

# **ADD-ON Program**

**2021-22**

**ADD on Program**  
**On**  
**“LaTeX Editing Tool”**





|| Jai Sri Gurudev ||



SRI ADICHUNCHANAGIRI SHIKSHANA TRUST ®  
ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
P.B No.91, Adichunchanagiri Extension, Chikkamagaluru-577 102, Karnataka, India.

Ref: AIT/IQAC/CSE/ /2021-22

Date:31/05/2022

Circular

Department of Computer Science & Engineering is conducting a Certificate Program (Add-on Program) on "LaTeX Editing Tool [21CS-SLET\_01]" from 21-06-2022 to 09-07-2022. All other HOD's instruct the concern department students to attend the program. Following faculty member (Course instructor) is conducting a certificate program at CS&E Department.

Course Instructor

1. Dr. Sunitha M R

Professor

Dept. of CS&E

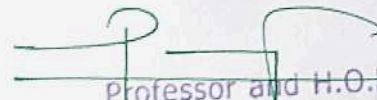
AIT Chikmagalur

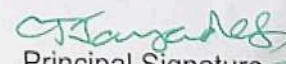
2. Prof. S J Prashantha

Assistant Professor

Dept. of CS&E

AIT Chikmagalur

  
Professor and H.O.D.  
HOD's Signature  
Department of Computer Science and Engg  
Adichunchanagiri Institute of Technology  
CHIKMAGALUR - 577102

  
Principal Signature  
Upd  
B.E.,M.Tech.,Ph.D  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALURU-577102





**ADD-ON Course**  
On  
**“LaTeX Editing Tool”**



Organized by,  
Department of Computer Science  
and Engineering,  
Adichunchanagiri Institute of  
Technology,  
Chikmagalur – 577102  
Karnataka, India  
[www.aitechmagalur.ac.in](http://www.aitechmagalur.ac.in)

**About the College:**

Adichunchanagiri Institute of Technology (AIT) was established in the year 1980 under the auspicious of Adichunchanagiri Shikshana Trust(R) with the blessings of Bhairavaikya Jagadguru Padmabhusana Sri Sri Sri Dr. Balagangadharanatha Mahaswamiji to provide technical and other professional education in the rural area of Chikmagalur, the land of Coffee. With the blessings of Jagadguru Sri. Sri. Sri. Nirmalanandanatha Swamiji, AIT is imparting the quality education in Engineering and Management with ethical and spiritual values. The engineering departments have

recognized as research centers under VTU. The college has well equipped laboratory facilities and highly qualified and experienced faculty. The Institute is providing good training for students to excel in academics as well as in industry requirements and aims towards 100% placements to give a better future for students.

**About the Department:**

The Department of Computer Science and Engineering is established in the year 1986. It was earlier affiliated to the Mysore University later to the Kuvempu University and at present, it is affiliated to Visvesvaraya Technological University, Belagavi. The alumni of the department are working in various reputed organizations in India and abroad. The department is accredited twice by National Broad of Accreditation, New Delhi.

The department offers UG, PG Courses with an intake of 120 and 18 respectively and facilitates R&D through VTU recognized research center. The department has received funds from various reputed agencies like AICTE, VGST, KSCST, ISRO, ISTE, etc., for its activities.

**Objectives of the Course:**

LaTeX, a document preparation system, is widely used for publishing in many scientific fields like mathematics, statistics, computer science, engineering, chemistry, physics, economics, linguistics, etc.. It is a powerful and open-source system that provides numerous facilities for automating typesetting of the document: i.e. structuring page layout, listing and auto-numbering of sections, tables, figures, generating a table of contents, managing cross-referencing, citing, and indexing.

Unlike other WYSIWYG editors, the content is written in plain text along with appropriate commands, thus, allowing the user to concentrate on the content rather than the aesthetics (the way it looks). The TeX typesetting program which LaTeX uses, was

designed such that anyone can create good quality material with less efforts.

This course introduces the basic concepts of LaTeX. Participants taking this course will be able to create and design documents in LaTeX and presentations in Beamer with confidence.

**Resource Person:**

Dr. Sunitha M R  
Professor  
Dept of CS&E, AIT, Chikmagalur

**Convenor:**

Dr Pushpa Ravi Kumar,  
Professor and Head,  
Dept. of CS&E, AIT, Chikmagalur

**Coordinator:**

Mr. S J Prashantha  
Asst Professor,  
Dept. of CS&E, AIT, Chikmagalur

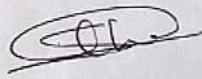


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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING  
ADD-ON Course – LaTeX Editing Tool

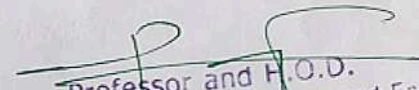
Student Enrollment List

SI NO	NAME	USN	Signature
1	AAISHA SUHA	4AI20CS001	Aisha
2	ABHIJNA C D	4AI20CS003	Abhijna
3	AISHWARYA A S	4AI20CS005	Aishwarya
4	AISIRI H T	4AI20CS006	Aisiri
5	AMITH SHETTY A R	4AI20CS007	Amith Shetty
6	AMULYA J	4AI20CS008	Amulya J
7	ANANYA C M	4AI20CS009	Ananya C M
8	ANIL KUMAR R PATIL	4AI20CS010	Anil Kumar
9	ANJANI S SINGH	4AI20CS011	Anjali Singh
10	ANVIKA B N	4AI20CS012	Anvika
11	ARUN BELAVADI	4AI20CS013	Arun
12	ARYA K S	4AI20CS014	Arya
13	BHAGYA Y	4AI20CS015	Bhagya
14	BHAKTHI SAMPADA J S	4AI20CS016	Bhakti
15	BHOOMIKA C V	4AI20CS017	Bhoomika C.V
16	BHOOMIKA G V	4AI20CS018	Bhoomika G.V
17	BHOOMIKA M	4AI20CS019	Bhoomika M
18	BHOOMIKA P.H	4AI20CS020	Bhoomika P.H
19	BHUMIKA L	4AI20CS021	Bhumi
20	CHANDRASHEKHARA M	4AI20CS022	Chandrashekhara
21	CHETHAN K S	4AI20CS023	Chethan
22	CHINTHAN H K	4AI20CS024	Chintan
23	CHIRANTH K G	4AI20CS025	Chiranth K.G
24	DAIVIK M D	4AI20CS026	Daivik M.D
25	DEEKSHA C T	4AI20CS027	Deeksha C.T
26	DEEKSHITH K	4AI20CS028	Deekshith
27	DHANYA H M	4AI20CS029	Dhanya
28	DIVYA SHREE M N	4AI20CS030	Divya
29	ESHANYA C Y	4AI20CS031	Esha
30	FARDEEN KHAN	4AI20CS032	Fardeen Khan
31	RAKESH G	4AI20CS033	Rakesh G
32	GAGANA K R	4AI20CS034	Gagana K.R
33	HARSHITH M O	4AI20CS035	Harshith M.O
34	HARSHITH M PATEL	4AI20CS036	Harshith M.Patel
35	PRANCHANA H.S	4AI20CS068	Pranchana
36	PRATHEEK H.N	4AI20CS069	Pratheek
37	PREETHAM GOWDA C.B	4AI20CS070	Preetham Gowda
38	RAKSHITA	4AI20CS073	Rakshita
39	RANJAN GOWDA T N	4AI20CS077	Ranjan Gowda
40	RATAN AKKI	4AI20CS078	Ratan Akki
41	RENUKA N	4AI20CS079	Renuka
42	ROOPESH B Y	4AI20CS080	Roopesh
43	SANATH D U	4AI20CS087	Sanath

44	SANATH R	4AI20CS088	Sanath R
45	SANJANA S	4AI20CS089	Sanjana S
46	SANVI H R	4AI20CS090	Sanvi HR
47	SUHAS Y C	4AI20CS108	Suhas
48	SUJAY G	4AI20CS109	Sujay
49	SUJITH D	4AI20CS110	Sujith
50	SUMEDH M ANVEKAR	4AI20CS111	Sumedh
51	SWATHI K M	4AI20CS112	Swathi
52	SYED AMAN	4AI20CS113	Syed Aman
53	TANUSHREE D	4AI20CS114	Tanushree
54	UDAY RAO C G	4AI20CS115	Uday Rao
55	VAMSHIKA M J	4AI20CS116	Vamshika
56	VARSHA B C	4AI20CS117	Varsha
57	VARSHA V	4AI20CS118	Varsha
58	VARSHINI G	4AI20CS119	Varshini
59	VIDYA N G	4AI20CS120	Vidya NG
60	VIJAYALAKSHMI G S	4AI20CS121	Vijayalakshmi
61	VINAY KUMAR B S	4AI20CS122	Vinay



Course Instructor Signature



Professor and H.O.D.  
HOD Signature  
Department of Computer Science and Engg  
Adichunchanagiri Institute of Techno  
CHIKMAGALUR - 577102



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Add on course for 4<sup>th</sup> sem BE, CSE – 30 Hours

ADD on Course Name: LaTeX Editing Tool

Course Code: 21CS-SLET\_01



**Module 1: Overleaf guides**

**10 Hours**

Creating a document in Overleaf, Uploading a project, Copying a project, Creating a project from a template Using the Overleaf project menu, Including images in Overleaf, Exporting your work from Overleaf, Working offline in Overleaf, Debugging Compilation timeout errors.

**Module 2: LaTeX Basics**

**10 Hours**

Creating your first LaTeX document, Choosing a LaTeX Compiler, Paragraphs and new lines, Bold, italics and underlining, Lists, Errors, Figures and tables: Inserting Images, Tables, Positioning Images and Tables, Lists of Tables and Figures.

**Module 3: Mathematics**

**10 Hours**

Mathematical expressions, Subscripts and superscripts, Brackets and Parentheses, Matrices, Fractions and Binomials, Aligning equations, Operators, Spacing in math mode, limits, Display, List of Greek letters and math symbols, Mathematical fonts, Using the Symbol Palette in Overleaf.

**Text Books:**

1. Guide to LATEX - UC Davis Mathematics, by H Kopka · 2004

**References:**

1. LATEX in 24 Hours, a practical guide for scientific writing by Dilip Datta















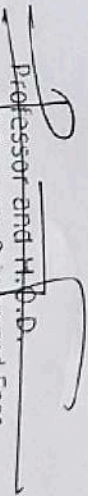
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 CHIKKAMAGALURU - 577 102  
 DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Certificate of Participation

This is to certify that **RENUKA N** has successfully completed the add on course on **"LaTeX Editing Tool"** from **21-06-2022** to **09-07-2022** organized by Department of Computer Science and Engineering.

  
 Prof. S J Prashantha  
 Staff co-ordinator

  
 Dr. Sunitha M R  
 Staff co-ordinator

  
 Professor and H.O.D.  
 Department of Computer Science and Engg.  
 Adichunchanagiri Institute of Technology  
 CHIKKAMAGALURU - 577102





Sri Adichunchanagiri Shikshana Trust (R)  
**ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY**  
 CHIKKAMAGALURU - 577 102  
**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**



*Certificate of Participation*

*This is to certify that BHAGYA Y has successfully completed the add on course on "LaTeX Editing Tool" from 21-06-2022 to 09-07-2022 organized by Department of Computer Science and Engineering.*

Prof. S J Prashantha  
 Staff co-ordinator

Dr. Sunitha M R  
 Staff co-ordinator

Professor and H.O.D.  
 Dr. Pushpan Ravikumar and Engg.  
 Department of Computer Science and Engg.  
 Adichunchanagiri Institute of Technology  
 CHIKKAMAGALUR - 577102

**ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY,  
CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

ADD on Course Name: LaTeX Editing Tool


Course Code : 21CS-SLET\_01

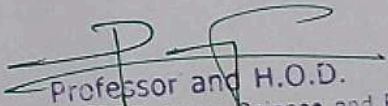
Semester: 4

Branch: CSE

**TOPPERS LIST**

SI NO	NAME	USN	Marks Obtained
1	AAISHA SUHA	4AI20CS001	47
2	VIJAYALAKSHMI G S	4AI20CS121	45
3	DAIVIK M D	4AI20CS026	43

  
Course Instructor Signature

  
Professor and H.O.D.  
Department of Computer Science and En  
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ADICHUCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

ADD ON COURSE: LaTeX Editing Tool

SEMESTER : IV

Max Marks: 50

Student Name : Harevith M. Patel

Student USN : 4AT20CS036

Note: There are 50 multiple choice questions. All questions are compulsory. Each question carries equal marks. 50\*1=50

1. Question: To use \_\_\_\_\_ there is a requirement of LaTeX distribution (software).  
a) TeX  
b)  SciTE  
c) LaTeX  
d) Ubuntu
2. Question: Most LaTeX distribution software includes \_\_\_\_\_ and some additional software in them.  
a)  TeX  
b) SciTE  
c) LaTeX  
d) Ubuntu
3. Question: TeX Live is a very popular LaTeX distribution software which is available in the standard \_\_\_\_\_ repositories.  
a) TeX  
b) SciTE  
c)  LaTeX  
d) Ubuntu
4. Question: While using LaTeX, there is also a need for plain \_\_\_\_\_ editor and software to view the output file.  
a) Text  
b) Transcript  
c) Script  
d)  Word
5. Question: LaTeX documents are typically created using any plain \_\_\_\_\_ editor.  
a) Text  
b)  Transcript  
c) Script  
d) Word
6. Question: \_\_\_\_\_ are examples of plain text editors.  
a)  Gedit  
b) SciTE  
c) Both (A) and (B)  
d) None of these
7. Question: The different parts of the text are marked using \_\_\_\_\_ commands that associate a meaning to them.  
a) LaTeX  
b) Simple  
c)  TeX  
d) HTML
8. Question: \_\_\_\_\_ command is used to define the document's title.  
a) \title  
b) \author  
c) \date  
d)  \document
9. Question: \_\_\_\_\_ command is used to specify the author(s) of the document.  
a) \title  
b)  \author  
c) \date  
d) \document
10. Question: \_\_\_\_\_ command is used to indicate the date the document was created.  
a)  \title  
b) \author  
c) \date  
d) \document
11. Question: \_\_\_\_\_ command can be used to explicitly specify the logical structure of the document.  
a) \chapter  
b) \section  
c)  \paragraph  
d) All of these
12. Question: LaTeX comes with \_\_\_\_\_ ways to format these document elements in a pleasant looking professional style.  
a) Integrated  
b) Built-in  
c) Many  
d)  Incorporated

13. Question: The document is compiled (processed) using the LaTeX\_\_\_\_\_ and an output file is produced.
- a) Organization
  - b) Commands
  - c) System
  - d) Document
14. Question: While compilation, LaTeX can also produce some additional\_\_\_\_\_
- a) Records
  - b) Archives
  - c) Files
  - d) Directories
15. Question: The produced additional files can be \_\_\_\_\_ safely without losing any information.
- a) Read
  - b) Deleted
  - c) Saved
  - d) Documented
16. Question: When the output file is viewed using appropriate software or print it on a printer, one can see the \_\_\_\_\_ document.
- a) Unformatted
  - b) Formatted
  - c) In-line
  - d) None of these
17. Question: In the output file, if the looks of the document are not satisfactory, it can be further \_\_\_\_\_ with the help of built-in styles or own styles can be defined.
- a) Adapted
  - b) Formatted
  - c) Modified
  - d) Customized
18. Question: Every time a modification is made in the \_\_\_\_\_ text, there will be a need to compile it again for seeing the effect of the change in the output document.
- a) Source
  - b) Basic
  - c) Beginning
  - d) Main
19. Question: Both TeX and LaTeX use the file extension \_\_\_\_\_
- a) .text
  - b) .tex
  - c) .ttx
  - d) .latex
20. Question: LaTeX has a command called \_\_\_\_\_ that produces the popular PDF format files.
- a) PDFtex
  - b) pdflatex
  - c) PDF
  - d) Latexpdf
21. Question: Full form of PDF is \_\_\_\_\_
- a) Perfect Document Format
  - b) Portable Double Format
  - c) Portable Document Format
  - d) Perfect Deed Format
22. Question: PDF files are very popular for sharing \_\_\_\_\_ documents on the Web.
- a) Productible
  - b) Printable
  - c) Printed
  - d) Scanned
23. Question: PDF documents can be viewed in \_\_\_\_\_ default viewer.
- a) TeX's
  - b) SciTE's
  - c) LaTeX's
  - d) Ubuntu's
24. Question: Ubuntu's document default viewer is \_\_\_\_\_
- a) Evince
  - b) LaTeX
  - c) Evine
  - d) All of these
25. Question: The edit-compile-view cycle has \_\_\_\_\_ steps.
- a) One
  - b) Two
  - c) Three
  - d) Four
26. Question: The document can be edited by using any plain editor like \_\_\_\_\_
- a) Gedit
  - b) Word
  - c) Wordpad
  - d) Getit
27. Question: The LaTeX document can be compiled by issuing the command \_\_\_\_\_ at the command prompt.
- a) Pdflatex filename
  - b) PDF filename
  - c) latexpdf filename
  - d) filename pdflatex
28. Question: The generated PDF file can be viewed by opening it from the \_\_\_\_\_
- a) Desktop
  - b) GUI



- c) Adobe  
d) LaTeX
29. Question: The generated PDF file can also be viewed by issuing the command \_\_\_\_\_ pdf filename at the command prompt.  
a) Evince  
b) LaTeX  
c) Evine  
d)  All of these
30. Question: To use SciTE with pdflatex, there is a need to make changes in its \_\_\_\_\_ file.  
a) Document  
b)  PDF  
c) Configuration  
d) LaTeX
31. Question: LaTeX is essentially a \_\_\_\_\_ language.  
a)  Markup  
b) Highlighted  
c) Object oriented  
d) Simple
32. Question: The LaTeX source consists of plain text with some parts of the text marked up using markers known as \_\_\_\_\_.  
a) Instructions  
b)  Commands  
c) Guidelines  
d) Directions
33. Question: In LaTeX, some \_\_\_\_\_ are independent commands - they do not mark any specific part of the text.  
a) Instructions  
b) Commands  
c)  Guidelines  
d) Directions
34. Question: The LaTeX commands can perform a variety of tasks when the \_\_\_\_\_ is processed by the LaTeX system.  
a)  Organization  
b) File  
c) System  
d) Document
35. Question: The LaTeX commands provide information about the text or the \_\_\_\_\_.  
a)  Organization  
b) File  
c) System  
d) Document
36. Question: The LaTeX commands indicate the role of the marked text in the overall structure of the \_\_\_\_\_.  
a)  Organization  
b) File  
c)  System  
d) Document
37. Question: The LaTeX commands directly specify \_\_\_\_\_.  
a) Formatting  
b) Information  
c) Data  
d)  File name
38. Question: The LaTeX command name can be a \_\_\_\_\_ of alphabetic letters only, or it can be a single non-letter.  
a)  String  
b) Sequence  
c) Series  
d) Chain
39. Question: LaTeX commands are \_\_\_\_\_ sensitive.  
a)  Event  
b) Case  
c) Instance  
d) Example
40. Question: Some commands accept additional information which is called \_\_\_\_\_.  
a) Examples  
b) Data info  
c)  Arguments  
d) Instances
41. Question: There are two types of \_\_\_\_\_ optional and compulsory.  
a) Examples  
b) Data Info  
c) Arguments  
d)  Instances
42. Question: \_\_\_\_\_ arguments are not mandatory.  
a) Optional  
b)  Compulsory  
c) Instance  
d) Event
43. Question: If one or more optional arguments are to be provided, they have to be written after the command name, enclosed in \_\_\_\_\_.  
a)  [] (square brackets)  
b) "" (quotes)  
c) <> (angular brackets)  
d) {} (curly braces)
44. Question: More than one optional argument has to be separated by \_\_\_\_\_.  
a)  (: colon)

- b) (,) comma
- c) (;) semi colon
- d) (^) caret

45. Question: Mandatory arguments (if there are any) have to be enclosed in in \_\_\_\_\_

- a) [ ] (square brackets)
- b) "" (quotes)
- c) <math>\langle \rangle</math> (angular brackets)
- d) { } (curly braces)

46. Question: 12pt is an \_\_\_\_\_ argument.

- a) Name
- b) Optional
- c) Compulsory
- d) All of these

47. Question: Article is a \_\_\_\_\_ argument.

- a) Name
- b) Optional
- c) Compulsory
- d) All of these

48. Question: LaTeX treats all \_\_\_\_\_ characters (the space, tab and newline characters) as the same.

- a) Special
- b) Space
- c) Line
- d) Whitespace

49. Question: LaTeX converts all occurrences of multiple consecutive \_\_\_\_\_ into a single space character.

- a) Special
- b) Space
- c) Line
- d) Whitespace

50. Question: The \_\_\_\_\_ at the beginning of a line are generally ignored and one or more consecutive blank lines are considered to mark the beginning of a new paragraph.

