y19	19CS3040P	CRYPT ANALYSIS & CYBER DEFENSE	9	0	9	0	100
Y19	19CS3040R	CRYPT ANALYSIS & CYBER DEFENSE	72	0	65	0	90.28
Y19	19CS3041A	CRYPT ANALYSIS AND CYBER DEFENCE	24	0	19	1	79.17
Y19	19CS3041P	CRYPT ANALYSIS AND CYBER DEFENCE	43	0	43	0	100
Y19	19CS3041S	CRYPT ANALYSIS AND CYBER DEFENCE	243	0	224	1	92.18

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### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Batch	Course Code	Course Title	No of Students Registered	No of Students Detained	No of Students Passed	NA Count	Pass %
Y19	19CS3042P	NETWORK & INFRASTRUCTURE SECURITY	22	0	22	0	100
Y19	19CS3042R	NETWORK & INFRASTRUCTURE SECURITY	155	0	141	1	90.97
Y19	19CS3045P	INTRODUCTION TO BLOCKCHAIN & CRYPTO CURRENCIES	10	0	10	0	100
Y19	19CS3045R	INTRODUCTION TO BLOCKCHAIN & CRYPTO CURRENCIES	125	0	115	1	92
Y19	19CS3051A	DATA VISUALISATION TECHNIQUES	33	0	33	0	100
Y19	19CS3051P	DATA VISUALISATION TECHNIQUES	46	0	46	0	100
Y19	19CS3051S	DATA VISUALISATION TECHNIQUES	367	0	354	1	96.46
Y19	19CS3052P	DATA WAREHOUSING & MINING	63	0	63	0	100
Y19	19CS3052R	DATA WAREHOUSING & MINING	458	0	448	0	97.82
Y19	19CS3056A	FUNCTIONAL & CONCURRENT PROGRAMMING	5	0	4	0	80

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Batch	Course Code	Course Title	No of Students Registered	No of Students Detained	No of Students Passed	NA Count	Pass %
Y19	19CS3056P	FUNCTIONAL & CONCURRENT PROGRAMMING	44	0	42	0	95.45
Y19	19CS3056S	FUNCTIONAL & CONCURRENT PROGRAMMING	25	0	21	0	84
Y19	19CS3056S	FUNCTIONAL & CONCURRENT PROGRAMMING	31	0	27	0	87.1
Y19	19CS3060P	CONTINUOUS DELIVERY & DEVOPS	20	0	19	0	95
Y19	19CS3060R	CONTINUOUS DELIVERY & DEVOPS	350	0	326	4	93.14
Y19	19CS3062A	SOFTWARE VERIFICATION & VALIDATION	10	0	9	0	90
Y19	19CS3062P	SOFTWARE VERIFICATION & VALIDATION	4	0	4	0	100
Y19	19CS3062S	SOFTWARE VERIFICATION & VALIDATION	109	0	93	5	85.32
Y19	19CS3063P	UX DESIGN	11	0	11	0	100
Y19	19CS3063R	UX DESIGN	73	0	71	0	97.26
Y19	19CS3064P	UX DESIGN	10	0	9	0	90
Y19	19CS3064R	UX DESIGN	69	0	63	1	91.3
Y19	19CS3064R	UX DESIGN	168	0	159	1	94.64
Y19	19CS3065A	DESIGN PATTERNS & CLEAN CODING TECHNIQUES	4	0	4	0	100

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Batch	Course Code	Course Title	No of Students Registered	No of Students Detained	No of Students Passed	NA Count	Pass %
Y19	19CS3065P	DESIGN PATTERNS & CLEAN CODING TECHNIQUES	5	0	5	0	100
Y19	19CS3065S	DESIGN PATTERNS & CLEAN CODING TECHNIQUES	40	0	38	1	95
Y19	19CS3071A	PROGRAMMING FOR GAME DEVELOPMENT	3	0	3	0	100
Y19	19CS3071P	PROGRAMMING FOR GAME DEVELOPMENT	4	0	3	0	75
Y19	19CS3071S	PROGRAMMING FOR GAME DEVELOPMENT	66	0	58	0	87.88
Y19	19CS3113A	ANALYSIS & DESIGN OF ALGORITHMS	60	0	58	0	96.67
Y19	19CS3113P	ANALYSIS & DESIGN OF ALGORITHMS	30	0	30	0	100
Y19	19CS3113S	ANALYSIS & DESIGN OF ALGORITHMS	1659	0	1572	10	94.76
Y19	19CS3116P	SIGNAL PROCESSING	20	0	19	0	95
Y19	19CS3116R	SIGNAL PROCESSING	93	0	91	1	97.85
Y19	19CS3117A	IOT SENSING AND ACTUATING DEVICES	3	0	3	0	100