- a) Special
- b) Space
- c) Line
- d) Whitespace

11  
50.



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY,  
CHIKKAMAGALURU-577102.  
DEPARTMENT OF COPMUTER SCIENCE & ENGINEERING

Add-On Course on "LaTeX Editing Tool"

Add-On Course PARTICIPANTS FEEDBACK

Sl.No	DESCRIPTION	EXCELLENT	GOOD	POOR
1	How would you rate the presenter's knowledge on the concept?	✓		
2	How would you rate the concepts and Information provided by the Presenter?	✓		
3	What was your overall impression of the session?	✓		
4	Remarks	The session was very good		

*Bhoga*

Signature of the Participants

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY CHIKKAMAGALURU

Department of Computer Science & Engineering

## Summary Report

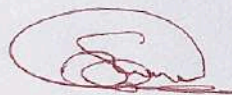
The course "LaTeX Editing Tool" was conducted at CS&E Dept from 21/06/2022 to 09/07/2022.

The main motive is to impart the knowledge and understanding about LaTeX system, explain the procedure of LaTeX typesetting and familiarize the participants with various document formats of LaTeX and enable them to prepare research articles, thesis, books, and presentations with confidence.

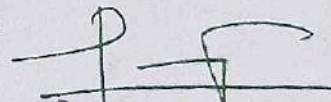
### Course Outcomes

Students will be able to learn:

- Typesetting of complex mathematical formulae using LaTeX.
- Use tabular and array environments within LaTeX.
- Use various methods to either create or import graphics into a LaTeX document.
- Typesetting of journal articles, technical reports, thesis, books, and slide presentations. Automatic generation of table of contents, bibliographies and indexes.



Instructor's Signature



HOD's Signature H.O.D.  
Department of Computer Science and Engg  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALUR - 577102



**ADD-ON PROGRAM**

**ON**

**“DIGITAL IMAGE  
PROCESSING AND  
MACHINE VISION”**



## ADD-ON Course

On

### “Digital Image Processing and Machine Vision”



Organized by,

**Department of Computer Science and Engineering.**

**Adichunchanagiri Institute of Technology,**

**Chikmagalur – 577102**

**Karnataka, India**

**[www.aitechmagalur.ac.in](http://www.aitechmagalur.ac.in)**

#### About the College:

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VTU. The college has well equipped laboratory facilities and highly qualified and experienced faculty. The Institute is providing good training for students to excel in academics as well as in industry requirements and aims towards 100% placements to give a better future for students.

#### About the Department:

The Department of Computer Science and Engineering is established in the year 1986. It was earlier affiliated to the Mysore University later to the Kuvempu University and at present, it is affiliated to Visvesvaraya Technological University, Belagavi. The alumni of the department are working in various reputed organizations in India and abroad.

The department is accredited twice by National Broad of Accreditation, New Delhi. The department offers UG, PG Courses with an intake of 120 and 18 respectively and facilitates R&D through VTU recognized research center. The department has received funds from various reputed agencies like AICTE, VGST, KSCST, ISRO, ISTE, etc., for its activities.

#### Objectives of the Course:

After you have successfully followed the course on image processing and computer vision you will be able to use techniques to process and analyze images. In this course we will introduce the basic notions in image processing and computer vision in such a way that a student will be able to use them for practical purposes and have an understanding of the theoretical (mathematical) basics. Algorithms for image processing and computer vision are often the ‘materialization’ of mathematical formulas. Being able to make a program from a mathematical description using the Python programming language is an important objective of this course

#### Resource Person:

Mr. Darshan L M.

Assistant Professor

Dept of CS&E, AIT, Chikmagalur

#### Convenor:

Dr Pushpa Ravi kumar, Professor and Head, Dept. of CS&E.

#### Coordinator:

1. Mr. Gopalakrishna C, Associate Professor, Dept. CS&E, AIT, Chikmagalur

2. Mr. Chandra Naik G, Assistant Professor, Dept. CS&E, AIT, Chikmagalur





|| Jai Sri Gurudev ||



**SRI ADICHUNCHANAGIRI SHIKSHANA TRUST @  
DICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY  
CHIKKAMAGALURU**

P.B No.91, Adichunchanagiri Extension, Chikkamagaluru-577 102, Karnataka, India.

Ref: AIT/IQAC/CSE/ /2022-23

Date: 16/05/2022

**Circular**

Department of Computer Science & Engineering is conducting a Certificate Program (Add-on Program) on "**Digital Image Processing and Machine vision**" from **25/05/2022** to **10/06/2022**. All other HOD's instruct the concern department students to attend the program. Following faculty member (Course instructor) is conducting a certificate program at CS&E Department.

**Course Coordinators**

1. Mr. Chandra Naik G

Assistant Professor


Dept. of CS&E

2. Mr. Gopalakrishna C

Associate Professor

Dept. of CS&E

AIT Chikmagalur

  
Professor and H.O.D.  
H.O.D.'s Signature  
Department of Computer Science and Engg  
Adichunchanagiri Institute of Technology  
CHIKMAGALUR - 577102

  
Principal Signature  
**Dr. C.T. JAYADEVA**  
Principal B.E.,M.Tech.,Ph.D  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALURU-577102

# DIGITAL IMAGE PROCESSING AND MACHINE VISION

Add on Course

6<sup>th</sup> Sem B.E., CSE

Duration –30 hours

## Syllabus

### MODULE 1

Overview of Applications of Vision and Image Processing, Digital Image Formats, Colour Models, Data Types, Operators., Manipulating Matrices, File I/O, The Image Processing Toolbox (10 Hours)

### MODULE 2

Thresholding, Histogram Equalization, Linear Filtering (convolution) , Noise Reduction, Nonlinear Filtering, Gradients, Edge Magnitude and Direction , Finite Difference Filters , Laplacian of Gaussian Filter, Canny Edge Detector, Colour Transformations, Colour Histogram Equalization Colour Median Filtering., Colour Gradient and Edge Detection (10 Hours)

### MODULE 3

Thresholding as a form of Segmentation, Basic Global Thresholding, Optimal Global Thresholding, Techniques to improve global thresholding, Region Labelling, Boundary Tracing, Boundary-based measures of accuracy, Regionbased measures of accuracy, Measuring Reproducibility. (10 Hours)

#### Text Books/References:

(1)Textbook: Sonka M. Hlavac V. and Doyle R., Image Processing, Analysis, and Machine Vision, PWS Publishing, 1999.

(2) Reference: Bose T., Digital Signal and Image Processing, Wiley, 2004. (3) Forsth D. A. and Ponce J., Computer Vision: A Modern Approach, Prentice Hall, 2003. Reference Books (1) Gonzales R.C. and Woods P., Digital Image Processing, AddisonWesley, 2002. (2) Duda R. O., Hart P. E., and Stork D. G., Pattern Classification, Wiley Inter science, 2001.





ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Add-On Course on

“DIGITAL IMAGE PROCESSING & MACHINE VISION”

STUDENT ENROLLMENT LIST



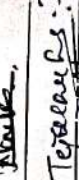



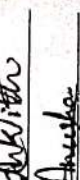
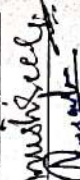
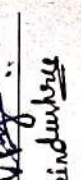
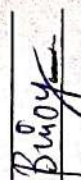
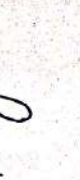


Sl. NO	USN	NAME	SIGNATURE
1	4AI17CS068	PREETHI J	Preethi J
2	4AI18CS019	CHANDAN M	Chandan M
3	4AI18CS042	MANASAY K Y	Manasay K Y
4	4AI18CS117	TEJASWINI J	Tejaswini J
5	4AI18CS122	VINUTHA C	Vinutha C
6	4AI19CS006	AKSHAYA KUMAR	Akshaya K
7	4AI19CS010	AMULYA V R	Amulya V R
8	4AI19CS012	ANANYA S N	Ananya S N
9	4AI19CS013	ANKITH K N	Ankith K N
10	4AI19CS015	ANUSHA BHAT	Anusha Bhat
11	4AI19CS016	ANUSHREE G	Anushree G
12	4AI19CS017	AYISHA SIDDIQA	Ayisha S
13	4AI19CS019	BINDUSHREE C M	Bindushree
14	4AI19CS020	BINOY PRASAD	Binooy Prasad
15	4AI19CS022	CHARVITHA C	Charvitha C
16	4AI19CS023	CHINMAYI S P	Chinmayi S P
17	4AI19CS024	CHITHRA C J	Chithra C J
18	4AI19CS025	CHITHRA P	Chithra P
19	4AI19CS028	DAYANAND M G	Dayanand M G
20	4AI19CS030	DEEPTHI M	Deepthi M
21	4AI19CS031	DEEPU R	Deepu R
22	4AI19CS033	DHANYA SHREE P	Dhanya S P
23	4AI19CS034	DHRUVA BHATTACHARYA	Dhruva B
24	4AI19CS036	DRUSTI S KUMAR	Drusti S K
25	4AI19CS040	GANAVI C T	Ganavi C T
26	4AI19CS041	GOWRISHREE D	Gowrishree D
27	4AI19CS043	HARSHITH C R	Harshith C R



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**CHIKKAMAGALURU-577102**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**ADD-ON Course – Digital Image Processing**  
**Attendance Report**

Note :Session 1-9.30-12.30 Session 2-2.30-5.30

S.NO	USN	Student Name	25/5/2022	26/5/2022	27/5/2022	28/5/2022	30/5/2022	31/5/2022	1/6/2022	2/6/2022	3/6/2022	4/6/2022	Signature
			Day-1	Day-2	Day-3	Day-4	Day-5	Day-6	Day-7	Day-8	Day-9	Day-10	
1	4AI17CS068	PREETHI J	P	P	P	P	P	P	P	P	P	P	
2	4AI18CS019	CHANDAN M	P	P	P	P	P	P	P	P	P	P	
3	4AI18CS042	MANASAY KY	P	P	P	P	P	P	P	P	P	P	
4	4AI18CS117	Tejaswini J	P	P	P	P	P	P	P	P	P	P	
5	4AI18CS122	VINUTHA C	P	P	P	P	P	P	P	P	P	P	
6	4AI19CS006	AKSHAYA KUMAR	P	P	P	P	P	P	P	P	P	P	
7	4AI19CS010	AMULYA V R	P	P	P	P	P	P	P	P	P	P	
8	4AI19CS012	ANANYA S N	P	P	P	P	P	P	P	P	P	P	
9	4AI19CS013	ANKITH K N	P	P	P	P	P	P	P	P	P	P	
10	4AI19CS015	ANUSHA BHAT	P	P	P	P	P	P	P	P	P	P	
11	4AI19CS016	ANUSHREE G	P	P	P	P	P	P	P	P	P	P	
12	4AI19CS017	AYISHA SIDDIQA	P	P	P	P	P	P	P	P	P	P	
13	4AI19CS019	BINDUSHREE C M	P	P	P	P	P	P	P	P	P	P	
14	4AI19CS020	BINOY PRASAD	P	P	P	P	P	P	P	P	P	P	





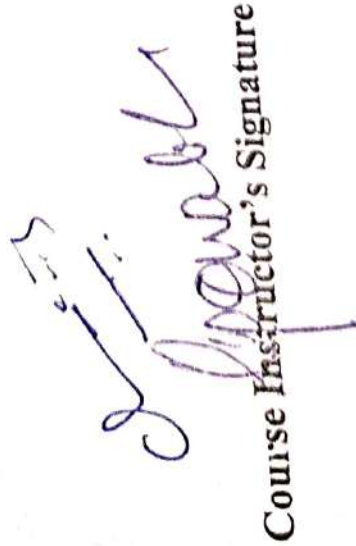
39	4AI19CS066	NISCHITHA M	P	P	P	P	P	P	P	P	P	P	P	P	Nischitha.
40	4AI19CS068	NISHMITHA M GOWDA	P	P	P	P	P	P	P	P	P	P	P	P	Rachitha
41	4AI19CS069	NITHYANJALI H GOWDA	P	P	P	P	P	P	P	P	P	P	P	P	Nalayanjali.H.G.
42	4AI19CS070	PALLAVI P V	P	P	P	P	P	P	P	P	P	P	P	P	P
43	4AI19CS071	PALLAVI S	P	P	P	P	P	P	P	P	P	P	P	P	Pallavi.S
44	4AI19CS076	PRAMODH C A	P	P	P	P	P	P	P	P	P	P	P	P	P
45	4AI19CS083	RACHITHA P K	P	P	P	P	P	P	P	P	P	P	P	P	Rachitha


S.N O	USN	Student Name	6/6/ 2022	7/6/ 2022	8/6/ 2022	9/6/ 2022	10/6/ 2022	Signature
1	4AI17CS068	PREETHI J	Day-11	Day-12	Day-13	Day-14	Day-15	Preethi
2	4AI18CS019	CHANDAN M	P	P	P	P	P	Chandan
3	4AI18CS042	MANASAY K Y	P	P	P	P	P	Mak
4	4AI18CS117	Tejaswini J	P	P	P	P	P	Tejaswini
5	4AI18CS122	VINUTHA C	P	P	P	P	P	Vinutha
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8	4AI19CS012	ANANYA S N	P	P	P	P	P	Ananya
9	4AI19CS013	ANKITH K N	P	P	P	P	P	Ankitha
10	4AI19CS015	ANUSHA BHAT	P	P	P	P	P	Anusha
11	4AI19CS016	ANUSHREE G	P	P	P	P	P	Anushree
12	4AI19CS017	AYISHA SIDDIQA	P	P	P	P	P	Ayisha





38	4AI19CS065	NIHRIKA C L	P	P	P	P	P	P	Nischa
39	4AI19CS066	NISCHITHA M	P	P	P	P	P	P	Nischitha M
40	4AI19CS068	NISHMITHA M GOWDA	P	P	P	P	P	P	Rachitha
41	4AI19CS069	NITHYANJALI H GOWDA	P	P	P	P	P	P	Nithyanjali H Gowda
42	4AI19CS070	PALLAVI P V	P	P	P	P	P	P	Pallavi P V
43	4AI19CS071	PALLAVI S	P	P	P	P	P	P	Pallavi S
44	4AI19CS076	PRAMODH CA	P	P	P	P	P	P	Pramodh
45	4AI19CS083	RACHITHA P K	P	P	P	P	P	P	Rachitha P K

  
 Course Instructor's Signature

  
 Professor and H.O.D.  
 HOD's Signature and Engg  
 Department of  
 Adichunchanagiri Institute of Technology  
 CHIKMAGALUR - 577122



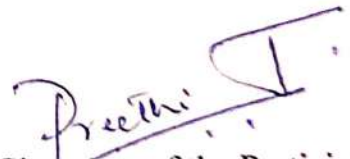
ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY,  
CHIKKAMAGALURU-577102.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Add-On Course on "Digital Image Processing and Machine vision"

Over All Add-On Course PARTICIPANTS FEEDBACK

Sl.No	DESCRIPTION	EXCELLENT	GOOD	POOR
1	How would you rate the presenter's knowledge on the concept?		Good	
2	How would you rate the concepts and Information provided by the Presenter?	Excellent		
3	What was your overall impression of the session?		Good	
4	Remarks	NIL		

  
Signature of the Participants

Sri Adichunchanagiri Shikshana Trust (R)

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY

CHIKKAMAGALURU - 577 102

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



**Certificate of Participation**

This is to certify that PaLlave P. N has successfully completed  
the add on course on "Digital Image Processing and Machine vision" from  
25<sup>th</sup> May 2022 to 10<sup>th</sup> June 2022, organized by Department of Computer  
Science and Engineering.

Prof. Chandra Naik G  
Staff co-ordinator

Prof. Gopalakrishna C  
Staff co-ordinator

Professor and H.O.D.  
Department of Computer Science and Engg.  
Dr. Pushpa Ravikumar  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALURU - 577102




ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Add-On Course on

“DIGITAL IMAGE PROCESSING AND MACHINE VISION”

TOPPERS LIST

SL NO	STUDENT NAME	USN	MARKS OBTAINED
1	RACHITHA P K	4AI19CS083	49
2	ANUSHA BHAT	4AI19CS015	48
3	MOKSHITH M D	4AI19CS060	47

  
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ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING  
Add-On Course on "DIGITAL IMAGE PROCESSING"

ASSESSMENT QUESTIONS

NAME: Rachitha P. K.

USN: 4A I 19 CS 083

INSTRUCTIONS:

1. Answers to all questions are to be recorded on the multiple-choice form, either in the format A-D or True/False.
2. Tick Mark one option only to indicate the answer you consider correct for each question.
3. Mark your answers in Black or blue ink point pen on the multiple-choice form provided.

TICK MARK THE FOLLOWING QUESTIONS:

50\*1=50 Marks

1. What is the first and foremost step in Image Processing?  
a) Image restoration    b) Image enhancement     Image acquisition    d) Segmentation
2. In which step of processing, the images are subdivided successively into smaller regions?  
a) Image enhancement    b) Image acquisition    c) Segmentation     Wavelets
3. What is the next step in image processing after compression?  
a) Wavelets    b) Segmentation    c) Representation and description     Morphological processing
4. What is the step that is performed before color image processing in image processing?  
a) Wavelets and multi resolution processing    b) Image enhancement  
 Image restoration    d) Image acquisition
5. How many number of steps are involved in image processing?  
 10    b) 9    c) 11    d) 12
6. What is the expanded form of JPEG?  
a) Joint Photographic Expansion Group     Joint Photographic Experts Group  
c) Joint Photographs Expansion Group    d) Joint Photographic Expanded Group
7. Which of the following step deals with tools for extracting image components those are useful in the representation and description of shape?  
a) Segmentation    b) Representation & description  
c) Compression     Morphological processing
8. In which step of the processing, assigning a label (e.g., "vehicle") to an object based on its descriptors is done?  
 Object recognition    b) Morphological processing  
c) Segmentation    d) Representation & description

49  
50



9. What role does the segmentation play in image processing?

- a) Deals with extracting attributes that result in some quantitative information of interest
- b) Deals with techniques for reducing the storage required saving an image, or the bandwidth required transmitting it
- c) Deals with partitioning an image into its constituent parts or objects
- d) Deals with property in which images are subdivided successively into smaller regions

10. Among the following image processing techniques which are fast, precise and flexible.

- a) Optical
- b) Digital
- c) Electronic
- d) Photographic

11. An image is considered to be a function of  $a(x,y)$ , where  $a$  represents:

- a) Height of image
- b) Width of image
- c) Amplitude of image
- d) Resolution of image

12. What is pixel?

- a) Pixel is the elements of a digital image
- b) Pixel is the elements of an analog image
- c) Pixel is the cluster of a digital image
- d) Pixel is the cluster of an analog image

13. The range of values spanned by the gray scale is called:

- a) Dynamic range
- b) Band range
- c) Peak range
- d) Resolution range

14. Which is a color attribute that describes a pure color?

- a) Saturation
- b) Hue
- c) Brightness
- d) Intensity

15. Which gives a measure of the degree to which a pure colour is diluted by white light?

- a) Saturation
- b) Hue
- c) Intensity
- d) Brightness

16. Which means the assigning meaning to a recognized object?

- a) Interpretation
- b) Recognition
- c) Acquisition
- d) Segmentation

17. The transition between continuous values of the image function and its digital equivalent is called \_\_\_\_\_

- a) Quantisation
- b) Sampling
- c) Rasterisation
- d) None of the Mentioned

18. If the Gaussian filter is expressed as  $H(u, v) = e^{-(1/2) (u,v)/2D_0^2}$ , where  $D(u, v)$  is the distance from point  $(u, v)$ ,  $D_0$  is the distance defining cutoff frequency, then for what value of  $D(u, v)$  the filter is down to 0.607 of its maximum value?

- a)  $D(u, v) = D_0$
- b)  $D(u, v) = D_0^2$
- c)  $D(u, v) = D_0^3$
- d)  $D(u, v) = 0$

19. State the statement as true or false. "The GLPF did produce as much smoothing as the BLPF of order 2 for the same value of cutoff frequency".

- a) True
- b) False

20. In general, which of the following assures of no ringing in the output?

- a) Gaussian Lowpass Filter
- b) Ideal Lowpass Filter
- c) Butterworth Lowpass Filter
- d) All of the mentioned



21. The lowpass filtering process can be applied in which of the following area(s)?

- a) The field of machine perception, with application of character recognition
- b) In field of printing and publishing industry
- c) In field of processing satellite and aerial images
- d) All of the mentioned

22. The edges and other abrupt changes in gray-level of an image are associated with \_\_\_\_\_

- a) High frequency components
- b) Low frequency components
- c) Edges with high frequency and other abrupt changes in gray-level with low frequency components
- d) Edges with low frequency and other abrupt changes in gray-level with high frequency components

23. A type of Image is called as VHRR image. What is the definition of VHRR image?

- a) Very High Range Resolution image
- b) Very High Resolution Range image
- c) Very High Resolution Radiometer image
- d) Very High Range Radiometer Image

24. The Image sharpening in frequency domain can be achieved by which of the following method(s)?

- a) Attenuating the high frequency components
- b)  Attenuating the low-frequency components
- c) All of the mentioned
- d) None of the mentioned

25. The function of filters in Image sharpening in frequency domain is to perform reverse operation of which of the following Lowpass filter?

- a) Gaussian Lowpass filter
- b)  Butterworth Lowpass filter
- c) Ideal Lowpass filter
- d) None of the Mentioned

26. If  $D_0$  is the cutoff distance measured from origin of frequency rectangle and  $D(u, v)$  is the distance from point  $(u, v)$ . Then what value does an Ideal Highpass filter will give if  $D(u, v) \leq D_0$  and if  $D(u, v) > D_0$ ?

- a) 0 and 1 respectively
- b) 1 and 0 respectively
- c) 1 in both case
- d) 0 in both case

27. What is the relation of the frequencies to a circle of radius  $D_0$ , where  $D_0$  is the cutoff distance measured from origin of frequency rectangle, for an Ideal Highpass filter?

- a) IHPF sets all frequencies inside circle to zero
- b) IHPF allows all frequencies, without attenuating, outside the circle
- c) All of the mentioned
- d) None of the mentioned

28. Which of the following is the transfer function of the Butterworth Highpass Filter, of order  $n$ ,  $D_0$  is the cutoff distance measured from origin of frequency rectangle and  $D(u, v)$  is the distance from point  $(u, v)$ ?

- a)  $H(u, v) = 1 / (1 + [(D_0/D(u, v))]^{2n})$
- b)  $H(u, v) = \{0 \text{ if } D(u, v) \leq D_0 \text{ and } 1 \text{ if } D(u, v) > D_0\}$
- c)  $H(u, v) = 1 - e^{-D^2(u, v)/2D_0^2}$
- d) none of the mentioned



29. Which of the following is the transfer function of the Ideal Highpass Filter? Given  $D_0$  is the cutoff distance measured from origin of frequency rectangle and  $D(u, v)$  is the distance from point  $(u, v)$ .

- a)  $H(u, v) = 1/1 + [(D_0/D(u, v))^{2n}]$     b)  $H(u, v) = \{0 \text{ if } D(u, v) \leq D_0 \text{ and } 1 \text{ if } D(u, v) > D_0\}$   
c)  $H(u, v) = 1 - e^{-D^2(u, v)/2D_0^2}$     d) none of the mentioned

30. Which of the following is the transfer function of the Gaussian Highpass Filter? Given  $D_0$  is the cutoff distance measured from origin of frequency rectangle and  $D(u, v)$  is the distance from point  $(u, v)$ .

- a)  $H(u, v) = 1/1 + [(D_0/D(u, v))^{2n}]$     b)  $H(u, v) = \{0 \text{ if } D(u, v) \leq D_0 \text{ and } 1 \text{ if } D(u, v) > D_0\}$   
c)  $H(u, v) = 1 - e^{-D^2(u, v)/2D_0^2}$     d) none of the mentioned

31. For a given image having smaller objects, which of the following filter(s), having  $D_0$  as the cutoff distance measured from origin of frequency rectangle, would you prefer for a comparably smoother result?

- a) IHLF with  $D_0$  15    b) BHPF with  $D_0$  15 and order 2  
c) GHPF with  $D_0$  15 and order 2    d) All of the mentioned

32. Which of the following statement(s) is true for the given fact that "Applying Highpass filters has an effect on the background of the output image"?

- a) The average background intensity increases to near white  
b) The average background intensity reduces to near black  
c) The average background intensity changes to a value average of black and white  
d) All of the mentioned

33. Gaussian noise is referred to as

- a) red noise    b) black noise    c) white noise    d) normal noise

34. Which of the following is an example of Digital Image processing?

- a) Computer graphics    b) Pixels    c) camera mechanism    d) All of the mentioned

35. Convolution in spatial domain is multiplication in

- a) frequency domain    b) time domain    c) spatial domain    d) plane

36. Linear functions possesses the property of

- a) additivity    b) homogeneity    c) multiplication    d) Both a and b

37. PDF in image processing is called

- a) probability degraded function    b) probability density function  
c) probabilistic degraded function    d) probabilistic density function

38. Filter that replaces the pixel value with the medians of intensity levels is

- a) arithmetic mean filter    b) geometric mean filter  
c) median filter    d) sequence mean filter

39. In geometric mean filters when alpha is equal to 1 then it works as

a) notch filter

b) bandpass filter

c) wiener filter

~~d) inverse filter~~

40. In wiener filtering it is assumed that noise and image are

a) different

b) homogenous

c) correlated

~~d) uncorrelated~~

41. EBCT scanners stands for

a) electrical beam computed tomography

c) electronic beam computed tomography

b) electric beam computed tomography

~~d) electron beam computed tomography~~

42. PSF stands for

a) probability spread function

c) probability spike function

~~b) point spread function~~

d) point spike function

43. Filter that performs opposite to band rejected filter is called

a) lowpass filter

~~b) bandpass filter~~

c) highpass filter

d) max filter

44. Degradation can be estimated by

a) 2 ways

~~b) 3 ways~~

c) 4 ways

d) 5 ways

45. The purpose of restoration is to gain

a) degraded image

~~b) original image~~

c) pixels

d) coordinates

46. Power spectra and noise of undegraded image must be known is a statement of

a) notch filter

b) bandpass filter

~~c) wiener filter~~

d) max filter

47. Contra harmonic mean filter produces

a) degraded image

b) original image

~~c) restored image~~

d) plane

48. One that is not the type of a mean filter

a) arithmetic mean filter

b) geometric mean filter

c) harmonic mean filter

~~d) sequence mean filter~~

49. Which is meant by assuming any two neighboring that are both edge pixels with consistent orientation?

~~a) Canny edge detection~~

b) Smoothing

c) Segmentation

d) None of the mentioned

50. What is the process of breaking an image into groups?

a) Edge detection

b) Smoothing

~~c) Segmentation~~

d) None of the mentioned



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY CHIKKAMAGALURU

Department of Computer Science & Engineering

## Summary Report

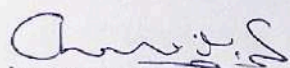
The course "Digital Image Processing" was conducted at CS&E Dept from 25/05/2022 to 04/06/2022.

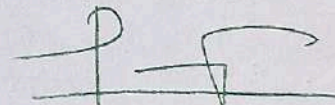
With this course students can understand how to improve images for human interpretation. Information can be processed and extracted from images for machine interpretation. The pixels in the image can be manipulated to any desired density and contrast.

### Course Outcomes

Upon completion of the subject, students will be able to:

- To study the image fundamentals and mathematical transforms necessary for image processing.
- To study the image enhancement techniques
- To study image restoration procedures.
- To study the image compression procedures

  
Instructor's Signature



HOD's Signature .  
Professor and H.O.D.  
Department of Computer Science and Engg.  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALURU - 577102

# **ADD-ON Program**

**2017-18**



**ADD ON PROGRAM**  
**ON**  
**“Basics of MATLAB**  
**Tool”**



**ADD-ON Course**  
On  
**"Basics of MATLAB Tool"**



Organized by,

**Department of Computer Science  
and Engineering.**  
**Adichunchanagiri Institute of  
Technology,**  
**Chikmagalur – 577102**  
**Karnataka, India**  
[www.aitchikmagalur.ac.in](http://www.aitchikmagalur.ac.in)

**About the College:**

**Adichunchanagiri Institute of  
Technology (AIT)** was established in  
the year 1980 under the auspicious  
of **Adichunchanagiri Shikshana  
Trust(R)** with the blessings of  
**Bhairavaikya Jagadguru  
Padmabhushana Sri Sri Sri Dr.  
Balangadharanatha  
Mahaswamiji** to provide technical  
and other professional education in the  
rural area of Chikmagalur, the land of  
Coffee. With the blessings of  
**Jagadguru Sri. Sri. Sri.  
Nirmalanandanatha Swamiji**, AIT is

imparting the quality education in  
Engineering and Management with  
ethical and spiritual values. The  
engineering departments have  
recognized as research centers under  
VTU. The college has well equipped  
laboratory facilities and highly  
qualified and experienced faculty. The  
Institute is providing good training for  
students to excel in academics as well  
as in industry requirements and aims  
towards 100% placements to give a  
better future for students.

**About the Department:**

The Department of Computer Science  
and Engineering is established in the  
year 1986. It was earlier affiliated to  
the Mysore University later to the  
Kuvempu University and at present, it  
is affiliated to Visvesvaraya  
Technological University, Belagavi.  
The alumni of the department are  
working in various reputed  
organizations in India and abroad. The  
department is accredited twice by  
National Broad of Accreditation, New  
Delhi.

The department offers UG, PG  
Courses with an intake of 120 and 18  
respectively and facilitates R&D  
through VTU recognized research  
center. The department has received  
funds from various reputed agencies  
like AICTE, VGST, KSCST, ISRO,  
ISTE, etc., for its activities.

**Objectives of the Course:**

To Impart the Knowledge to the  
students with MATLAB software.  
[This enhances programming  
knowledge in Research and

Development]. It provides a working  
introduction to the Matlab technical  
computing environment. [Themes of  
data analysis, visualization, and  
programming]. It helps to introduce  
students the use of a high-level  
programming language, Matlab.  
[scientific problem solving with  
applications and examples from  
Engineering].

**Resource Person:**

Mr. Varun E.

Assistant Professor

Dept of CS&E, AIT, Chikkamagaluru

**Convenor:**

Dr. Pushpa Ravi kumar, Professor and  
Head, Dept of CS&E.

**Coordinator:**

Mr. Chethan P J, Asst Professor,  
Dept. CS&E, AIT, Chikkamagaluru





|| Jai Sri Gurudev ||



**SRI ADICHUNCHANAGIRI SHIKSHANA TRUST ®  
ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY,  
CHIKKAMAGALURU**

P.B No.91, Adichunchanagiri Extension, Chikkamagaluru-577 102, Karnataka, India.

Ref: AIT/IQAC/CSE/ /2018-19

Date: 26/11/2018

**Circular**

Department of Computer Science & Engineering is conducting a Certificate Program (Add-on Program) on "**Basics of MATLAB Tool**" from **26/11/2018** to **30/11/2018**. All other HOD's instruct the concern department students to attend the program. Following faculty member (Course instructor) is conducting a certificate program at CS&E Department.

Course Instructor  
Mr. Chethan P J  
Assistant Professor  
Dept. of CS&E  
AIT Chikmagalur

  
HOD's Signature and H.O.D.  
Professor  
Department of Computer Science and  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALURU - 577102

  
Principal Signature  
**Dr. C.T. JAYADEVA**  
Principal B.E., M.Tech., Ph.D  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALURU-577102

## **Basics of MATLAB Tool**

**Add on Course for V Semester  
B.E. Computer Science and Engineering**

**Duration: 30 Hours**

### **Learning Objectives:**

1. To learn features of MATLAB as a programming tool.
2. To promote new teaching model that will help to develop programming skills and technique to solve mathematical problems.
3. To understand MATLAB graphic feature and its applications.
4. To use MATLAB as a simulation tool.

### **Module 1. Introduction to MATLAB**

- The MATLAB Environment
- MATLAB Basics – Variables, Numbers, Operators, Expressions, Input and output.
- Vectors, Arrays – Matrices

### **Module 2. MATLAB Functions.**

- Built-in Functions
- User defined Functions

### **Module 3. Programming with MATLAB**

- Conditional Statements, Loops
- MATLAB Programs – Programming and Debugging.
- Applications of MATLAB Programming.

### **References:**

1. "A Guide to MATLAB - for Beginners and Experienced Users", 2<sup>nd</sup> Ed., Brian R. Hunt, Ronald L. Lipsman, Jonathan M. Rosenberg, Cambridge University Press, (2006).
2. "Essentials of MATLAB Programming", 2<sup>nd</sup> Ed., Stephen J. Chapman, Cengage Learning, (2009).



**ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY**  
**CHIKKAMAGALURU-577102**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**ADD-ON Course – Basics of MATLAB Tool**


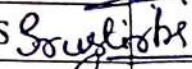


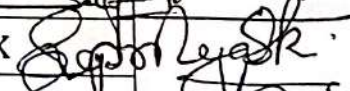

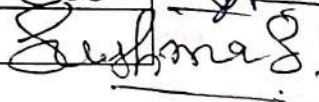
**Enrollment List**

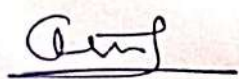
Sl. NO	USN	Student Name
1	4AI14CS012	APOORVA S R <i>Apoorva</i>
2	4AI14CS026	DEEKSHA K N <i>Deek</i>
3	4AI15CS002	ABHISHEK G <i>Abhishek</i>
4	4AI15CS028	CHANDANA PH <i>Chandana</i>
5	4AI15CS051	KOUSHIK S D <i>Koushik</i>
6	4AI15CS064	NIDHI A R <i>Nidhi</i>
7	4AI15CS103	SIDDANTH B K <i>Siddanth</i>
8	4AI16CS002	ADYA H N <i>Adya</i>
9	4AI16CS003	AGNES SANMATHI D <i>Agnes</i>
10	4AI16CS004	ALFIYA BANU <i>Alfiya</i>
11	4AI16CS006	ANANYA K V <i>Ananya</i>
12	4AI16CS007	ANUSHA K N <i>Anusha</i>
13	4AI16CS008	ANUVIKA A S <i>Anuvika</i>
14	4AI16CS009	ARVIND GIRISH <i>Arvind</i>
15	4AI16CS011	BABITHA B <i>Babitha</i>
16	4AI16CS012	BHAGYASHREE H D <i>Bhagyashree</i>
17	4AI16CS013	BHOOMIKA G S <i>Bhoomika</i>
18	4AI16CS014	BHOOMIKA K <i>Bhoomika</i>
19	4AI16CS015	BINDUSHREE C <i>Bindushree</i>
20	4AI16CS016	BINDUSREE B R <i>Bindu</i>

21	4AI16CS019	CHINMAYEE <u>Chinnu</u>
22	4AI16CS023	DEEPAK N R <u>Deepak</u>
23	4AI16CS025	GADDI CHETAN <u>Chethan</u>
24	4AI16CS026	GOURAV B R <u>Gourav</u>
25	4AI16CS027	HARSHA H K <u>Harsha H N</u>
26	4AI16CS028	JAYASHREE <u>Jayashree</u>
27	4AI16CS029	JEEVAN A S <u>Jeevan</u>
28	4AI16CS030	KALPASHREE Y <u>Kalpashree Y</u>
29	4AI16CS031	KARTHIK N L <u>Karthik</u>
30	4AI16CS032	KAVYA S <u>Kavya S</u>
31	4AI16CS033	KAVYA S K <u>Kavya S K</u>
32	4AI16CS034	KAVYASHREE C M <u>Kavyashree C M</u>
33	4AI16CS035	KHALEEL AHAMED <u>Khalcel</u>
34	4AI16CS036	KOWSHIK V <u>Kowshik V</u>
35	4AI16CS037	KRUTHIKA G NAYAK <u>Kruthika</u>
36	4AI16CS038	LEANDRA MARIA MENDON <u>Leandra Maria Mendon</u>
37	4AI16CS040	MANISHA P BEERAIAH <u>Manisha P Beeraiah</u>
38	4AI16CS042	MEGHANA D Y <u>Meghana D Y</u>
39	4AI16CS047	NAVEEN P PARVATHANENI <u>Naveen P Parvathaneni</u>
40	4AI16CS048	NAYANA K S <u>Nayana K S</u>
41	4AI16CS049	NESARA B R <u>Nesara B R</u>
42	4AI16CS051	NISCHITHA K S <u>Nischitha K S</u>
43	4AI16CS052	NISHANTH K R <u>Nishanth K R</u>
44	4AI16CS053	NISWARTH V SHETTY <u>Niswarth V Shetty</u>
45	4AI16CS058	POOJA S <u>Pooja S</u>
46	4AI16CS059	POORNIMA C L <u>Poornima C L</u>
47	4AI16CS062	RACHANA N VANAGUR <u>Rachana N Vanagur</u>
48	4AI16CS127	POOJA C P <u>Pooja C P</u>



49	4AI14CS092	SHREYAS C B <i>Shreyas C.B.</i>
50	4AI15CS063	NAVANEETH G D <i>Nave</i>
51	4AI15CS102	SHUSHMA N GOWDA <i>Sush</i>
52	4AI15CS112	SUMAN V H <i>Suman</i>
53	4AI16CS039	MADHUMITHA K M <i>Mad</i>
54	4AI16CS065	RAKESH T 'R'
55	4AI16CS066	RAMANANDA S BHAT <i>Raman</i>
56	4AI16CS067	RAMYA R <i>Ramya</i>
57	4AI16CS068	RAMYASHREE C A <i>Ramyashree</i>
58	4AI16CS070	ROJA K S <i>Roja</i>
59	4AI16CS072	SADVI N B <i>Sadvi</i>
60	4AI16CS073	SAHANA DESAI <i>Sahana</i>
61	4AI16CS074	SAMRUDDHI D K <i>Samruddhi</i>
62	4AI16CS075	SAMRUDH PATEL D M <i>Patel DM</i>
63	4AI16CS076	SAMRUDHI H R <i>Samr</i>
64	4AI16CS079	SANJANA R <i>Sanjana</i>
65	4AI16CS080	SANJANA R G <i>Sanjana</i>
66	4AI16CS081	SAVEENA M M <i>Saveena M.M.</i>
67	4AI16CS082	SHARATH K R <i>Sharath</i>
68	4AI16CS085	SHREYA B R <i>Shreya</i>
69	4AI16CS086	SHRIKARAN C N <i>Shrikaran</i>
70	4AI16CS087	SHRUTHA R JAIN <i>Shrutha</i>
71	4AI16CS088	SIDDESH P <i>Siddesh</i>
72	4AI16CS089	SINCHANA S B <i>Sinchana S B</i>
73	4AI16CS090	SINCHANA S GOWDA <i>Sinchana</i>
74	4AI16CS091	SNEHA K <i>Sneha</i>
75	4AI16CS092	SOUMYA H <i>Soumya</i>

76	4AI16CS100	SRISTI BAGAMANE 
77	4AI16CS101	SRUSTI R B S 
78	4AI16CS102	SUMANTHA M K 
79	4AI16CS103	SUPRITH K 
80	4AI16CS104	SUPRIYA S K 
81	4AI16CS105	SURYA C P 
82	4AI16CS106	SUSHMA S 



Course Instructor's Signature



HOD's signature H.O.D.  
 Department of Computer Science and E  
 Adichunchanagiri Institute of Te  
 CHIKMAGALUR - 577102



**ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY**  
**CHIKKAMAGALURU-577102**  
**DEPARTMENT OF COMPUTERS SCIENCE & ENGINEERING**

ADD-ON Course – Basics of MATLAB Tool

**Attendance Report**

Note : Session 1-9.30-12.30 Session 2-2.30-5.30

S.NO	USN	Student Name	26/11/2018		27/11/2018		28/11/2018		29/11/2018		30/11/2018		Signature
			Session-1	Session-2	Session-1	Session-2	Session-1	Session-2	Session-1	Session-2	Session-1	Session-2	
1	4A114CS012	APOORVA S R	P	P	P	P	P	P	P	P	P	P	<i>Apoorva</i>
2	4A114CS026	DEEKSHA K N	P	P	P	P	P	P	A	P	P	P	<i>Deek</i>
3	4A115CS002	ABHISHEK G	P	P	P	P	A	P	P	P	A	P	<i>Abhis</i>
4	4A115CS028	CHANDANA P H	P	P	P	P	P	P	P	P	P	P	<i>Chandana</i>
5	4A115CS051	KOUSHIK S D	P	P	P	P	A	P	P	P	P	P	<i>Koushik</i>
6	4A115CS064	NIDHI A R	P	P	P	P	P	P	P	P	A	P	<i>Nidhi</i>
7	4A115CS103	SIDDANTH B K	P	P	P	P	P	P	P	P	P	P	<i>Siddanth</i>
8	4A116CS002	ADYA H N	P	P	P	P	P	P	P	P	P	P	<i>Adya</i>
9	4A116CS003	AGNES SANMATHI D	P	P	P	P	P	P	A	P	P	P	<i>Agnes</i>
10	4A116CS004	ALFIYA BANU	P	A	P	P	A	P	P	P	A	P	<i>Alfiya</i>
11	4A116CS006	ANANYA K V	A	P	P	P	P	P	P	P	P	P	<i>Ananya</i>
12	4A116CS007	ANUSHA K N	A	P	P	P	P	P	P	P	P	P	<i>Anusha</i>
13	4A116CS008	ANUVIKA A S	P	A	P	P	P	P	P	P	P	A	<i>Anuvika</i>
14	4A116CS009	ARVIND GIRISH	P	P	P	P	P	P	P	P	P	P	<i>Arvind</i>
15	4A116CS011	BABITHA B	P	P	P	P	P	A	P	P	P	P	<i>Babitha</i>

















||Jai Sri Gurudev||

Sri Adichunchanagiri Shikshana Trust (R)

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY



CHIKKAMAGALURU - 577 102

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



## Certificate of Participation

This is to certify that Meghana D.Y has successfully completed the add on course on "Basics of MATLAB Tool" from 26<sup>th</sup> to 30<sup>th</sup> November 2018, organized by Department of Computer Science and Engineering.