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Y19	19CS3117P	IOT SENSING AND ACTUATING DEVICES	1	0	1	0	100
Y19	19CS3117S	IOT SENSING AND ACTUATING DEVICES	42	0	39	0	92.86
Y19	19CS3118R	INTERNET OF THINGS: ARCHITECTURE S AND PROTOCOLS	47	0	41	0	87.23
Y19	19CS3214P	AUTOMATA THEORY & COMPILER DESIGN	21	0	21	0	100
Y19	19CS3214R	AUTOMATA THEORY & COMPILER DESIGN	166	0	151	5	90.96
Y19	19TS3101P	TECHNICAL SKILLING (SDP-3)	26	0	26	0	100
Y19	19TS3101S	TECHNICAL SKILLING (SDP-3)	1723	0	1664	0	96.58
Y19	19UC3105	APTITUDE BUILDER-2	1750	0	1715	0	98
Y20	18CY1005	Chemistry for Engineers	97	0	96	0	98.97
Y20	18FL3064M	Japanese Language	75	0	0	0	0

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Batch	Course Code	Course Title	No of Students Registered	No of Students Detained	No of Students Passed	NA Count	Pass %
Y20	180E4002M	PHOTOGRAPHY BASICS	371	0	347	0	93.53
Y20	18PH4101	Quantum Physics for Engineers	495	0	477	4	96.36
Y20	18UC0009M	ECOLOGY & ENVIRONMENT	129	0	124	0	96.12
Y20	20CS2103A	Operating System Design	453	0	417	0	92.05
Y20	20CS2103P	Operating System Design	12	0	12	0	100
Y20	20CS2103S	Operating System Design	1188	0	1087	0	91.5
Y20	20CS2104A	Database Management Systems	484	0	470	2	97.11
Y20	20CS2104P	Database Management Systems	12	0	12	0	100
Y20	20CS2104S	Database Management Systems	1149	0	1058	0	92.08
Y20	20CS2105A	Mathematical Programming - 1	382	0	355	0	92.93
Y20	20CS2105P	Mathematical Programming - 1	12	0	12	0	100
Y20	20CS2105R	MATHEMATICAL PROGRAMMING - 1	1263	0	1194	12	94.54
Y20	20CS2205A	Elements of Software Construction	278	0	263	0	94.6

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Batch	Course Code	Course Title	No of Students Registered	No of Students Detained	No of Students Passed	NA Count	Pass %
Y20	20CS2205P	Elements of Software Construction	11	0	11	0	100
Y20	20CS2205R	Elements of Software Construction	1368	0	1282	9	93.71
Y20	20IE2050	Social Internship	1620	0	1620	0	100
Y20	20TS2101P	Technical Skilling (SDP-1)	10	0	10	0	100
Y20	20TS2101S	Technical Skilling (SDP-1)	1609	0	1575	0	97.89
Y20	20UC1203	Design thinking and Innovation – II	1529	0	1481	0	96.86
Y20	20UC2103	Professional Communication Skills	1619	0	1431	0	88.39

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### Y20 batch 2021-22 Even Semester Course Wise Result Analytics

Course Code	Course Name	Registered Count	Failed Count	Detain Count	Overall Pass	Pass Percent
20CS2210PA	MATHEMATICAL PROGRAMMING-2	14	0	0	14	100
20CS2210RA	MATHEMATICAL PROGRAMMING-2	1047	8	5	1034	98.76
20CS2220AA	DESIGN & ANALYSIS OF ALGORITHMS	234	0	3	231	98.72
20CS2220PA	DESIGN & ANALYSIS OF ALGORITHMS	32	32	0	0	0
20CS2220RA	DESIGN & ANALYSIS OF ALGORITHMS	803	6	11	786	97.88
20CS2221AA	AI FOR DATA SCIENCE	1034	9	4	1021	98.74
20CS2221PA	AI FOR DATA SCIENCE	35	0	0	35	100
20CS2222AA	COMPUTER NETWORKS & SECURITY	673	11	6	656	97.47
20CS2222PA	COMPUTER NETWORKS & SECURITY	25	0	0	25	100
20CS2222RA	COMPUTER NETWORKS & SECURITY	371	3	6	362	97.57
200E4004M	SELF DRIVING CARS	87	1	2	84	96.55
200E4010M	DIGITAL MARKETING	4	0	0	4	100
20TS2290AA	TECHNICAL SKILLS 2	1035	12	10	1013	97.87
20TS2290PA	TECHNICAL SKILLS	34	0	0	34	100
20UC2204	CORPORATE COMMUNICATION SKILLS	1656	32	22	1602	96.7