Prof. Chethan P J

Staff co-ordinator

Prof. S J Prashanth

Staff co-ordinator

Dr. Pushpa Ravikumar

H.O.D

**ADICHUNCHANAGIRI INSTITUTE OF  
TECHNOLOGY, CHIKKAMAGALURU-577102.  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING  
Add-On Course on "Basics of MATLAB Tool"**

**OVER ALL Add-On Course PARTICIPANTS FEEDBACK**

Sl.No	DESCRIPTION	EXCELLENT	GOOD	POOR
1	How would you rate the presenter's knowledge on the concept?	✓		
2	How would you rate the concepts and Information provided by the Presenter?		—	
3	What was your overall impression of the session?		—	
4	Remarks	Came to know about MATLAB, session was so helpfull.		

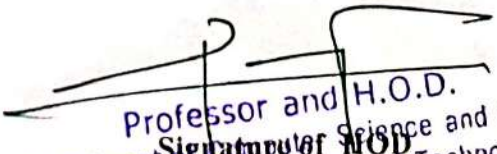
  
 Signature of the Participant



ADICHUCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING  
ADD ON COURSE: BASICS OF MATLAB TOOL

Toppers List

SLNo	Student Name	Student USN	Marks Obtained
1	SAMRUDHI H.R	4AI16CS076	44
2	DEEKSHA K.N	4AI14CS026	40
3	RAMYA R	4AI16CS067	32

  
Professor and H.O.D.  
Department of Computer Science and Engg.  
Adichunchanagiri Institute of Technology  
CHIKMAGALUR - 577102

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY CHIKKAMAGALURU

Department of Computer Science & Engineering

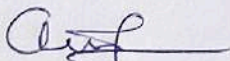
## Summary Report

The course "Basics of MATLAB Tool" was conducted at CS&E Dept from 26/11/2018 to 30/11/2018.

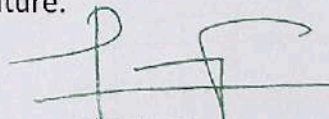
During the course, the students are able to understand the importance of Millions of engineers and scientists worldwide use MATLAB for a range of applications, in industry and academia, including deep learning and machine learning, signal processing and communications, image and video processing, control systems, test and measurement, computational finance, and computational biology.

### Course Outcomes

1. Students learned features of MATLAB as a programming tool. They are fully familiar to all the features of MATLAB software and easily handle the software.
2. New teaching model which include theory & practical running simultaneously is introduced to our students. This method is very effective and helped to develop programming skills and technique to solve mathematical problems.
3. Students learned graphic features of MATLAB and they are able to use this feature effectively in the various applications.
4. Students are able to use MATLAB as a simulation tool.
5. Major outcome is students are able to work as a 'MATLAB programmer' in the industry because of the hands on practical sessions. This job oriented course will help students to get the jobs in future.



Instructor's Signature



HOD's Signature  
Professor and H.O.D.

Department of Computer Science and Engineering  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALURU - 577102





**ADD-ON Course**  
On  
**"E-Waste Management"**



Organized by,

**Department of Computer Science  
and Engineering,  
Adichunchanagiri Institute of  
Technology,  
Chikmagalur – 577102  
Karnataka, India**  
[www.aitechikmagalur.ac.in](http://www.aitechikmagalur.ac.in)

**About the College:**

Adichunchanagiri Institute of Technology (AIT) was established in the year 1980 under the auspicious of Adichunchanagiri Shikshana Trust(R) with the blessings of Bhairavaikya Jagadguru Padmabhushana Sri Sri Sri Dr. Balagangadharanatha Mahaswamiji to provide technical and other professional education in the rural area of Chikmagalur, the land of Coffee. With the blessings of Jagadguru Sri Sri Sri. Nirmalanandanatha Swamiji, AIT is imparting the quality education in Engineering and Management with ethical and spiritual values. The engineering departments have

recognized as research centers under VTU. The college has well equipped laboratory facilities and highly qualified and experienced faculty. The Institute is providing good training for students to excel in academics as well as in industry requirements and aims towards 100% placements to give a better future for students.

**About the Department:**

The Department of Computer Science and Engineering is established in the year 1986. It was earlier affiliated to the Mysore University later to the Kuvempu University and at present, it is affiliated to Visvesvaraya Technological University, Belagavi. The alumni of the department are working in various reputed organizations in India and abroad. The department is accredited twice by National Broad of Accreditation, New Delhi.

The department offers UG, PG Courses with an intake of 120 and 18 respectively and facilitates R&D through VTU recognized research center. The department has received funds from various reputed agencies like AICTE, VGST, KSCST, ISRO, ISTE, etc., for its activities.

**Objectives of the Course:**

E-waste or electronic waste describes discarded or rejected electronic or electrical devices. Used electronics or electrical products which are destined for reuse, resale, refurbishment, salvage recycling through material recovery, or disposal are also considered e-waste. Informal e-waste processing in developing nations can lead to adverse human health effects and pollution in the environment. The recycling of e-waste serves a lot of useful purposes. It includes protecting human & environmental health by keeping those devices out of landfills. Or recovering the parts within the devices that still have value and providing manufacturers with recycled metal that can be used to make new products.

**Resource Person:**


Mr. Varun E.  
Assistant Professor  
Dept of CS&E, AIT, Chikmagalur

**Convenor:**

Dr Pushpa Ravi Kumar, Professor and Head, Dept. of CS&E.

**Coordinator:**

Mr. Gopinath C B, Asst Professor,  
Dept. CS&E, AIT, Chikmagalur



**E-Waste Management**  
Add on Course for I Semester  
B.E. Computer Science and Engineering

**Duration:** 30 Hours

**Syllabus**

**Module 1: INTRODUCTION**

What is E-Waste, Indian and global scenario of e-Waste, Growth of Electrical and Electronics industry in India, E-waste generation in India, Composition of e-waste, Possible hazardous substances present in e-waste, Environmental and Health implications.

**Module 2: E-WASTE LEGISLATION**

Regulatory regime for e-waste in India, The hazardous waste(Management and Handling) rules 2003, E-waste management rules 2015, Regulatory compliance including roles and responsibility of different stakeholders – producer, manufacturer, consumer etc., Proposed reduction in the use of hazardous substances(RoHS), Extended producer responsibility (EPR).

**Module 3: END OF LIFE MANAGEMENT OF E-WASTE**

Historic methods of waste disposal – dumping, burning, landfill, Recycling and recovery technologies –

**Reference:**

Johri R., “E-waste: implications, regulations, and management in India and current global best practices”, TERI Press, New Delhi.





|| Jai Sri Gurudev ||



SRI ADICHUNCHANAGIRI SHIKSHANA TRUST @  
ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY,  
CHIKKAMAGALURU

P.B No.91, Adichunchanagiri Extension, Chikkamagaluru-577 102, Karnataka, India.

Ref: AIT/IQAC/CSE/ /2018-19

Date: 16/03/2018

Circular

Department of Computer Science & Engineering is conducting a Certificate Program (Add-on Program) on "E-Waste Management" from 16/03/2018 to 20/03/2018. All other HOD's instruct the concern department students to attend the program. Following faculty member (Course instructor) is conducting a certificate program at CS&E Department.

Course Instructor  
Mr. Gopinath C B  
Assistant Professor  
Dept. of CS&E  
AIT Chikkmagaluru.

HOD's Signature  
Professor and

Department of Computer Science  
Adichunchanagiri Institute of Technology,  
CHIKMAGALUR - 577102

Dr. C.T. JAYADEVA  
Principal  
B.E., M.Tech., Ph.D.  
Adichunchanagiri Institute of Technology,  
CHIKKAMAGALURU-577102

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY CHIKKAMAGALURU-577102  
 DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING  
 ADD-ON Course - E-Waste Management  
Student Enrollment List

S.NO	USN	Student Name
1	4A118CS002	AIKYA MH <i>AS</i>
2	4A118CS003	AISHWARYA S <i>AISHA</i>
3	4A118CS004	AMAR B M <i>Amar</i>
4	4A118CS006	ANANYA K N <i>ANYS</i>
5	4A118CS007	ANKITHA A P <i>Ankitha</i>
6	4A118CS008	ARJUN RAM K S <i>Arth</i>
7	4A118CS011	AYESHA SHABNAM <i>Agesha</i>
8	4A118CS012	B SAQLEN PASHA <i>Arms</i>
9	4A118CS013	BAVIN KOYA <i>Bavin</i>
10	4A118CS015	BHOOMIKA <i>Bomika</i>
11	4A118CS016	BHOOMIKA R <i>R. Bomid.</i>
12	4A118CS017	BRUNDHA K M <i>Brundha</i>
13	4A118CS020	CHANDAN V SHET <i>chandana</i>
14	4A118CS022	CHANDANA K S <i>chandana</i>
15	4A118CS023	DARSHAN L C <i>Darshan</i>
16	4A118CS024	DEEKSHA C M GOWDA <i>Deeksha</i>
17	4A118CS025	DEEKSHA HS <i>Deepika</i>
18	4A118CS026	DEEPIKA G <i>Deepika</i>
19	4A118CS028	DHANUSHREE V L <i>Dhanush</i>



46	4AI18CS077	RACHANA H C
47	4AI18CS078	RACHANA M C
48	4AI18CS080	RANJINI H P
49	4AI18CS082	REETH PRADEEP
50	4AI18CS085	ROMIYA TARANUM
51	4AI18CS086	ROSHAN M
52	4AI18CS088	SACHIN C J
53	4AI18CS090	SAMBRAM GOWDA S M
54	4AI18CS094	SATHVIK A K
55	4AI18CS098	SHASHANK B S
56	4AI18CS100	SHRAVYA D S
57	4AI18CS101	SHREYA GIRISH
58	4AI18CS105	SINCHANA S
59	4AI18CS106	SINCHANA V M
60	4AI18CS108	SONIA FATHIM
61	4AI18CS109	SOUNDARYA M K
62	4AI18CS112	SUKITH A S
63	4AI18CS113	SUMANTH S
64	4AI18CS115	SUSHMA K
65	4AI18CS116	TEJAS J SHETTY
66	4AI18CS118	THANYA
67	4AI18CS120	VAISHNAVI M R
68	4AI18CS130	DEVIKA T R
69	4AI18CS005	ANANTH KUMAR M V
70	4AI18CS009	ARUN KUMAR N R BHAVANA B N
71	4AI18CS014	

Rachana

Rachana

Ranjini

Reeth P

Romiya

Roshan M

Sachin

Sambaram

Sathvik

Sathank

Shravya

Shreya

Sinchan

Sinchana

Sonia

Soundary

Sukith

Sumanth

Sushma

Tejas

Thanya

Vaishnavi

Devika

Ananya

Arun

Bhava

(D)

20	4AI18CS029	DIVYA S NAYAK	Nayak
21	4AI18CS030	GANESH KARTHIK H G	Ganesh
22	4AI18CS033	HARSHA K P	Has K P
23	4AI18CS035	JEEVAN G K	Dee Vang K
24	4AI18CS036	JUVERIA IRAM	Severiya Iram
25	4AI18CS039	LALITHYA M S	Lalitha
26	4AI18CS040	LATHA T J	Latha T J
27	4AI18CS043	MANIKA KESHARWANI	Manika
28	4AI18CS044	MANJUNATH C C	Manjunath C C
29	4AI18CS046	MANOJ N R	Manoj N R
30	4AI18CS045	MANOJ KUMAR B G	Manoj
31	4AI18CS047	MANOJ P H	Manoj
32	4AI18CS048	MANOJ T R	Manoj T B
33	4AI18CS052	MOHITH N H	Mohith
34	4AI18CS055	NAGASHREE H D	Nags
35	4AI18CS057	NAVEEN KUMAR H C	N Kumar
36	4AI18CS059	NIKHIL SUBRAMANYA	Nikhil
37	4AI18CS060	NIREEKSHA N P	Nireeksha
38	4AI18CS062	NISCHAL B J	Nischali
39	4AI18CS063	NISCHITHA R	Nischitha
40	4AI18CS064	NISHA	Nisha
41	4AI18CS069	PHALGUNI SHARASCHANDRA	Phalguni
42	4AI18CS070	POOJA K M	Pooja
43	4AI18CS071	POOJA M	Pooja
44	4AI18CS072	PRAGNA SUDHIR	Pragna
45	4AI18CS074	PRATHEEKSHA G S	Pratheeksha



72	4AI18CS018	CHAITRA B L	<i>Chaitra</i>
73	4AI18CS021	CHANDANA K P	<i>Chandana</i>
74	4AI18CS084	ROHIT CHAVAN	<i>Rohit</i>
75	4AI18CS027	DEEPIKA K V	<i>Deepika</i>
76	4AI18CS031	GANESH R	<i>Ganesh</i>
77	4AI18CS034	IMPANA K S	<i>Impa</i>
78	4AI18CS037	KARTHIK GOWDA H L	<i>Karthik</i>
79	4AI18CS049	MANSI DUTT K S	<i>Mansi</i>
80	4AI18CS051	MEGHASHREE B	<i>Megha</i>
81	4AI18CS058	NIHARIKA T S	<i>Niharika</i>

*[Handwritten Signature]*

Course Instructor's Signature

*[Handwritten Signature]*  
 HOD, Signature  
 Department of Computer Science and Engineering  
 Adichunchanagiri Institute of Technology  
 CHIKKAGALLUR - 571117















**ADICHUNCHANAGIRI INSTITUTE OF  
TECHNOLOGY, CHIKKAMAGALURU-577102.**  
**DEPARTMENT OF COPMUTER SCIENCE & ENGINEERING**  
**Add-On Course on "E-Waste "**  
**OVER ALL Add-On Course PARTICIPANTS FEEDBACK**

Sl.No	DESCRIPTION	EXCELLENT	GOOD	POOR
1	How would you rate the presenter's knowledge on the concept?	✓		
2	How would you rate the concepts and Information provided by the Presenter?	✓		
3	What was your overall impression of the session?	✓		
4	Remarks	we got to know about the things that's happen in our surroundings And to get rid of it		

*Harsha K.P.*  
Signature of the Participants





||Jai Sri Gurudev||

Sri Adichunchanagiri Shikshana Trust (R)

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY



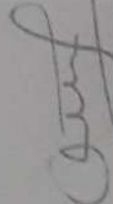
CHIKKAMAGALURU - 577 102


DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

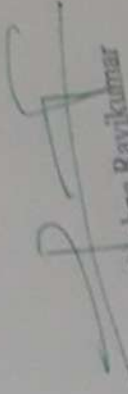


Certificate of Participation

This is to certify that HARSHA K.P has successfully completed the add on course on "E- Waste Management " from 16<sup>th</sup> to 20<sup>th</sup> March 2018, organized by Department of Computer Science and Engineering.

  
Prof. Chethan P J  
Staff co-ordinator

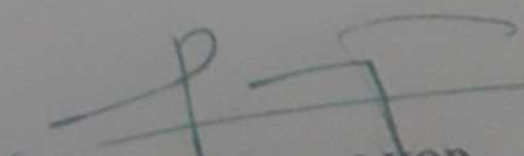
  
Prof. S J Prashanth  
Staff co-ordinator

  
Dr. Pshpa Ravikumar  
H.O.D

ADICHUCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING  
ADD ON COURSE: E-Waste Management

Toppers List

SLNo	Student Name	Student USN	Marks Obtained
1	ANKITHA AP	4AI18CS007	49
2	NISCHITHA R	4AI18CS063	48
3	CHANDANA KS	4AI18CS022	47

  
Signature of HOD  
Professor and H.O.  
Department of Computer Science  
Adichunchanagiri Institute of  
CHIKMAGALURU - 577 102



ADICHUCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING  
ADD ON COURSE: E-Waste Management

Assessment Questions

Semester: I

Max Marks: 50

Student Name: ANKITHA A.P

USN: 4AT18CS007

49  
50

1. E-waste is also known as  
a)  Electronic waste    b)  Essential waste    c)  European waste    d)  Household waste
2. Which one of the following is an example of e-waste?  
a)  Nuclear wastes, medical wastes, toxic industrial wastes, etc  
b)  Plastic bags, cardboard boxes, corroded metals, etc  
c)  Beverage cans, packaged boxes, plastic bottles, etc  
d)  Sensors, alarms, sirens, TV etc.
3. Which one of the following is wrong about Cathode Ray Tubes (CRTs)?  
a)  They were used in television sets.  
b)  They do not pose any environmental threat as such.  
c)  They have a high content of carcinogens and heavy metals.  
d)  They release toxins into the soil, air and groundwater.
4. What is the most widely used method for e-waste disposal?  
a)  Burning    b)  Recycling    c)  Disintegration    d)  Land-filling.
5. Name some of the most hazardous leachates found in land-fills.  
a)  Copper, and Bromine.    b)  Mercury, Cadmium and Lead.  
c)  Lithium, Beryllium and Bromine.    d)  Boron, Fluorine and Hydrogen.
6. What are the adverse effects of mercury on health?  
a)  Lung Cancer.    b)  Damages kidneys and brain.    c)  Softens bones.    d)  Asthmatic bronchitis
7. When did E-waste (management and handling) rules, 2011 come into effect?  
a)  January 1, 2012    b)  March 1, 2012    c)  May 1, 2012.    d)  July 1, 2012





17) The term ISWM refers to

- a) International Solid Waste Management      b) Integrated Solid Waste Management  
c) Integrated Solid Waste Machine      d) International Solid Waste Mechanism

18) In 2006, the IAER projected that the electronic and electrical appliances would become e-waste by 2010.

- a) 1 billion      b) 2 billion      c) 3 billion      d) 4 billion

19) What is the hazardous pollutant released from calculators?

- a) Lithium      b) Barium      c) Lead      d) Copper

20) Which of the following can be considered as source reduction?

- a) Material Substitution      b) Treating offsite      c) Analysis      d) Landfill disposal

21) Which of the following metal affects mental development in children?

- a) Lead      b) Barium      c) Zinc      d) Silver

22) Which of the following health impact is observed by dumping cathode tubes?

- a) Silicosis      b) Lung Disease      c) Kidney Inflammation      d) PAH exposure

23) What is iron and steel constitute of e-waste?

- a) 20      b) 30      c) 40      d) 50

24) According to the Comptroller and Auditor General (CAG) report what is the amount of e-waste generated annually?

- a) 8LT      b) 5LT      c) 4LT      d) 7LT

25) Which of the hazardous pollutant occurs in plastic?

- a) Lithium      b) PCB's      c) Lead      d) Copper

26) Which of the following is not a biomedical waste?

- a) Animal waste      b) Microbiological waste      c) Chemical waste      d) Domestic waste

27) Waste removal system was established in which of the following cities for the first time?

- a) Athens      b) Lahore      c) Paris      d) London

28) What is hazardous pollutant released from Circuit Boards?

- a) Arsenic                      b) Barium                      c) Lead                      d) Copper

29) Why is it difficult to recycle plastics?

- a) It is very hard                      b) It comes in different sizes  
c) It is adhesive                      d) It contains different types of polymer resins

30) Which of the following is done on an individual level?

- a) Burning                      b) Disposal                      c) Recycling                      d) Source reduction

31) What is hazardous pollutant released from Calculators?

- a) Lithium                      b) Mercury                      c) Lead                      d) Copper

32) Which of the following plans is used as a waste management plan?

- a) Plan for reuse                      b) The integrated plan                      c) Plan for recycling                      d) Plan for reducing

33) The organic material of the solid waste will decompose

- a) By the flow of water                      b) By the soil particles  
c) By the action of microorganisms                      d) By oxidation

34) Which of the following wastes is called the Municipal Solid Waste (MSW)?

- a) Food wastes                      b) Wood pieces                      c) Plastic cans                      d) All of the above

35) The process of burning municipal solid wastes under suitable temperature and conditions in a specific furnace is called \_\_\_\_\_.

- a) Landfill                      b) Incineration                      c) Recycling                      d) Vermicomposting

36) The burning of solid waste is not recommended because

- a) It is very costly                      b) It requires a lot of space  
c) It requires modern technologies                      d) It causes several environmental issues

37) When the organic matter present in the sanitary landfill decomposes, it generates

- a) Methane                      b) Nitrogen                      c) Hydrogen                      d) All of the above





47) Polluters pay Principle means

- a)  Anyone causing the pollution will pay for the damage caused
- b)  Polluters paid well by NGOs
- c)  Polluters may get a bonus
- d)  Polluters are not the cause of pollution

48) Which of the following HW cannot be recycled?

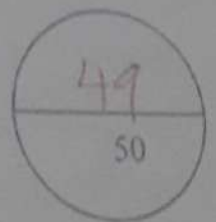
- a)  Used oil
- b)  Treatment waste
- c)  Paints
- d)  Batteries

49) Which of the following solid wastes describes the term 'Municipal Solid Waste'?

- a)  Toxic
- b)  Hazardous
- c)  Non-toxic
- d)  Non-hazardous

50) Why is recycled paper banned for use in food containers?

- a)  Because it creates a lot of spaces
- b)  Because it creates contamination
- c)  Because paper can be used only one time
- d)  Because paper is very thick and can't cover the food containers





ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY CHIKKAMAGALURU

Department of Computer Science & Engineering

## Summary Report

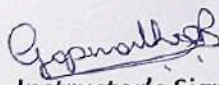
The course "E- Waste Management" was conducted for the first year students at CS&E Dept from 16/03/2018 to 20/03/2018.

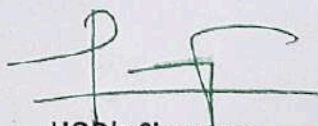
During the course ,the students are able to understand the importance of The recycling of e-waste. For instance, include protecting human and environmental health by keeping those devices out of landfills. Or recovering the parts within the devices that still have value, and providing manufacturers with recycled metals that can be used to make new products.

### Course Outcomes

Upon successful completion of this course, students will be able to:

- Learn basic concepts of solid waste management, beginning from source generation to waste disposal in a system of municipality organizational structure.
- Develop understanding on various technological applications for processing of waste and their disposals in various ways.
- Acquire knowledge on waste to energy productions in the perspectives of sustainable development.
- Apply basic concepts in hazardous waste management and integrated waste management for urban areas.
- To acquire a fair amount of knowledge on waste characterization and its management practiced in various cities of India. To achieve this objective, students will be taught different case studies reported by previous researchers and technical bodies.

  
Instructor's Signature

  
HOD's Signature  
Professor and H.O.D.  
Department of Computer Science and Engg  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALUR - 577102

# **ADD-ON Program**

**2018-19**



**ADD on Program**  
**On**  
**“Basics of VLSI Design”**



|| Jai Sri Gurudev ||



**SRI ADICHUNCHANAGIRI SHIKSHANA TRUST ®**  
**ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU**  
P.B No.91, Adichunchanagiri Extension, Chikkamagaluru-577 102, Karnataka, India.

Ref: AIT/IQAC/CSE/ /2018-2019

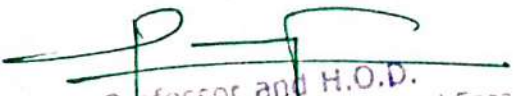
Date: 01/01/2018

**Circular**

Department of Computer Science & Engineering is conducting a Certificate Program (Add-on Program) on "Basics of VLSI Design [19CS\_AC\_012]" from 15-01-2018 to 28-01-2018. All other HOD's instruct the concern department students to attend the program. Following faculty member (Course instructor) is conducting a certificate program at CS&E Department.

**Course Instructor**

1. Prof. S J Prashantha  
Assistant Professor  
Dept. of CS&E  
AIT Chikmagalur
2. Prof. Vivekananda  
Assistant Professor  
Dept. of CS&E  
AIT Chikmagalur

  
Professor and H.O.D.  
HOD's Signature  
Department of Computer Science and Engg.  
Adichunchanagiri Institute of Technology  
CHIKMAGALUR - 577102

  
Principal Signature  
Dr. C.T. JAYADEVA  
Principal  
B.E.,M.Tech.,Ph.D  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALURU-577102





**ADD-ON Course**

On

**“Basics of VLSI Design”**



Organized by,

**Department of Computer Science and Engineering,  
Adichunchanagiri Institute of Technology,  
Chikmagalur – 577102  
Karnataka, India  
[www.aitechmagalur.ac.in](http://www.aitechmagalur.ac.in)**

**About the College:**

**Adichunchanagiri Institute of Technology (AIT)** was established in the year 1980 under the auspicious of **Adhichunchanagiri Shikshana Trust(R)** with the blessings of **Bhairavaikya Jagadguru Padmabhushana Sri Sri Sri Dr. Balagangadharanatha Mahaswamiji** to provide technical and other professional education in the rural area of Chikmagalur, the land of Coffee. With the blessings of **Jagadguru Sri Sri Sri. Nirmalanandanatha Swamiji**, AIT is imparting the quality education in Engineering and Management with ethical and spiritual values. The engineering departments have

recognized as research centers under VTU. The college has well equipped laboratory facilities and highly qualified and experienced faculty. The Institute is providing good training for students to excel in academics as well as in industry requirements and aims towards 100% placements to give a better future for students.

**About the Department:**

The Department of Computer Science and Engineering is established in the year 1986. It was earlier affiliated to the Mysore University later to the Kuvempu University and at present, it is affiliated to Visvesvaraya Technological University, Belagavi. The alumni of the department are working in various reputed organizations in India and abroad. The department is accredited twice by National Broad of Accreditation, New Delhi.

The department offers UG, PG Courses with an intake of 120 and 18 respectively and facilitates R&D through VTU recognized research center. The department has received funds from various reputed agencies like AICTE, VGST, KSCST, ISRO, ISTE, etc., for its activities.

**Objectives of the Course:**

Today’s world is digital. Unbelievable growth in electronics has made it possible. The back bone for electronic gadgets is a small silicon material which is often referred as chip. In order to design any chip (IC), the designer has to follow many complex procedures for which one has to have all the basic of circuit design using transistors.

The advent of Electronic Design Automation Tools made it possible to cut down the design cycle time to a great extent. In this course Verilog HDL is presented which is a popular language for designing any digital circuit using EDA Tools. Various circuits in transistor level are presented which are very much essential for IC design.

**Resource Person:**

Mr. Darshan L.M.  
Assistant Professor  
Dept of CS&E, AIT, Chikkamagaluru

**Convenor:**

Dr Pushpa Ravi kumar, Professor and Head, Dept. of CS&E.

**Coordinator:**

Mr. S J Prashanth, Asst Professor,  
Dept. CS&E, AIT, Chikkamagaluru



Add on course – 30 Hours

ADD on Course Name: Basics of VLSI Design

Course Code: 19CS\_AC\_012

**Module 1:**

**10 Hours**

Introduction: Basic steps of IC fabrication, PMOS, NMOS, CMOS & BiCMOS, and SOI process technologies, MOS transistors - MOS transistor switches – Basic gate using switches, working polar transistor Resistors and Capacitors. Basic Electrical Properties of MOS and BiCMOS Circuits: Working of MOS transistors – threshold voltage; MOS design equations:  $I_{ds}$ - $V_{ds}$  relationships, Threshold Voltage, Body effect, Channel length modulation,  $g_m$ ,  $g_{ds}$ , figure of merit  $\omega_0$ ; Pass transistor, NMOS Inverter, CMOS Inverter analysis and design, Various pull ups loads, Bi-CMOS Inverters.

**Module 2:**

**10 Hours**

Basic Circuit Concepts: Capacitance, resistance estimations- Sheet Resistance  $R_s$ , MOS Device Capacitances, routing a capacitance, Analytic Inverter Delays, Driving large Capacitive Loads, Fan-in and fan-out. VLSI Circuit Design Processes: VLSI Design Flow, MOS Layers, Stick Diagrams, Design Rules and Layout,  $2\mu m$  CMOS Design rules for wires, Contacts and Transistors Layout Diagrams for NMOS and CMOS Inverters and Gates, Scaling of MOS circuits, Limitations of Scaling.

**Module 3:**

**10 Hours**

Gate level Design: Logic gates and other complex gates, Switch logic, Alternate gate circuits. Subsystem Design: Shifters, Adders, ALUs, Multipliers, Parity generators, Comparators, Counters, VHDL Synthesis: VHDL Synthesis, Circuit Design Flow, Circuit Synthesis, Simulation

**TEXT BOOKS:**

1. Kamran Eshraghian, Eshraghian Douglas and A. Pucknell, "Essentials of VLSI circuits and systems", PHI, 2013 Edition.
2. K.Lal Kishore and V.S.V. Prabhakar, "VLSI Design", IK Publishers

**REFERENCES:** 1. Weste and Eshraghian, "Principles of CMOS VLSI Design", Pearson Education, 1999.



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

STUDENT ENROLLMENT LIST

ADD on Course Name: Basics of VLSI Design

Branch: CSE

SI NO	NAME	USN	
1	APOORVA S R	4AI14CS012	APoorVA S R
2	DEEKSHA K N	4AI14CS026	Deeksha KN
3	ABHISHEK G	4AI15CS002	Abhishek
4	CHANDANA P H	4AI15CS028	Chandana
5	KOUSHIK S D	4AI15CS051	Koushik
6	NIDHI A R	4AI15CS064	Nidhi AR
7	SIDDANTH B K	4AI15CS103	Siddhant
8	ADYA H N	4AI16CS002	Adyathan
9	AGNES SANMATHI D	4AI16CS003	Agnes Sanmathi
10	ALFIYA BANU	4AI16CS004	Alfiya Banu
11	ANANYA K V	4AI16CS006	Ananya KV
12	ANUSHA K N	4AI16CS007	Anusha KN
13	ANUVIKA A S	4AI16CS008	Anuvika AS
14	ARVIND GIRISH	4AI16CS009	Arvind
15	BABITHA B	4AI16CS011	Babitha B
16	BHAGYASHREE H D	4AI16CS012	Phys
17	BHOOMIKA G S	4AI16CS013	Bhoomika G.S
18	BHOOMIKA K	4AI16CS014	Bhoomika
19	BINDUSHREE C	4AI16CS015	Binodushree B.R
20	BINDUSREE B R	4AI16CS016	Binud
21	BRUNDA D	4AI16CS017	Brunda
22	CHANDANA H Y	4AI16CS018	Chandana
23	CHINMAYEE	4AI16CS019	Chinmayee
24	CHINTHANA M C	4AI16CS021	Chint
25	CHIRAG M R	4AI16CS022	Chirag
26	DEEPAK N R	4AI16CS023	Deepika PP
27	DEEPIKA D P	4AI16CS024	Grad Chetan
28	GADDI CHETAN	4AI16CS025	Gourav BR
29	GOURAV B R	4AI16CS026	Gadisha
30	HARSHA H K	4AI16CS027	Jayashree
31	JAYASHREE	4AI16CS028	Jeevan A.S
32	JEEVAN A S	4AI16CS029	Kalpashree Y
33	KALPASHREE Y	4AI16CS030	Karthi
34	KARTHIK N L	4AI16CS031	Kavya S
35	KAVYA S	4AI16CS032	Kavya S K
36	KAVYA S K	4AI16CS033	Kavyashree C M
37	KAVYASHREE C M	4AI16CS034	Khalil Ahmed
38	KHALEEL AHAMED	4AI16CS035	Koushik V
39	KOWSHIK V	4AI16CS036	Krutika G Nayak
40	KRUTHIKA G NAYAK	4AI16CS037	Leandra Maria
41	LEANDRA MARIA MENDON	4AI16CS038	Nani
42	MANISHA P BEERIAH	4AI16CS040	Meghana D.Y
43	MEGHANA D Y	4AI16CS042	Mohammed
44	MOHAMMED NIHAL KHAN	4AI16CS043	Namitha
45	MOUNA J	4AI16CS044	Namitha (MTC)
46	NAMITHA M TAPSE	4AI16CS046	
47			



	NAVEEN P PARVATHANENI	4AI16CS047	Naveen
48	NAYANA K S	4AI16CS048	Nayana
49	NESARA B R	4AI16CS049	Nesara B R
50	NISCHITHA K S	4AI16CS051	Nischitha K S
51	NISHANTH K R	4AI16CS052	Nishanth
52	NISWARTH V SHETTY	4AI16CS053	Niswarth Shetty
53	P PRADEEP KUMAR	4AI16CS054	Pradeep Kumar
54	POOJA B R	4AI16CS055	Pooja B R
55	POOJA B S	4AI16CS056	Pooja B.S
56	POOJA N K	4AI16CS057	Pooja NK
57	POOJA S	4AI16CS058	Pooja
58	POORNIMA C L	4AI16CS059	Poornima
59	RACHANA N VANAGUR	4AI16CS062	Rachana
60	RAHUL A	4AI16CS063	Rahul A
61	RAHUL S	4AI16CS064	Rahul S
62	POOJA C P	4AI16CS127	Pooja CP
63	ALFIYA SHAIK	4AI16CS130	Alfiya
64	AMBIKA D P	4AI17CS400	Ambika D P
65	SHASHIKALA S	4AI17CS407	Shashikala S
66	VIJETHA B S	4AI17CS409	Vijetha B.S
67	SHREYA B R	4AI16CS085	Shreya B.R
68	SHRIKARAN C N	4AI16CS086	Shrikaran CN
69	SHRUTHA R JAIN	4AI16CS087	Shrutha
70	SIDDESH P	4AI16CS088	Siddesh P
71	SINCHANA S B	4AI16CS089	Sinchana S B
72	SINCHANA S GOWDA	4AI16CS090	Sinchana S Gowda
73	SNEHA K	4AI16CS091	Sneha K
74	SOUMYA H	4AI16CS092	Soumya H
75	SOUNDARYA GOGATE T S	4AI16CS093	Soundarya
76	SOURAB SAKLECHA	4AI16CS094	Sourab HP
77	SOWMYA M	4AI16CS095	Sowmya M
78	SPANDANA H P	4AI16CS096	Spandana S
79	SPANDANA S	4AI16CS097	Spandana S
80	SPARSHA B R	4AI16CS098	Sparsha B R
81	SPOORTHI A N	4AI16CS099	Spoorthi AN
82	SRISTI BAGAMANE	4AI16CS100	Sristi Bagamane
83	SRUSTI R B S	4AI16CS101	Srusti
84	SUMANTHA M K	4AI16CS102	Sumantha M K
85	SUPRITH K	4AI16CS103	Suprith K
86	SUPRIYA S K	4AI16CS104	Supriya S K
87	VAISHNAVI C O	4AI16CS114	Vaishnavi CO
88	VAISHNAVI RAO	4AI16CS115	Vaishnavi

Course Instructor Signature

Professor and H.O.D.  
HOD Signature  
Department of Computer Science and Engg  
Adichunchanagiri Institute of Technology,  
CHIKMAGALUR - 577102



**ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**ADD on Course Name: Basics of VLSI Design**

**Course Code : 19CS\_AC\_012**

**Branch: CSE**

Students are identified for ADD on Course Classes based on their enrolment.

ADD on Course classes will be held during 15-01-2018 to 28-01-2018 at CS&E dept from 4-6pm

**Attendance Report**

SI NO	NAME	USN	During 15-01-2018 to 28-01-2018.															Signature
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
																	Apoorva SR	
1	APOORVA S R	4AI14CS012	P	P	P	P	P	P	P	A	P	P	P	A	P	P	Deeksha SR	
2	DEEKSHA K N	4AI14CS026	P	P	A	P	P	P	P	P	A	P	P	A	P	P	Abhishek KN	
3	ABHISHEK G	4AI15CS002	P	P	A	P	P	P	P	A	P	P	P	A	P	P	Chinn	
4	CHANDANA P H	4AI15CS028	P	P	P	P	P	P	P	A	P	P	P	P	A	P	Ramesh	
5	KOUSHIK S D	4AI15CS051	P	P	P	P	A	P	P	P	P	P	P	P	P	P	Koushik SD	
6	NIDHI A R	4AI15CS064	P	P	P	P	P	P	P	P	P	P	P	A	P	P	Nidhi AR	
7	SIDDANTH B K	4AI15CS103	A	P	P	P	P	P	P	P	P	P	P	P	P	P	Siddanth BK	
8	ADYA H N	4AI16CS002	P	P	P	P	P	P	P	A	P	P	P	P	P	P	Adyathn	
9	AGNES SANMATHI D	4AI16CS003	P	P	P	P	P	P	P	P	P	P	P	P	A	P	Agnes Sanmathi D	
10	ALFIYA BANU	4AI16CS004	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Alfiya Banu	
11	ANANYA K V	4AI16CS006	P	P	P	A	P	P	P	P	P	P	P	A	P	P	Ananya KV	
12	ANUSHA K N	4AI16CS007	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Anusha KN	
13	ANUVIKA A S	4AI16CS008	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Anuvika AS	
14	ARVIND GIRISH	4AI16CS009	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Arvind Girish	
15	BABITHA B	4AI16CS011	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Babitha B	
16	BHAGYASHREE H D	4AI16CS012	P	P	P	P	P	P	P	P	A	P	P	P	P	P	Bhagya H D	
17	BHOOMIKA G S	4AI16CS013	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Bhoomika GS	
18	BHOOMIKA K	4AI16CS014	P	P	P	A	P	P	P	P	P	P	P	P	P	P	Bhoomika K	
19	BINDUSHREE C	4AI16CS015	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Bindushree C	
20	BINDUSREE B R	4AI16CS016	P	P	P	P	P	P	A	P	P	P	P	P	P	P	Bindusree BR	
21	BRUNDA D	4AI16CS017	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Brunda D	
22	CHANDANA H Y	4AI16CS018	P	P	P	P	P	P	P	P	P	P	P	A	P	P	Chandana HY	
23	CHINMAYEE	4AI16CS019	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Chinmayee	
24	CHINTHANA M C ✓	4AI16CS021	P	P	P	P	P	P	P	A	P	P	P	P	P	P	Chinthana MC	
25	CHIRAG M R	4AI16CS022	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Chirag MR	
26	DEEPAK N R	4AI16CS023	P	A	P	P	P	P	P	P	P	P	P	P	P	P	Deepak NR	
27	DEEPIKA D P	4AI16CS024	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Deepika DP	
28	GADDI CHETAN	4AI16CS025	P	P	P	P	P	P	P	P	P	P	P	A	P	P	Gaddi Chetan	
29	GOURAV B R	4AI16CS026	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Gourav BR	
30	HARSHA H K	4AI16CS027	P	P	P	P	A	P	P	P	P	P	P	P	P	P	Harsha HK	
31	JAYASHREE	4AI16CS028	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Jayashree	
32	JEEVAN A S	4AI16CS029	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Jeevan AS	
33	KALPASHREE Y ✓	4AI16CS030	P	P	A	P	P	P	P	P	P	P	P	P	P	P	Kalpashree Y	
34	KARTHIK N L	4AI16CS031	P	P	P	P	P	P	P	P	P	P	P	A	P	P	Karthik NL	
35	KAVYA S	4AI16CS032	P	P	P	P	P	P	P	A	P	P	P	P	P	P	Kavya S	
36	KAVYA S K	4AI16CS033	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Kavya SK	
37	KAVYASHREE C M	4AI16CS034	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Kavyashree CM	
38	KHALEEL AHAMED	4AI16CS035	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Khaleel Ahmed	







ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU-577102.  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Add-On Course on "Basics of VLSI Design"

OVER ALL Add-On Course PARTICIPANTS FEEDBACK

Sl.No	DESCRIPTION	EXCELLENT	GOOD	POOR
1	How would you rate the presenter's knowledge on the concept?	✓		
2	How would you rate the concepts and Information provided by the Presenter?	✓		
3	What was your overall impression of the session?	✓		
4	Remarks	—		

  
Signature of the Participants



||Jai Sri Gurudev||

Sri Adichunchanagiri Shikshana Trust (R)

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY

CHIKKAMAGALURU - 577 102



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



Certificate of Participation

*This is to certify that CHANDANA H Y has successfully completed the add on course on "Basics of VLSI Design" from 15-01-2018 to 28-01-2018 organized by Department of Computer Science and Engineering.*

Prof. S J Prashantha  
Staff co-ordinator

Prof. Vivekananda  
Staff co-ordinator

Dr. Pushpa Ravikiran  
H.O.D Institute of Technology  
Chikkamagaluru - 577102





||Jai Sri Gurudev||

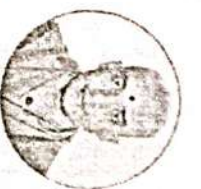
Sri Adichunchanagiri Shikshana Trust (R)

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY

CHIKKAMAGALURU - 577 102



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



Certificate of Participation

*This is to certify that SPANDANA S has successfully completed the add on course on "Basics of VLSI Design" from 15-01-2018 to 28-01-2018 organized by Department of Computer Science and Engineering.*

Prof. S J Prashantha  
Staff co-ordinator

Prof. Vivekananda  
Staff co-ordinator

Dr. P. Shripa Rayikumar  
H.O.D.  
Department of Computer Science and Engineering  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALURU - 577 102





10) A fast circuit requires \_\_\_\_\_  
a) high gm                      b) low gm  
c) does not depend on gm    d) low cost

11) Surface mobility depends on \_\_\_\_\_  
a) effective drain voltage    b) effective gate voltage  
c) channel length              d) effective source voltage

12) What is a MOS transistor?  
a) minority carrier device      b) majority carrier device  
c) majority & minority carrier device    d) none of the mentioned

13) The MOS transistor is non conducting when?  
a) zero source bias              b) zero threshold voltage  
c) zero gate bias                d) zero drain bias

14) Gate logic is also called as  
a) transistor logic                b) switch logic  
c) complementary logic          d) restoring logic

15) Both NAND and NOR gates can be used in gate logic.  
a) true                      b) false

16) The CMOS inverter has \_\_\_\_\_ power dissipation.  
a) low                      b) more                      c) no                      d) very less

17) As the number of inputs increases, the NAND gate delay  
a) increases    b) decreases    c) does not vary    d) exponentially decreases

18) NAND gate delay can be given as  
a)  $T_{int}$     b)  $T_{int}/n$     c)  $n * T_{int}$     d)  $2n * T_{int}$

19) In CMOS NAND gate, p transistors are connected in  
a) series    b) parallel    c) cascade    d) random

20) BiCMOS is used for \_\_\_\_\_ fan-out.  
a) less    b) more    c) no    d) very less

21) Which can handle high capacitance load?  
a) NAND    b) nMOS NAND    c) CMOS NAND    d) BiCMOS NAND

22) Which among the following is a process of transforming design entry information of the circuit into a set of logic equations?  
a) Simulation    b) Optimization    c) Synthesis    d. Verification

23) \_\_\_\_\_ is the fundamental architecture block or element of a target PLD.  
a) System Partitioning    b) Pre-layout Simulation  
c) Logic cell                      d) Post-layout Simulation

24) In VLSI design, which process deals with the determination of resistance & capacitance of interconnections?