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### Annexure - 8: National Educational Policy Implementation

The entry and exit options for students, who enter the undergraduate program, are as follows:

#### I Year

- **Entry1:** The entry requirement for Level 5 is Secondary School Leaving Certificate obtained after the successful completion of Grade 12. A program of study leading to entry into the first year of the bachelor's degree is open to those who have met the entrance requirements, including specified levels of attainment at the secondary level of education specified in the program admission regulations. Admission to the bachelor's degree program of study is based on the evaluation of documentary evidence (including the academic record) of the applicant's ability to undertake and complete a bachelor's degree program.
- **Exit1:** A certificate will be awarded when a student exits at the end of year1 (Level5). The first year of the undergraduate program builds on this secondary education and requires 36-40 credits during the first year of the undergraduate program for qualifying for an undergraduate certificate.

#### II Year

- **Entry2.** The entry requirement for Level6 is a certificate obtained after completing the first year (two semesters) of the undergraduate program. A program of study leading to these second year of the bachelor's degree is open to those who have met the entrance requirements, including specified levels of attainment, in the program admission regulations. Admission to a program of study is based on the evaluation of documentary evidence (including the academic record) of the applicant's ability to undertake and complete a bachelor's degree program.
- **Exit 2:** At the end of the 2nd year, if a student exits, a diploma shall be awarded (Level 6). A diploma requires 72-80 credits from levels 5 to 6, with 36-40 credits at level 6.

#### III Year

- **Entry3.** The entry requirement for Level 7 is a diploma obtained after completing two years (four semesters) of the undergraduate program. A program of study leading to the bachelor's degree is open to those who have met the entrance requirements, including specified levels of attainment, in the program admission regulations. Admission to a program of study is

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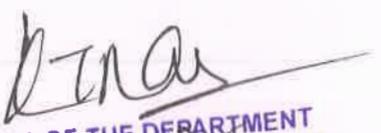
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based on the evaluation of documentary evidence (including the academic record) of the applicant's ability to undertake and complete a bachelor's degree program.

- Exit 3: On successful completion of three years, there levant degree shall be awarded (Level7). A bachelor's degree requires 108-120 credits from levels 5 to 7, with 36-40 credits at level5, 36-40 credits at level6, and 36-40 credits at level7.

#### IV Year

- Entry4. An individual seeking admission to a bachelor's degree (Honors/Research) (Level8) in a specified field of learning would normally have completed all requirements of three - year bachelor's degree (Level7). After completing the requirements of a three-year bachelor's degree, candidates who meet a minimum CGPA of 7.5 shall be allowed to continue studies in the fourth year of the undergraduate program to pursue and complete the bachelor's degree with Research.
- Exit 4: On the successful completion of the fourth year, a student shall be awarded a degree (Honors/Research). A bachelor's degree (Honors/Research) requires a total of 144-160 credits from levels 5to8, with 36-40 credits at level5, 36-40 credits at level6, and 36-40 credits at level7, and 36-40 credits at level 8.

  
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### Annexure 9: Work in Lieu Committee Recommendation

Based on the work in lieu committee recommendations, Ms V Lavanya (13003015) has been given work equivalence for the following subjects:

**13CS402 Simulation and Modelling**

**13MP401 Mini Project**

### SIMULATION AND MODELING (13CS402) - WORK EQUIVALENCE REPORT

This is to adhere that the student bearing id number 13003015, a student of CSE department has continued her work at 7Seas Entertainment Ltd, Hyderabad as a Unity Game Developer in the Gaming domain. Her complete work in the duration is observed as Equivalence to our KL university framed syllabi. The said student has covered the course syllabi with course id: **13CS402** with title **Simulation and Modelling**.

She has entitled covering the contents of all Course outcomes during her project activity. She has hands on handling multiple projects based on simulation and Modeling. Her keen interest in identifying the course syllabi helped her innovating and producing more attractive successful projects.