- a) Floor planning                      b) Placement & routing  
 c) Testing                                      d) Extraction

25) In Net-list language, the net-list is generated \_\_\_\_\_ synthesizing VHDL code.

- a) Before                      b) At the time of (during)  
 c) After                      d) None of the above

26) In VHDL, which object/s is/are used to connect entities together for the model formation?

- a) Constant                      b) Variable  
 c) Signal                      d) All of the above

27) Which data type in VHDL is non synthesizable & allows the designer to model the objects of dynamic nature?

- a) Scalar                       b) Access                      c) Composite                      d) File

28) Which type of simulation mode is used to check the timing performance of a design?

- a) Behavioral                      b) Switch-level                      c) Transistor-level                      d) Gate-level

29) In the simulation process, which step specifies the conversion of VHDL intermediate code so that it can be used by the simulator?

- a) Compilation                       b) Elaboration                      c) Initialization                      d) Execution

30) Which type of simulator/s neglect/s the intra-cycle state transitions by checking the status of target signals periodically irrespective of any events?

- a) Event-driven Simulator                       b) Cycle-based Simulator  
 c) Both a and b                      d) None of the above

31) Which among the following is not a characteristic of 'Event-driven Simulator'?

- a) Identification of timing violations                      b) Storage of state values & time information  
 c) Time delay calculation                      d) No event scheduling

32) which among the following is an output generated by synthesis process?

- a) Attributes & Library                      b) RTL VHDL description  
 c) Circuit constraints                       d) Gate-level net list

33) Register transfer level description specifies all of the registers in a design & \_\_\_\_\_ logic between them.

- a) Sequential                      b) Combinational                      c) Both a and b                      d) None of the above

34) Which attribute in synthesis process specifies the resistance by controlling the quantity of current it can source?

- a) Load attribute                       b) Drive attribute                      c) Arrival time attribute                      d) All of the above



35) Which type of digital systems exhibit the necessity for the existence of at least one feedback path from output to input?

- a) Combinational System      b) Sequential system  
c) Both a and b                  d) None of the above

36) The time required for an input data to settle \_\_\_\_\_ the triggering edge of clock is known as 'Setup Time'.

- a) Before      ~~b) During~~      c) After      d) All of the above

37) Hold time is defined as the time required for the data to \_\_\_\_\_ after the triggering edge of clock.

- a) Increase      b) Decrease      c) Remain stable      d) All of the above

38) An Antifuse programming technology is predominantly associated with \_\_\_\_\_.

- a) SPLDs      b) FPGAs      ~~c) CPLDs~~      d) All of the above

39) In fusible link technologies, the undesired fuses are removed by the pulse application of \_\_\_\_\_ voltage & current to device input.

- a) Low      b) Moderate      ~~c) High~~      d) All of the above

40) Which programming technologies is/are predominantly associated with SPLDs and CPLDs?

- ~~a) EPROM~~      b) EEPROM      c) FLASH      d) All of the above

41) Before the commencement of design, the clocking strategy determine/s \_\_\_\_\_

- a) Number of clock signals necessary for routing throughout the chip  
b) Number of transistors used per storage requirement  
c) Power dissipated by chip & the size of chip  
~~d) All of the above~~

42) Which method/s of physical clocking is/are a /the recursive structure where the memory elements are grouped together to make the use of nearby or same distribution points?

- ~~a) H tree~~                      b) balanced tree clock network  
c) Both a and b              d) None of the above

43) Increase in the physical distance of H-tree \_\_\_\_\_ the skew rate.

- a) Increases      b) Stabilizes      ~~c) Decreases~~      d) All of the above

44) Which type of MOSFET exhibits no current at zero gate voltage?

- a) Depletion MOSFET      ~~b) Enhancement MOSFET~~  
c) Both a and b              d) None of the above

45) In enhancement MOSFET, the magnitude of output current \_\_\_\_\_ due to an increase in the magnitude of gate potentials.

- ~~a) Increases~~      b) Remains constant      c) Decreases      d) None of the above

46) After an initialization phase, the simulator enters the \_\_\_\_\_ phase.

- ~~a) Compilation~~      b) Elaboration      ~~c) Execution~~      d) None of the above

47) In DIBL, which among the following is/are regarded as the source/s of leakage?  
a) Subthreshold conduction   b) Gate leakage   c) Junction leakage   d) All of the above

48) Which among the following can be regarded as an/the application/s of MOS switch in an IC design?

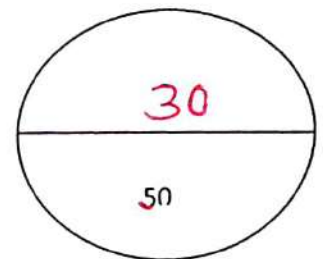
- a) Multiplexing & Modulation   b) Transmission gate in digital circuits  
c) Simulation of a resistor   d) All of the above

49) Which among the following is/are regarded as an/the active resistor/s?

- a) MOS diode   b) MOS transistor   c) MOS switch   d. All of the above

50) In testability, which terminology is used to represent or indicate the formal evidences of correctness?

- a. Validation   b. Verification   c. Simulation   d. Integration



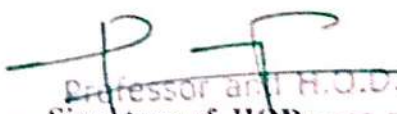


**ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  
**ADD ON COURSE: "Basics of VLSI design"**

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**Toppers List**

Sl.No	Student Name	Student USN	Marks Obtained
1	SOURAB SAKLECHA	4A116CS094	30
2	KALPASHREE Y	4A116CS030	28
3	KAVYASHREE C M	4A116CS034	25

  
Professor and H.O.D.  
Signature of HOD  
Department of Computer Science and Engg  
Adichunchanagiri Institute of Technology  
CHIKMAGALUR - 577102

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY CHIKKAMAGALURU

Department of Computer Science & Engineering

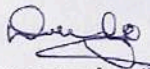
## Summary Report

The course "Basics of VLSI Design" was conducted at CS&E Dept from 15/01/2018 to 28/01/2018.

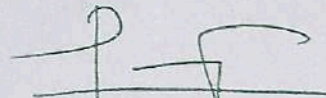
This course helps the students to understand how VLSI affords IC designers the ability to design utilizing less space. Typically, electronic circuits incorporate a CPU, RAM, ROM, and other peripherals on a single PCBA. However, very large-scale integration (VLSI) technology affords an IC designer the ability to add all of these into one chip

### Course Outcomes

- To learn basic CMOS Circuits.
- To learn CMOS process technology
- To learn techniques of chip design using programmable devices.
- To learn the concepts of designing VLSI Subsystems.



Instructor's Signature



HOD's Signature

Professor and H.O.D.

Department of Computer Science and Engg.

Adichunchanagiri Institute of Technology

CHIKKAMAGALURU - 577102



**ADD on Program**  
**On**  
**“Deep Learning :AI”**



**ADD-ON Course**  
On  
**"DEEP LEARNING:AI"**



Organized by,  
Department of Computer Science  
and Engineering,  
Adichunchanagiri Institute of  
Technology,  
Chikmagalur – 577102  
Karnataka, India  
[www.aitchikmagalur.ac.in](http://www.aitchikmagalur.ac.in)

**About the College:**

Adichunchanagiri Institute of Technology (AIT) was established in the year 1980 under the auspicious of Adichunchanagiri Shikshana Trust(R) with the blessings of Bhairavaikya Jagadguru Padmabhushana Sri Sri Sri Dr. Balagangadharanatha Mahaswamiji to provide technical and other professional education in the rural area of Chikmagalur, the land of Coffee. With the blessings of Jagadguru Sri Sri Sri, Nirmalanandanatha Swamiji, AIT is imparting the quality education in Engineering and Management with ethical and spiritual values. The engineering departments have

recognized as research centers under VTU. The college has well equipped laboratory facilities and highly qualified and experienced faculty. The Institute is providing good training for students to excel in academics as well as in industry requirements and aims towards 100% placements to give a better future for students.

**About the Department:**

The Department of Computer Science and Engineering is established in the year 1986. It was earlier affiliated to the Mysore University later to the Kuvempu University and at present, it is affiliated to Visvesvaraya Technological University, Belagavi. The alumni of the department are working in various reputed organizations in India and abroad. The department is accredited twice by National Broad of Accreditation, New Delhi.

The department offers UG, PG Courses with an intake of 120 and 18 respectively and facilitates R&D through VTU recognized research center. The department has received funds from various reputed agencies like AICTE, VGST, KSCST, ISRO, ISTE, etc., for its activities.

**Objectives of the Course:**

Competence in technical writing holds great importance in the present era. Technical writing deals with specific knowledge, generally in the sphere of science and technology, and may be used in a wide variety of media: journal papers, thesis, project proposals, and other technical documents. DEEP LEARNING AI is a document typesetting system that is used to produce high quality scientific documents, like articles, books, dissertations, technical reports, etc. Expertise in drafting technical documents is an indispensable skill for all professionals for it helps them to share their knowledge of technical subjects effectively in all domains of society and thus makes them competent in their professional careers

**Resource Person:**

Dr. Adarsh M J.  
Associate Professor  
Dept of CS&E, AIT, Chikkamagaluru

**Convenor:**

Dr Pushpa Ravi kumar, Professor and Head, Dept. of CS&E.

**Coordinator:**

Mr. S J Prashanth, Asst Professor,  
Dept. CS&E, AIT, Chikkamagaluru





|| Jai Sri Gurudev ||



**SRI ADICHUNCHANAGIRI SHIKSHANA TRUST ®  
ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY,  
CHIKKAMAGALURU**

P.B No.91, Adichunchanagiri Extension, Chikkamagaluru-577 102, Karnataka, India.

Ref: AIT/IQAC/CSE/ /2018-2019

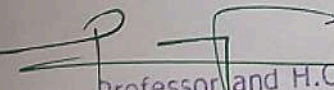
Date: 10/06/2018


**Circular**

Department of Computer Science & Engineering is conducting a Certificate Program (Add-on Program) on "Deep Learning :AI [19CS\_AC\_013] from 18-06-2018 to 02-07-2018 All other HOD's instruct the concern department students to attend the program. Following faculty member (Course instructor) is conducting a certificate program at CS&E Department.

**Course Instructor**

1. Prof. Vivekananda  
Assistant Professor  
Dept. of CS&E  
AIT Chikmagalur
2. Prof. S J Prashantha  
Assistant Professor  
Dept. of CS&E  
AIT Chikmagalur

  
Professor and H.O.D.  
HOD's Signature  
Department of Computer Science and Engg.  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALUR - 577102

  
Principal Signature  
Dr. C.T. JAYADEVA  
Principal B.E., M.Tech., Ph.D  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALURU-577102

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Add on course – 30 Hours

ADD on Course Name: Deep Learning : AI

Course Code: 19CS\_AC\_013



**Module 1:**

**10 Hours**

Basic Concepts of Machine Learning: Machine Learning Systems ,Supervised Learning , Learning Algorithms Parametric Models ,Cost functions ,Generalization ,Regularization ,Evaluation of a Binary Classifier , Confusion Matrix ,Receiver Operating, Characteristic Curve , Precision Recall Curve.

**Module 2:**

**10 Hours**

Artificial Neural Networks: Basic Concepts ,Feed forward Neural Networks ,Single-Layer Perceptron ,Multilayer Perceptron ,ANN Learning Gradient Descent Methods ,Back-propagation Algorithm ,Regularization

**Module 3:**

**10 Hours**

Convolutional Neural Networks :Convolution Operation . Convolution in Mathematic and Image Processing Convolution in Neuroscience ,Convolutional Network Architecture . Convolutional Layer . Pooling .. Batch Normalization . Main Concepts Behind CNNs . Local Receptive fields. Parameter Sharing . Popular CNN Architectures .

**TEXT BOOKS:**

1. Neural Networks and Deep learning : A Text book by Charu C.Aggarrwal 2018



**ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**ADD on Course Name: Deep Learning: AI**

**Course Code: 19CS\_AC\_013**

**Branch: CSE**

**Student Enrollment List**

SI NO	NAME	USN	SIGNATURE
1	APOORVA S R	4AI14CS012	Apoorva S R
2	DEEKSHA K N	4AI14CS026	Deeksha
3	ABHISHEK G	4AI15CS002	Abhishek
4	CHANDANA P H	4AI15CS028	Chandana
5	KOUSHIK S D	4AI15CS051	Koushik S D
6	NIDHI A R	4AI15CS064	Nidhi
7	SIDDANTH B K	4AI15CS103	Siddanth
8	ADYA H N	4AI16CS002	Adya
9	AGNES SANMATHI D	4AI16CS003	Agnes
10	ALFIYA BANU	4AI16CS004	Alfiya
11	ANANYA K V	4AI16CS006	Ananya
12	ANUSHA K N	4AI16CS007	Anusha
13	ANUVIKA A S	4AI16CS008	Anuvika
14	ARVIND GIRISH	4AI16CS009	Arvind
15	BABITHA B	4AI16CS011	Babitha
16	BHAGYASHREE H D	4AI16CS012	Bhagya
17	BHOOMIKA G S	4AI16CS013	Bhoomika
18	BHOOMIKA K	4AI16CS014	Bhomi
19	BINDUSHREE C	4AI16CS015	Bindu
20	BINDUSREE B R	4AI16CS016	Bindu B R
21	BRUNDA D	4AI16CS017	Brunda
22	CHANDANA H Y	4AI16CS018	Chandana
23	CHINMAYEE	4AI16CS019	Chinmayee
24	CHINTHANA M C	4AI16CS021	Chinthana
25	CHIRAG M R	4AI16CS022	Chirag
26	DEEPAK N R	4AI16CS023	Deepak
27	DEEPIKA D P	4AI16CS024	Deepika
28	GADDI CHETAN	4AI16CS025	Gaddi
29	GOURAV B R	4AI16CS026	Gourav
30	HARSHA H K	4AI16CS027	Harsha
31	JAYASHREE	4AI16CS028	Jayashree
32	JEEVAN A S	4AI16CS029	Jeevan
33	KALPASHREE Y	4AI16CS030	Kalpashree
34	KARTHIK N L	4AI16CS031	Karthik
35	KAVYA S	4AI16CS032	Kavya
36	KAVYA S K	4AI16CS033	Kavya S K
37	KAVYASHREE C M	4AI16CS034	Kavyashree
38	KHALEEL AHAMED	4AI16CS035	Khaleel
39	KOWSHIK V	4AI16CS036	Kowshik
40	KRUTHIKA G NAYAK	4AI16CS037	Kruthika
41	LEANDRA MARIA MENDON	4AI16CS038	Leandra







**ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**ADD on Course Name: Deep Learning :AI**

**Course Code : 19CS\_AC\_013**

**Branch: CSE**

Students are identified for ADD on Course Classes based on their enrolment.  
 ADD on Course classes will be held during 18-06-2018 to 02-07-2018 at CS&E dept  
 from 4-6pm

**Attendance Report**

SI NO	NAME	USN	During 18-06-2018 to 02-07-2018															Signature
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	APOORVA S R	4AI14CS012	P	P	P	P	P	P	P	P	P	A	P	P	P	P	Apoorva SR	
2	DEEKSHA K N	4AI14CS026	A	P	P	P	P	P	P	P	P	P	P	P	P	P	Deeksha KN	
3	ABHISHEK G	4AI15CS002	P	P	P	P	P	A	P	P	P	P	P	P	P	P	Abhishek	
4	CHANDANA P H	4AI15CS028	P	P	P	P	P	P	P	P	P	A	P	P	P	P	Chandana	
5	KOUSHIK S D	4AI15CS051	P	P	P	P	P	P	P	P	P	A	A	P	P	P	Koushik SD	
6	NIDHI A R	4AI15CS064	P	P	P	P	P	P	P	P	P	A	A	P	P	P	Nidhi AR	
7	SIDDANTH B K	4AI15CS103	P	P	P	P	P	P	A	A	A	P	P	P	P	P	Siddanth BK	
8	ADYA H N	4AI16CS002	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Adya HN	
9	AGNES SANMATHI D	4AI16CS003	P	P	P	P	P	P	A	A	P	P	P	P	P	P	Agnes Sanmathi D	
10	ALFIYA BANU	4AI16CS004	P	P	P	P	A	P	P	P	P	P	P	P	P	P	Alfiya Banu	
11	ANANYA K V	4AI16CS006	P	A	P	A	P	P	P	P	P	P	A	P	P	P	Ananya KV	
12	ANUSHA K N	4AI16CS007	P	P	P	P	P	A	A	A	A	P	P	P	P	P	Anusha KN	
13	ANUVIKA A S	4AI16CS008	P	A	A	P	P	P	A	P	P	P	P	P	P	P	Anuvika AS	
14	ARVIND GIRISH	4AI16CS009	P	P	P	P	P	P	P	P	P	P	A	A	P	A	Arvind Girish	
15	BABITHA B	4AI16CS011	P	P	A	A	P	P	P	P	P	A	P	P	P	P	Babitha B	
16	BHAGYASHREE H D	4AI16CS012	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Bhagya HD	
17	BHOOMIKA G S	4AI16CS013	P	P	P	P	P	P	A	A	A	P	P	P	P	P	Bhoomika GS	
18	BHOOMIKA K	4AI16CS014	P	P	P	P	P	A	P	P	P	P	P	P	P	P	Bhoomika K	
19	BINDUSHREE C	4AI16CS015	P	P	P	P	P	P	P	P	A	P	P	P	A	P	Bindushree C	
20	BINDUSREE B R	4AI16CS016	P	P	P	P	P	A	P	P	P	P	P	P	P	P	Bindusree BR	
21	BRUNDA D	4AI16CS017	P	P	P	P	P	A	A	P	P	P	P	P	P	P	Brunda D	
22	CHANDANA H Y	4AI16CS018	A	A	A	P	P	P	A	P	P	P	P	P	P	P	Chandana HY	
23	CHINMAYEE	4AI16CS019	P	P	P	A	P	P	A	P	P	P	A	P	P	P	Chinmayee	
24	CHINTHANA M C	4AI16CS021	A	A	P	P	P	P	P	P	P	A	P	P	P	P	Chinthana MC	
25	CHIRAG M R	4AI16CS022	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Chirag MR	
26	DEEPAK N R	4AI16CS023	P	P	P	P	P	P	P	P	P	P	P	A	P	P	Deepak NR	
27	DEEPIKA D P	4AI16CS024	P	A	P	P	A	P	P	P	P	P	P	A	P	P	Deepika DP	
28	GADDI CHETAN	4AI16CS025	P	P	A	P	P	A	P	P	P	P	P	P	P	P	Gaddi Chetan	
29	GOURAV B R	4AI16CS026	P	P	A	P	P	P	P	P	P	P	P	P	P	P	Gourav BR	
30	HARSHA H K	4AI16CS027	P	P	P	P	P	P	P	P	P	P	A	P	P	P	Harsha HK	
31	JAYASHREE	4AI16CS028	P	A	P	P	P	P	P	P	P	P	P	P	P	A	Jayashree	
32	JEEVAN A S	4AI16CS029	P	A	P	P	P	P	P	P	P	P	P	P	P	P	Jeevan AS	
33	KALPASHREE Y	4AI16CS030	P	P	P	P	P	P	P	P	A	P	P	P	P	P	Kalpashree Y	
34	KARTHIK N L	4AI16CS031	P	A	P	P	P	P	P	P	P	P	P	P	P	P	Karthik NL	
35	KAVYA S	4AI16CS032	P	A	P	P	P	P	P	P	P	P	P	P	P	P	Kavya S	
36	KAVYA S K	4AI16CS033	P	P	P	P	A	P	P	P	P	P	P	P	P	P	Kavya SK	
37	KAVYASHREE C M	4AI16CS034	P	P	P	P	P	A	A	P	P	P	P	P	P	P	Kavyashree CM	
38	KHALEEL AHAMED	4AI16CS035	P	P	A	P	P	P	P	P	P	P	P	A	P	P	Khaleel Ahmed	







ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING


ADD ON COURSE NAME: DEEP LEARNING: AI

COURSE CODE: 19CS\_AC\_013

ASSESSMENT QUESTIONS

LIST OF TOPPERS

SLNo	Name of the Student	USN	Marks Scored
1	Vaishnavi C O	4AI16CS114	50
2	Sumantha M K	4AI16CS102	49
3	Sristi Bagamane	4AI16CS100	48



Signature of the H.O.D  
Professor and H.O.D.

Department of Computer Science and Engg.  
Adichunchanagiri Institute of Technology  
CHIKMAGALUR - 577 102



||Jai Sri Gurudev||

Sri Adichunchanagiri Shikshana Trust (R)



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY

CHIKKAMAGALURU - 577 102



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



Certificate of Participation

*This is to certify that POOJA B R has successfully completed the add on course on "Deep Learning :AI" from 18-06-2018 to 02-07-2018 organized by Department of Computer Science and Engineering.*

Prof. S J Prashantha  
Staff co-ordinator

Prof. Vivekananda  
Staff co-ordinator

Professor and H.O.D.  
Department of Computer Science and Engineering  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALURU - 577102



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

ADD ON COURSE NAME: DEEP LEARNING: AI

COURSE CODE: 19CS\_AC\_013

ASSESSMENT QUESTIONS

35  
50

Name of the Student: Apoorva S.R

Max Marks: 50

USN: HAI1HCS012

1. Which of the following is a subset of machine learning?

- A. Numpy   B. SciPy    C. Deep Learning   D. All of the above

2. How many layers Deep learning algorithms are constructed?

- A. 2    B. 3   C. 4   D. 5

3. The first layer is called the?

- A. inner layer   B. outer layer   C. hidden layer   D. None of the above

4. RNNs stands for?

- A. Receives neural networks   B. Report neural networks  
C. Recording neural networks    D. Recurrent neural networks

5. Which of the following is/are Common uses of RNNs?

- A. Businesses Help securities traders to generate analytic reports  
 B. Detect fraudulent credit-card transaction  
C. Provide a caption for images  
D. All of the above

6. CNN is mostly used when there is an?

- A. structured data    B. unstructured data   C. Both A and B   D. None of the above

7. Which neural network has only one hidden layer between the input and output?

- A. Shallow neural network    B. Deep neural network  
C. Feed-forward neural networks   D. Recurrent neural networks

8. Deep learning algorithms are \_\_\_\_\_ more accurate than machine learning algorithm in image classification  
 A. 33% B. 37% C. 40% ~~D. 41%~~ |
9. In which of the following applications can we use deep learning to solve the problem?  
 A. Protein structure prediction B. Prediction of chemical reactions  
 C. Detection of exotic particles ~~D. All of the above~~ |
10. The number of nodes in the input layer is 10 and the hidden layer is 5. The maximum number of connections from the input layer to the hidden layer are  
 A. 50 B. less than 50 ~~C. more than 50~~ D. It is an arbitrary value ○
11. The input image has been converted into a matrix of size 28 X 28 and a kernel/filter of size 7 X 7 with a stride of 1. What will be the size of the convoluted matrix?  
 A. 20x20 ~~B. 21x21~~ C. 22x22 D. 25x25 ○
12. In a simple MLP model with 8 neurons in the input layer, 5 neurons in the hidden layer and 1 neuron in the output layer. What is the size of the weight matrices between hidden output layer and input hidden layer?  
 A. [1 X 5], [5 X 8] ~~B. [5 X 1], [8 X 5]~~ C. [8 X 5], [5 X 1] D. [8 X 5], [1 X 5] |
13. Which of the following functions can be used as an activation function in the output layer if we wish to predict the probabilities of n classes ( $p_1, p_2, \dots, p_k$ ) such that sum of p over all n equals to 1?  
~~A. Softmax~~ B. ReLu C. Sigmoid D. Tanh |
14. Assume a simple MLP model with 3 neurons and inputs= 1,2,3. The weights to the input neurons are 4,5 and 6 respectively. Assume the activation function is a linear constant value of 3. What will be the output?  
 A. 32 B. 64 ~~C. 96~~ D. 128 |
15. Sentiment analysis using Deep Learning is a many-to one prediction task. ○ |  
~~A. True~~ B. False C. Can be true and false D. can not say
16. In CNN, having max pooling always decrease the parameters? |  
 A. True ~~B. False~~ C. Can be true and false D. cannot say
17. When an experienced deep learning engineer works on a new problem, they can usually use insight from previous problems to train a good model on the first try, without needing to iterate multiple times through different models.? |  
~~A. True~~ B. False



18. Which of the factors affect the performance of learner system does not include?

- a) Representation scheme used      b) Training scenario  
c) Type of feedback      ~~d) Good data structures~~      0

19. Different learning methods does not include?

- a) Memorization      ~~b) Analogy~~      c) Deduction      d) Introduction      1

20. In language understanding, the levels of knowledge that does not include?

- a) Phonological      b) Syntactic      ~~c) Empirical~~      d) Logical      1

21. A model of language consists of the categories which does not include?

- a) Language units      b) Role structure of units      ~~c) System constraints~~      d) Structural units      0

22. Among the following which is not a horn clause?

- a) p      ~~b)  $\neg p \vee q$~~       c)  $p \rightarrow q$       d)  $p \rightarrow \neg q$       0

23. Type of matrix decomposition model is \_\_\_\_\_

- A. predictive model      ~~B. descriptive model~~      C. logical model      D. None      1

24. PCA is \_\_\_\_\_

- ~~A. backward feature selection~~      B. forward feature selection.  
C. feature extraction      D. None of these      0

25. Supervised learning and unsupervised clustering both require which is correct according to the statement.

- ~~A. input attribute~~      B. hidden attribute      C. output attribute      D. categorical attribute      1

26. Following are the types of supervised learning \_\_\_\_\_

- A. Regression      B. classification      C. subgroup discovery      ~~D. All of above~~      1

27. A feature F1 can take certain value: A, B, C, D, E, & F and represents grade of students from a college. Here feature type is \_\_\_\_\_

- ~~A. Ordinal~~      B. nominal      C. categorical      D. Boolean      0

28. Following is powerful distance metrics used by Geometric model \_\_\_\_\_

- A. Manhattan distance      B. Euclidean distance      ~~C. All of above~~      D. None of above      0

29. The output of training process in machine learning is \_\_\_\_\_

- A. Machine learning algorithm.      ~~B. Machine learning model~~      C. Null      D. accuracy      1

30. Which of the following is a good test dataset characteristic?

- A. is representative of the dataset as a whole
- B. large enough to yield meaningful results
- C. All of above
- D. None of above

31. Which of the following techniques would perform better for reducing dimensions of a data set?

- A. removing columns which have high variance in data
- B. removing columns which have too many missing value
- C. removing columns with dissimilar data trends
- D. None of the above

32. You are given reviews of few Netflix series marked as positive, negative and neutral. Classifying reviews of a new Netflix series is an example of \_\_\_\_\_

- A. unsupervised learning
- B. supervised learning
- C. semi supervised learning
- D. reinforcement learning

33. Like the probabilistic view, the \_\_\_\_\_ view allows us to associate a probability of membership with each classification

- A. Deductive
- B. exemplar
- C. classical
- D. inductive

34. Database query is used to uncover this type of knowledge.

- A. Hidden
- B. shallow
- C. Deep
- D. multidimensional

35. Data used to build a data mining model.

- A. Training data
- B. hidden data
- C. test data
- D. validation data

36. If machine learning model output doesn't involves target variable then that model is called as \_\_\_\_\_

- A. predictive model
- B. descriptive model
- C. reinforcement learning
- D. all of the above

37. In the example of predicting number of babies based on stork's population, Number of babies is \_\_\_\_\_

- A. feature
- B. observation
- C. outcome
- D. attribute

38. Following are the descriptive models \_\_\_\_\_

- A. Classification
- B. clustering
- C. association rule
- D. Both 1 and 2

39. What does dimensionality reduction reduce?

- A. Collinearity
- B. stochastic
- C. entropy
- D. performance



40. Which of the following is the best machine learning method?

- A. Accuracy    B. scalable    C. fast     D. All of above

41. In multiclass classification number of classes must be \_\_\_\_\_

- A. Equals to two    B. less than two     C. greater than two    D. None

42. Which of the following can only be used when training data are linearly separable?

- A. linear logistic regression     B. linear hard-margin svm  
C. linear soft margin svm    D. parzen windows

43. Impact of high variance on the training set?

- A. underfitting     B. overfitting    C. both underfitting & overfitting    D. depends upon the dataset

44. The effectiveness of an SVM depends upon \_\_\_\_\_

- A. kernel parameters     B. selection of kernel    C. soft margin parameter    D. All of the above

45. Feature can be used as a \_\_\_\_\_

- A. predictor    B. binary split    C. All of above    D. None of above

46. Which of the following evaluation metrics can not be applied in case of logistic regression output to compare with target?

- A. Accuracy    B. auc-roc    C. logloss     D. mean-squared-error

47. A measurable property or parameter of the data-set is \_\_\_\_\_

- A. training data    B. test data     C. feature    D. validation data

48. Support Vector Machine is \_\_\_\_\_

- A. geometric model    B. probabilistic model    C. logical model    D. none

49. Imagine a Newly-Born starts to learn walking. It will try to find a suitable policy to learn walking after repeated falling and getting up. Specify what type of machine learning is best suited?

- A. Regression    B. means algorithm     C. reinforcement learning    D. None

50. Different learning methods does not include?

- A. Deduction    B. memorization    C. analogy     D. Introduction

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU-577102.  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Add-On Course on "Deep Learning :AI"

OVER ALL Add-On Course PARTICIPANTS FEEDBACK

Sl.No	DESCRIPTION	EXCELLENT	GOOD	POOR
1	How would you rate the presenter's knowledge on the concept?	✓		
2	How would you rate the concepts and Information provided by the Presenter?	✓		
3	What was your overall impression of the session?			✓
4	Remarks	Got some knowledge after attending the session.		

MAAS  
Signature of the Participants



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY CHIKKAMAGALURU

Department of Computer Science & Engineering

## Summary Report

The course "Deep Learning:AI" was conducted at CS&E Dept from 18/06/2018 to 02/07/2018.

The main objective of this course is to make students comfortable with tools and techniques required in handling large amounts of datasets. They will also uncover various deep learning methods in NLP, Neural Networks etc. Several libraries and datasets publicly available will be used to illustrate the application of these algorithms. This will help students in developing skills required to gain experience of doing independent research and study.

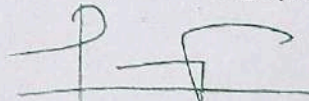
### Course Outcomes

Students are able to

- Understand the informed and uninformed problem types and apply search strategies to solve them.
- Apply difficult real life problems in a state space representation so as to solve them using AI techniques like searching and game playing.
- Design and evaluate intelligent expert models for perception and prediction from intelligent environment.
- Formulate valid solutions for problems involving uncertain inputs or outcomes by using decision making techniques.
- Demonstrate and enrich knowledge to select and apply AI tools to synthesize information and develop models within constraints of application area.
- Examine the issues involved in knowledge bases, reasoning systems and planning



Instructor's Signature



HOD's Signature .

Professor and H.O.D.  
Department of Computer Science and Engineering  
Adichunchanagiri Institute of Technology  
CHIKMAGALUR - 577102

ADD ON COURSE

ON

**“BASICS OF SOFTWARE TESTING”**





**ADD-ON Course**

On

**“Basics of Software Testing”**



Organized by,

**Department of Computer Science  
and Engineering.**

**Adichunchanagiri Institute of  
Technology,**

**Chikmagalur – 577102**

**Karnataka, India**

**[www.aitchikmagalur.ac.in](http://www.aitchikmagalur.ac.in)**

**About the College:**

**Adichunchanagiri Institute of  
Technology (AIT)** was established in  
the year 1980 under the auspicious  
of **Adhichunchanagiri Shikshana  
Trust(R)** with the blessings of  
**Bhairavaikya Jagadguru**

**Padmabhushana Sri Sri Sri Dr.  
Balagangadharanatha**

**Mahaswamiji** to provide technical  
and other professional education in the  
rural area of Chikmagalur, the land of  
Coffee. With the blessings of  
**Jagadguru Sri. Sri. Sri.**  
**Nirmalanandanatha Swamiji**, AIT is  
imparting the quality education in  
Engineering and Management with  
ethical and spiritual values. The  
engineering departments have

recognized as research centers under  
VTU. The college has well equipped  
laboratory facilities and highly  
qualified and experienced faculty. The  
Institute is providing good training for  
students to excel in academics as well  
as in industry requirements and aims  
towards 100% placements to give a  
better future for students.

**About the Department:**

The Department of Computer Science  
and Engineering is established in the  
year 1986. It was earlier affiliated to  
the Mysore University later to the  
Kuvempu University and at present, it  
is affiliated to Visvesvaraya  
Technological University, Belagavi.  
The alumni of the department are  
working in various reputed  
organizations in India and abroad. The  
department is accredited twice by  
National Broad of Accreditation, New  
Delhi.

The department offers UG, PG  
Courses with an intake of 120 and 18  
respectively and facilitates R&D  
through VTU recognized research  
center. The department has received  
funds from various reputed agencies  
like AICTE, VGST, KSCST, ISRO,  
ISTE, etc., for its activities.

**Objectives of the Course:**

**Software Testing** is a method to  
check whether the actual software  
product matches expected  
requirements and to ensure that  
software product is Defect free. It  
involves execution of software/system  
components using manual or  
automated tools to evaluate one or  
more properties of interest. The  
purpose of software testing is to  
identify errors, gaps or missing  
requirements in contrast to actual  
requirements.

Software testing definition as a White  
Box and Black Box Testing. In simple  
terms, Software Testing means the  
Verification of Application under Test  
(AUT). This Software Testing course  
introduces testing software to the  
audience and justifies the importance  
of software testing.

**Resource Person:**

**Mr. CHETHAN P J**

**Assistant Professor**

**Dept of CS&E, AIT, Chikmagalur**

**Convenor:**

**Dr Pushpa Ravi Kumar, Professor and  
Head, Dept. of CS&E.**

**Coordinator:**

**Mr. Gopinath C B, Asst Professor,**

**Dept. CS&E, AIT, Chikmagalur**

**ADICHUNCHANGIRI INSTITUTE OF TECHNOLOGY CHIKKAMAGALURU-577102**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

ADD-ON Course – Basics of Software Testing

**Student Enrollment List**

S.NO	USN	Student Name
1	4AI16CS041	M D ZAHID HUSSAIN
2	4AI16CS069	ROHITH KUMAR SINGH
3	4AI17CS062	POOJA H B
4	4AI17CS063	POOJA K R
5	4AI17CS064	PRAGATHI HEBBAR KM
6	4AI17CS065	PRAJWALA D E
7	4AI17CS066	PRAJWAL M D
8	4AI17CS069	PREETHI N U
9	4AI17CS070	PRERANA M V
10	4AI17CS071	PRIYANKA T M
11	4AI17CS072	RAHUL PRABHU K
12	4AI17CS074	RAKSHITH H D
13	4AI17CS075	RANJANA A
14	4AI17CS076	ROHITH VINOD HUKKIERI
15	4AI17CS077	SADHANA P. HEBBAR
16	4AI17CS078	SAHANA M N
18	4AI17CS080	SANJAN R
19	4AI17CS081	SANJANA S
20	4AI17CS082	SANJITHA P
21	4AI17CS083	SHANMUKHA G C
22	4AI17CS084	SHARATH C R



23	4AI17CS085	SHARATH M G	<i>Sharath</i>
24	4AI17CS086	SHASHANK S	<i>Shashank</i>
25	4AI17CS087	SHASHANK S HEBBAR	<i>Shashank S.H.</i>
26	4AI17CS088	SHATHANIK A H V	<i>Shathani K.H.V.</i>
27	4AI17CS089	SHEEBA SUFIYAN	<i>Sheeba</i>
28	4AI17CS091	SHRAVANI RA	<i>Shravani R.N.</i>
29	4AI17CS092	SHRAYYA J N	<i>Shrayya J.N.</i>
30	4AI17CS093	SHREENIKA A K	<i>Shreenika</i>
31	4AI17CS094	SHRESHTA K S	<i>Shreshtha K.S.</i>
28	4AI17CS095	SHRINIDHI A S	<i>Shrinidhi</i>
29	4AI17CS096	SMAYANA A C	<i>Smayana</i>
30	4AI17CS097	SNEHA S P	<i>Sneha S.P.</i>
31	4AI17CS098	SOUNDARYA A R	<i>Soundaryaa R.</i>
32	4AI17CS099	SOWMYA H L	<i>Sowmya H.L.</i>
33	4AI17CS100	SPOORTHI K S	<i>Spoorthi K.S.</i>
34	4AI17CS101	SREERAKSHA TAPSE H	<i>Sreeraksha</i>
35	4AI17CS102	SUCHITHA H S	<i>Suchitha</i>
36	4AI17CS103	SUHAS S GOWDA	<i>Suhas</i>
37	4AI17CS104	SUJITH D S	<i>Sujitha</i>
38	4AI17CS106	SUSHMITHA R	<i>Sushmita</i>
39	4AI17CS107	SWAROOP A PAWAR	<i>Swaroop</i>
40	4AI17CS108	SYED MAQDUM C M	<i>Syed</i>
41	4AI17CS109	TEJAS M DEVIANG	<i>Tejas</i>
42	4AI17CS110	TEJASHWINI B V	<i>Tejashwini B.V.</i>
43	4AI17CS111	THEJUS C J	<i>Thejus C.J.</i>
44	4AI17CS112	ULLAS M R	<i>Ullas M.R.</i>
45	4AI17CS113	UMME SUHANA	<i>Ummeh</i>

46	4AI17CS114	USHA B.M	<i>Usha</i>
47	4AI17CS116	VANISHREE B	<i>Vanishree</i>
48	4AI17CS117	VIDYA T S	<i>Vidya</i>
49	4AI17CS118	VYSHNAVIN	<i>Vishna</i>
50	4AI17CS119	YAMUNA S	<i>Yamuna</i>
51	4AI17CS120	POOJA S	<i>Pooja</i>
52	4AI18CS400	Aishwarya C	<i>Aish</i>
53	4AI18CS402	ARPITHA C U	<i>Arpitha</i>
54	4AI18CS404	MANOJ R	<i>Manojir</i>
55	4AI18CS405	MOHAMMED IBRAHIM SAFIULLA	<i>Mohammed Ibrahim</i>
56	4AI18CS406	Nitish Kumar N H	<i>Nitish Kumar</i>
57	4AI18CS407	RAHIL M B	<i>Rahil M.B</i>
58	4AI18CS410	Sowmya A P	<i>Sowmya</i>
59	4AI17CS022	BHAVYA M N	<i>Bhavya</i>
60	4AI17CS023	BHOOMIKA B R	<i>Bhoomika</i>
61	4AI17CS024	BHUMIKA K G	<i>Bhumi</i>
62	4AI17CS025	CHAITHRA H G	<i>Chaitra</i>
63	4AI17CS026	CHANDAN C V	<i>Chandan</i>
64	4AI17CS027	CHETHAN S	<i>Chethan S.</i>
65	4AI17CS028	CHIRANTH M V	<i>Chiranth</i>
66	4AI17CS029	DARSHAN K S	<i>Darshan K.S</i>
67	4AI17CS030	DEEKSHA R	<i>Deeksha</i>
68	4AI17CS031	DEEPIKA H P	<i>Deepika</i>
69	4AI17CS032	DEEPTHI A	<i>Deepthi</i>
70	4AI17CS033	FARHEEN NAAZ	<i>Farheen</i>
71	4AI17CS034	GOWRAV A S	<i>Gowrav A S</i>
72	4AI17CS036	HALEEMA FAIZA	<i>Haleema</i>