The student has aptly used discrete event simulation principles and various mathematical models to bring out her projects successful. She has immensely used available statistical and queuing models to evaluate the results. On the other ways of her implementation, it is clearly observed that the course curriculum of KL-CSE is matching her work. The result analysis is made of analyzing available input modelling techniques, verification and validation approaches. She built the complete application using **UNITY Game Engine** software as a tool to complete the product.

### MINI PROJECT-(13MP401) - WORK EQUIVALENCE REPORT

**Lavanya Vallabhapurapu** with student id: **13003015** has successfully carried out her Mini Project "TILT IT" by her own initiatives and perspectives which is duly available from Google Play store. During her work, she has collected various requirements, created

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user stories, generated use cases and all other useful stuff for her project activity.

Her keen interest enabled her to implement the code with proper planning using **UNITY - 3D Game Engine** tool using the **IDE - Visual Studio**. She has developed a 2D Hyper Casual Game in which the player is moved using the mobile in build Gyroscope. She used the concepts from Vector Physics to implement the code and simulation approaches.

Her credentials are proven and can be found at Google play store at [https://play.google.com/store/apps/details?id=com.la1ya.tiltit&hl=en\\_US&gl=US](https://play.google.com/store/apps/details?id=com.la1ya.tiltit&hl=en_US&gl=US).

She has conducted verification and validation testing on the said application.

#### Committee Members:

1. Dr. Pragnyaban Mishra
2. Dr K V D Kiran
3. Dr B Vijay Kumar
4. Dr G Siva Nageswara Rao
5. Dr M Kavitha

*KVDR*  
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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### Annexure-10:

**Minor degree programs offered by CSE for 2022-23 admitted batch students.**

#### MINOR DEGREE in Computer Science

S. No	Course Code	Course Title	TYPE	MODE	L	T	P	S	Cr	CH
1	22CS1117	Problem Solving Skills through Computer Programming	PC	A	2	0	4	4	5	10
2	22CS2218	Advanced Problem-Solving Skills through Programming	PC	A	2	0	4	4	5	10
3	22SC1203	Computational Thinking for Object Oriented Design	PC	A	2	0	4	4	5	10
4	22CS2214	Design & Analysis of Algorithms	PC	A	2	0	4	4	5	10

#### MINOR DEGREE in Computer Engineering

S. No	Course Code	Course Title	TYPE	MODE	L	T	P	S	Cr	CH
1	22CS2210	Database Management Systems	PC	A	3	0	4	0	5	7
2	22CS1119	Introduction to Operating Systems	PC	R	2	0	2	0	3	7
3	22CS2212	Computer Networks & Security	PC	A	3	2	2	0	6	7
4	22CS2211	Software Engineering	PC	A	3	2	2	0	6	7

#### MINOR DEGREE in Web Engineering

S. No	Course Code	Course Title	TYPE	MODE	L	T	P	S	Cr	CH
1	22CS1117	Problem Solving Skills through Computer Programming	PC	R	2	0	2	4	4	8
2	22CS2218	Advanced Problem-Solving Skills through Programming	PC	R	2	0	2	4	4	8
3	22SC1203	Computational Thinking for Object Oriented Design	PC	R	2	0	2	4	4	8
4	22CS2208	Enterprise Programming	PC	R	2	0	2	4	4	8
5	22TS3204	WEB ARCHITECTING ON CLOUD FOR DEVELOPERS	PC	R	2	0	2	4	4	8

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### **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

#### **Annexure - 11:**

#### **Discussion on Honors Degree with Specialization**

Al the members in the Board of Studies agreed to recommend the below attached degrees to be offered to students who take up 20 additional credits from courses that are part of Professional Core, Professional Electives, skill development and Project with a minimum of 8.5 CGPA and no backlogs in any semester.

B.Tech. (Hons) CSE with specialization in Artificial Intelligence & Intelligent Process Automation

B.Tech. (Hons) CSE with specialization in Data Science & Big Data Analytics

B.Tech. (Hons) CSE with specialization in Cloud & Edge Computing

B.Tech. (Hons) CSE with specialization in Cyber Security & Block Chain Technology

B.Tech. (Hons) CSE with specialization in Software Modelling & DevOps

B.Tech. (Hons) CSE with specialization in Game Development & UX Design

B.Tech. (Hons) CSE with specialization in Cyber Physical Systems & Internet of Things

#### **List of courses offering under Advance or Peer Mentor mode**

S. No	Course Code	Course Title	TYPE	MODE	L	T	P	S	Cr	CH
1	22CS2108	Enterprise Programming	PC	A/P	3	0	4	4	6	11
2	22CS2109	Operating Systems	PC	A/P	3	0	4	0	5	7
3	22CS2110	Database Management Systems	PC	A/P	3	0	4	0	5	7
4	22CS2212	Computer Networks & Security	PC	A/P	3	2	2	0	6	7
5	22CS2213	AI for Data Science	PC	A/P	3	0	4	0	5	7
6	22CS2111	Software Engineering	PC	A/P	3	2	2	0	6	7
7	22CS2214	Design & Analysis of Algorithms	PC	A/P	3	0	4	4	6	11

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### List of courses offering under Advance or Peer Mentor mode

S. No	Course Code	Course Title	TYPE	MODE	L	T	P	S	Cr	CH
8	22CS4115	Parallel & Distributed Computing	PC	A/P	3	2	2	0	6	7
9	22CS2215	Automata Theory & Formal Languages	PC	A/P	3	2	2	0	6	7
10	FC-1	Flexi Core Course - 1	FC	P	3	0	4	0	5	7
11	FC-2	Flexi Core Course - 2	FC	P	3	0	4	0	5	7
12	PE-1	Professional Elective - 1	PE	A/P	3	0	4	4	6	11
13	PE-2	Professional Elective - 2	PE	P	3	0	4	0	5	7
14	PE-3	Professional Elective - 3	PE	A/P	3	0	4	4	6	11
15	PE-4	Professional Elective - 4	PE	P	3	0	4	0	5	7
16	PE-5	Professional Elective - 5	PE	P	3	0	4	0	5	7
17	22TS2101	Technical Skilling - 1 (MERN STACK DEVELOPMENT)	SDC	A/P	0	1	4	4	4	9
18	22TS2202	Technical Skilling - 2 (JAVA FULL STACK WITH MICROSERVICES)	SDC	A/P	0	1	4	4	4	9
19	22TS3103	Technical Skilling - 3 (PYTHON & DJANGO FULL STACK)	SDC	A/P	0	1	4	4	4	9
20	22TS3204	Technical Skilling - 4 (WEB ARCHITECTING ON CLOUD FOR DEVELOPERS)	SDC	A/P	0	2	4	4	5	10
21	22IE3042	RESEARCH SEMINAR	PJ	A	0	0	4	0	2	4

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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### Annexure 12 (a):

#### Proposal of SAC activities

#### SAC activities Proposed for AY 2022-23

S. No	Activity	Outcome
1	Project Expo	To Provides opportunity for the students to demonstrate their learning experience
2	Project Based Learning	To Improve problem solving
3	Skill Based Learning	To Develop Acquisition or learning of skills
4	Hackathon (SDP-I / SDP-II)	To Develop new prototypes and volume of ideas
5	Workshops	To Provide training to participants to improve the skills
6	Conferences	To Share new ideas and development experiences in various fields
7	National Technical Fest (#include)	To Develop various skills
8	Gender Sensitization	To Understand the consequences of different behavior for girl/women, boys/men.
9	Social Internship	To Improve skills in communication, teamwork and problem-solving
10	NSS & Sports	To Acquire leadership qualities and democratic attitude

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### Annexure 12 (b): Proposal of Courses relating AICTE-SLA 'Parakh' Program

AICTE-SLA 'Parakh' Courses proposed for Y22 Admitted Batch					
S. No	COURSE NAME	PLAT FORM	FOCUS ON	CATEGORY	IMPLEMENTATION
1	Internet Of Things	AICTE SLA	Emerging Technology	Employability	1. Acquires Logins from Skill development division 2. Sensitize the students on platform 3. set the benchmarks on applicable courses
2	Data Warehousing and Mining	AICTE SLA	Emerging Technology	Employability	
3	Cryptography And Network Security	AICTE SLA	Emerging Technology	Employability	
4	Natural Language Processing	AICTE SLA	Emerging Technology	Employability	
5	Automate Theory and Formal Languages	AICTE SLA	Core concepts	Employability	
6	Design and analysis of algorithms	AICTE SLA	Core concepts	Employability	
7	Machine Learning	AICTE SLA	Emerging Technology	Employability	
8	Compiler Design	AICTE SLA	Emerging Technology	Employability	
9	Software Engineering	AICTE SLA	Core concepts	Employability	
10	Operating System	AICTE SLA	Core concepts	Employability	
11	Computer Organization and Architecture	AICTE SLA	Core concepts	Employability	
12	Data base Management systems	AICTE SLA	Core concepts	Employability	

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