73	4AI17CS037	HARSHADA LACHARYA	<i>Harshada</i>
74	4AI17CS038	HARSHITHA C M	<i>Harshitha</i>
75	4AI17CS039	JAYALAKSHMI A N	<i>Jayal</i>
76	4AI17CS040	JEEVAN REDDY K N	<i>Jeevan</i>
77	4AI17CS041	JYOTHIRMAYEE P V S N	<i>Jyothir</i>
78	4AI17CS042	KARTHIK REDDY A P	<i>Karthik</i>
79	4AI17CS043	KAVANA S	<i>Kavana</i>
80	4AI17CS044	KAVYA B M	<i>Kavya</i>
81	4AI17CS045	KIRIGODALA NAGARAJU MANIKANTA	<i>Nagaraju</i>
82	4AI17CS047	LAVANYA M G	<i>Lavanya</i>
83	4AI17CS048	MADEEHA RAYAN FATHIM	<i>Madheha</i>
84	4AI17CS049	MANASA I M	<i>Manasa</i>
85	4AI17CS050	MANASVI PRASHANTH	<i>Manasvi</i>
86	4AI17CS052	MEGHA M H	<i>Megha</i>
87	4AI17CS053	MEGHASHREE K S	<i>Megha</i>
88	4AI17CS054	MOHAMMED TAHA	<i>Mohammed</i>
89	4AI17CS055	NANDINI A S	<i>Nandini</i>
90	4AI17CS056	NAVDEEP M K	<i>Navdeep</i>
91	4AI17CS057	NELVITA LORRAINE FERNANDES	<i>Nelvita</i>
92	4AI17CS058	NIHARIKA B R	<i>Niharika</i>

**ADICHUCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  
**ADD ON COURSE: BASICS OF SOFTWARE TESTING**

**Toppers List**

<b>Sl.No</b>	<b>Student Name</b>	<b>Student USN</b>	<b>Marks Obtained</b>
1	SHANMUKA G C	4AI17CS083	48
2	SHEEBA SUFIYA	4AI17CS089	47
3	SUHAS GOWDA	4AI17CS103	46

  
**Signature of HOD**  
Professor and H.O.D.  
Department of Computer Science and Engg.  
Adichunchanagiri Institute of Technology  
CHIKMAGALUR - 577102



ADICHUCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING  
ADD ON COURSE: BASICS OF SOFTWARE TESTING

SEMESTER: IV

Student Name: Shanmuka GC

Max Marks: 50

USN: 4A17CS083

Note: There are 50 multiple choice questions. All questions are compulsory. Each question carries equal marks.

50\*1=50

- 1- 1. A deviation from the specified or expected behavior that is visible to end-users is called:  
a) An error      b) a fault       c) a failure      d) a defect
- 1- 2. A configuration management system would NOT normally provide:  
a) Linkage of customer requirements to version numbers.  
b) The precise differences in versions of software component source code.  
 c) Facilities to compare test results with expected results.  
d) Restricted access to the source code library
- 1- 3. Test cases are designed during:  
a) Test recording.      b) Test configuration.      c) Test planning.       d) Test specification
- 1- 4. Which of the following statements about reviews is true?  
 a) Reviews should be performed on specifications, code, and test plans  
b) Reviews are the least effective way of testing code.  
c) Reviews are unlikely to find faults in test plans.  
d) Reviews cannot be performed on user requirements specifications.
- 1- 5. In case of Large Systems  
a) Only few tests should be run      b) Test Cases written by good test engineers should be executed  
c) Only Good Test Cases should be executed       d) Testing should be on the basis of Risk
- 1- 6. Which of the following will be the best definition for Testing :  
 a) Testing is executing Software for the purpose of finding defects  
b) The purpose of testing is to demonstrate that the program is defect free  
c) The purpose of testing is to demonstrate that the program does what it is supposed to do  
d) The goal / purpose of testing is to demonstrate that the program works.
- 1- 7. Which of the following is not a type of incremental testing approach?  
 a) Big-bang      b) Top down      c) Bottom up      d) Functional incrimination
- 1- 8. Test Conditions are derived from  
a) Test Design      b) Test Cases      c) Test Data       d) Specifications
- 1- 9. Pick the best definition of quality  
a) Quality is job one requirements      b) Zero defects      c) Work as designed       d) Conformance to
- 1- 10. Fault Masking is  
a) Creating a test case which does not reveal a fault       b) Error condition hiding another error condition  
c) Masking a fault by developer      d) Masking a fault by a tester
- 1- 11. Boundary value testing  
a) Is the same as equivalence partitioning tests      b) Tests combinations of input circumstances  
 c) Test boundary conditions on, below and above the edges of input and output equivalence classes  
d) Is used in white box testing strategy

48  
50

A. Shanmuka

12. One Key reason why developers have difficulty testing their own work is:

- 1- a) Lack of technical documentation      b) Lack of test tools on the market for developer's  
c) ~~Lack of Objectivity~~      d) Lack of training

13. In a review meeting a moderator is a person who:

- 1- a) Takes minutes of the meeting      b) Takes telephone calls  
c) ~~Mediates between people~~      d) writes the documents to be reviewed

14. Acceptance test cases are based on what?

- 1- a) Decision table      b) Design      c) Code      d) ~~Requirements~~

15. How much testing is enough?

- 1- a) This question is easy to answer      b) This question is impossible to answer  
c) ~~The answer depends on the risk for your industry, contract and special requirements~~  
d) This answer depends on the maturity of your developers

16. which of the following is the component test standard?

- 1- a) IEEE 610      b) IEEE 829      c) BS7925-1      d) ~~BS7925-2~~

17. Which of the following is NOT a standard related to testing?

- 1- a) ~~IEEE610~~      b) IEEE829      c) BS7925-1      d) BS7925-2

18. The standard that gives definitions of testing terms is:

- 1- a) ISO/IEC 12207      b) ~~BS 7925-1~~      c) ANSI/IEEE 729      d) ANSI/IEEE 829

19. Which of the following is NOT true of incidents?

- 1- a) Incidents are raised when expected and actual results differ.      b) Incidents may be raised against user requirements.  
c) Incidents require investigation and/or correction.  
d) ~~Incident resolution is the responsibility of the author of the software under test.~~

20. Which of the following is false?

- 1- a) In a system two different failures may have different severities.  
b) A fault need not affect the reliability of a system.  
c) ~~A system is necessarily more reliable after debugging for the removal of a fault.~~  
d) Undetected errors may lead to faults and eventually to incorrect behavior.

21. Which of the following is the odd one out?

- 1- a) White box      b) ~~Functional~~      c) Structural      d) Glass box

22. Which of the following is a static test?

- 1- a) Coverage analysis      b) ~~Code inspection~~      c) Usability assessment      d) Installation test

23. Which of the following is a black box design technique?

- 1- a) statement testing      b) error- guessing      c) ~~equivalence partitioning~~      d) usability testing

24. Which of the following is not the integration strategy?

- 1- a) ~~Design based~~      b) Bottom-up      c) Big-bang      d) Top-down

25. Which of the following is NOT a reasonable test objective?

- 1- a) To find faults in the software      b) To give confidence in the software  
c) ~~To prove that the software has no faults~~      d) To find performance problems



26. Which of the following uses Impact Analysis most?

- a) Non-functional system testing      b) Component testing      c) User acceptance testing  
d) Maintenance testing

27. Expected results are:

- a) Only important in system testing      b) Most useful when specified in advance      c) Only used in component testing  
d) Derived from the code

28. What type of review requires formal entry and exit criteria, including metrics?

- a) Management review      b) Inspection      c) Walkthrough      d) Post project review

29. The difference between re-testing and regression testing is:

- a) Re-testing ensures the original fault has been removed; regression testing looks for unexpected side-effects  
b) Re-testing looks for unexpected side-effects; regression testing ensures the original fault has been removed  
c) Re-testing is done by developers; regression testing is done by independent testers  
d) Re-testing is done after faults are fixed; regression testing is done earlier

30. Given the following types of tool, which tools would typically be used by developers, and which by an independent system test team?

- i) Static analysis      ii) performance testing      iii. Test management      iv) dynamic analysis

- a) Developers would typically use i and iv; test team ii and iii  
b) Developers would typically use i and iii; test team ii and iv  
c) Developers would typically use i, iii and iv; test team ii  
d) Developers would typically use ii and iv; test team i and iii

31. Functional system testing is:

- a) Testing that the system functions with other systems  
b) testing the end to end functionality of the system as a whole  
c) Testing that the components that comprise the system function together  
d) testing the system performs functions within specified response times

32. Which of the following items would not come under Configuration Management?

- a) Operating systems      b) Live data      c) Test documentation      d) User requirement documents

33. Incidents would not be raised against:

- a) Requirements      b) Documentation      c) Improvements suggested by users      d) Test cases

34. Maintenance testing is:

- a) Testing to maintain business advantage      b) Testing a released system that has been changed  
c) Testing by users to ensure that the system meets a business need      d) Updating tests when the software has changed

35. Which of the following techniques is NOT a black box technique?

- a) State transition testing      b) Syntax testing      c) LCSAJ      d) Boundary value analysis

36. What can static analysis NOT find?

- a) Memory leaks      b) Unreachable ("dead") code      c) The use of a variable before it has been defined  
d) Array bound violations

37. Which of the following is likely to benefit most from the use of test tools providing test capture and replay facilities?

- a) Integration testing  b) Regression testing c) System testing d) User acceptance testing

38. Which of the following requirements is testable?

- a) The system shall be user friendly.  
- | -  b) The response time shall be less than one second for the specified design load.  
c) The safety-critical parts of the system shall contain 0 faults.  
d) The system shall be built to be portable.

39. In prioritizing what to test, the most important objective is to:

- | -  a) Test high risk areas. b) Find as many faults as possible. c) Obtain good test coverage.  
d) Test whatever is easiest to test.

40. Which of the following is false?

- | - a) An incident can be raised against documentation.  
b) An incident occurs when expected and actual results differ.  
c) Incidents can be analyzed to assist in test process improvement.  
 d) Incidents should always be fixed.

41. Identify the correct functional requirement.

- | - a) Robustness  b) Portability c) Maintainability d) None

42. Identify the correct measure for correctness.

- 0 - a) Errors per KLOC  b) \$ per KLOC c) Defects per KLOC d) None

43. Identify the fault-based testing technique.

- | - a) Beta testing b) Unit testing  c) Mutation testing d) Stress testing

44. Identify the term which is not related to testing?

- | -  a) Failure b) error c) Test case d) Test bot

45. When can white-box testing be started?

- | - a) After SRS creation b) after installation c) after programming  d) After designing

46. By whom is unit testing done?

- | - a) Users  b) Customers c) Developers d) None

47. In which of the following categories can white-box testing be classified?

- | -  a) Design based testing b) Structural testing c) Error guessing technique d) None of the above

48. Identify the term which is used to define testing?

- | - a) Finding broken code b) A stage of all projects  c) Evaluating deliverables to find errors  
d) None of the above

49. Identify the environment in which we can perform alpha testing?

- | - a) User's end b) Developer's end c) Both a and b are correct  d) None of the above

50. Choose the correct option which represents the key objective of integration testing?

- | - a) Interface errors  b) Procedure errors c) Design errors d) none of the above



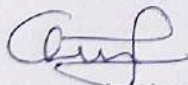
## Summary Report

The course "Software Testing" was conducted at CS&E Dept from 25/01/2019 to 29/01/2019.

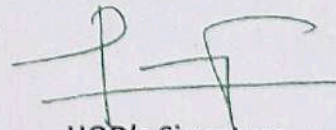
This course helps the students to understand critical processes of the software development process life cycle. It helps the companies to perform a comprehensive assessment of software and ensure that their product fulfills the client's needs. The testing phases of the software development lifecycle help to identify all errors and bugs of any software to companies before it is implemented. If the software bugs are not solved or fixed before deployment they badly affect the client's business.

### Course Outcomes

1. Understand and describe the basic concepts of functional (black box) software testing.
2. Identify a number of test styles and techniques and assess their usefulness in your context.
3. Understand the basic application of techniques used to identify useful ideas for tests.
4. Help determine the mission and communicate the status of your testing with the rest of your project team.
5. Understand where key testing concepts apply within the context of unified processes.



Instructor's Signature



HOD's Signature

Professor and H.O.D.  
Department of Computer Science and Engg.  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALUR - 577102

# **ADD-ON Program**

**2021-22**



**ADD on Program**  
**On**  
**“Deep Learning :AI”**



**ADD-ON Course**  
On  
**"DEEP LEARNING:AI"**



Organized by,  
Department of Computer Science  
and Engineering,  
Adichunchanagiri Institute of  
Technology,  
Chikmagalur – 577102  
Karnataka, India  
[www.aitechmagalur.ac.in](http://www.aitechmagalur.ac.in)

**About the College:**

Adichunchanagiri Institute of Technology (AIT) was established in the year 1980 under the auspicious of Adichunchanagiri Shikshana Trust(R) with the blessings of Bhairavaikya Jagadguru Padmabhushana Sri Sri Sri Dr. Balagangadharanatha Mahaswamiji to provide technical and other professional education in the rural area of Chikmagalur, the land of Coffee. With the blessings of Jagadguru Sri Sri Sri, Nirmalanandanatha Swamiji, AIT is imparting the quality education in Engineering and Management with ethical and spiritual values. The engineering departments have

recognized as research centers under VTU. The college has well equipped laboratory facilities and highly qualified and experienced faculty. The Institute is providing good training for students to excel in academics as well as in industry requirements and aims towards 100% placements to give a better future for students.

**About the Department:**

The Department of Computer Science and Engineering is established in the year 1986. It was earlier affiliated to the Mysore University later to the Kuvempu University and at present, it is affiliated to Visvesvaraya Technological University, Belagavi. The alumni of the department are working in various reputed organizations in India and abroad. The department is accredited twice by National Broad of Accreditation, New Delhi.

The department offers UG, PG Courses with an intake of 120 and 18 respectively and facilitates R&D through VTU recognized research center. The department has received funds from various reputed agencies like AICTE, VGST, KSCST, ISRO, ISTE, etc., for its activities.

**Objectives of the Course:**

Competence in technical writing holds great importance in the present era. Technical writing deals with specific knowledge, generally in the sphere of science and technology, and may be used in a wide variety of media: journal papers, thesis, project proposals, and other technical documents. DEEP LEARNING AI is a document typesetting system that is used to produce high quality scientific documents, like articles, books, dissertations, technical reports, etc. Expertise in drafting technical documents is an indispensable skill for all professionals for it helps them to share their knowledge of technical subjects effectively in all domains of society and thus makes them competent in their professional careers

**Resource Person:**

Dr. Adarsh M.J.  
Associate Professor  
Dept of CS&E, AIT, Chikkamagaluru

**Convenor:**

Dr Pushpa Ravi kumar, Professor and Head, Dept. of CS&E.

**Coordinator:**

Mr. S J Prashanth, Asst Professor,  
Dept. CS&E, AIT, Chikkamagaluru





|| Jai Sri Gurudev ||



**SRI ADICHUNCHANAGIRI SHIKSHANA TRUST ®  
ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY,  
CHIKKAMAGALURU**

P.B No.91, Adichunchanagiri Extension, Chikkamagaluru-577 102, Karnataka, India.

Ref: AIT/IQAC/CSE/ /2018-2019

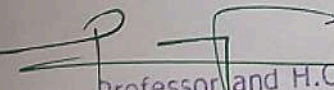
Date: 10/06/2018


**Circular**

Department of Computer Science & Engineering is conducting a Certificate Program (Add-on Program) on "Deep Learning :AI [19CS\_AC\_013] from 18-06-2018 to 02-07-2018 All other HOD's instruct the concern department students to attend the program. Following faculty member (Course instructor) is conducting a certificate program at CS&E Department.

**Course Instructor**

1. Prof. Vivekananda  
Assistant Professor  
Dept. of CS&E  
AIT Chikmagalur
2. Prof. S J Prashantha  
Assistant Professor  
Dept. of CS&E  
AIT Chikmagalur

  
Professor and H.O.D.  
HOD's Signature  
Department of Computer Science and Engg.  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALUR - 577102

  
Principal Signature  
Dr. C.T. JAYADEVA  
Principal B.E., M.Tech., Ph.D  
Adichunchanagiri Institute of Technology  
CHIKKAMAGALURU-577102

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Add on course – 30 Hours

ADD on Course Name: Deep Learning : AI

Course Code: 19CS\_AC\_013



**Module 1:**

**10 Hours**

Basic Concepts of Machine Learning: Machine Learning Systems ,Supervised Learning , Learning Algorithms Parametric Models ,Cost functions ,Generalization ,Regularization ,Evaluation of a Binary Classifier , Confusion Matrix ,Receiver Operating, Characteristic Curve , Precision Recall Curve.

**Module 2:**

**10 Hours**

Artificial Neural Networks: Basic Concepts ,Feed forward Neural Networks ,Single-Layer Perceptron ,Multilayer Perceptron ,ANN Learning Gradient Descent Methods ,Back-propagation Algorithm ,Regularization

**Module 3:**

**10 Hours**

Convolutional Neural Networks :Convolution Operation . Convolution in Mathematic and Image Processing Convolution in Neuroscience ,Convolutional Network Architecture . Convolutional Layer . Pooling .. Batch Normalization . Main Concepts Behind CNNs . Local Receptive fields. Parameter Sharing . Popular CNN Architectures .

**TEXT BOOKS:**

1. Neural Networks and Deep learning : A Text book by Charu C.Aggarrwal 2018



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

ADD on Course Name: Deep Learning: AI

Course Code: 19CS\_AC\_013

Branch: CSE

Student Enrollment List

SI NO	NAME	USN	SIGNATURE
1	APOORVA S R	4AI14CS012	Apoorva S R
2	DEEKSHA K N	4AI14CS026	Deeksha
3	ABHISHEK G	4AI15CS002	Abhishek
4	CHANDANA P H	4AI15CS028	Chandana
5	KOUSHIK S D	4AI15CS051	Koushik S D
6	NIDHI A R	4AI15CS064	Nidhi
7	SIDDANTH B K	4AI15CS103	Siddanth
8	ADYA H N	4AI16CS002	Adya
9	AGNES SANMATHI D	4AI16CS003	Agnes
10	ALFIYA BANU	4AI16CS004	Alfiya
11	ANANYA K V	4AI16CS006	Ananya
12	ANUSHA K N	4AI16CS007	Anusha
13	ANUVIKA A S	4AI16CS008	Anuvika
14	ARVIND GIRISH	4AI16CS009	Arvind
15	BABITHA B	4AI16CS011	Babitha
16	BHAGYASHREE H D	4AI16CS012	Bhagya
17	BHOOMIKA G S	4AI16CS013	Bhoomika
18	BHOOMIKA K	4AI16CS014	Bhoomika
19	BINDUSHREE C	4AI16CS015	Bindu
20	BINDUSREE B R	4AI16CS016	Bindu
21	BRUNDA D	4AI16CS017	Brunda
22	CHANDANA H Y	4AI16CS018	Chandana
23	CHINMAYEE	4AI16CS019	Chinmayee
24	CHINTHANA M C	4AI16CS021	Chinthana
25	CHIRAG M R	4AI16CS022	Chirag
26	DEEPAK N R	4AI16CS023	Deepak
27	DEEPIKA D P	4AI16CS024	Deepika
28	GADDI CHETAN	4AI16CS025	Gaddi
29	GOURAV B R	4AI16CS026	Gourav
30	HARSHA H K	4AI16CS027	Harsha
31	JAYASHREE	4AI16CS028	Jayashree
32	JEEVAN A S	4AI16CS029	Jeevan
33	KALPASHREE Y	4AI16CS030	Kalpashree
34	KARTHIK N L	4AI16CS031	Karthik
35	KAVYA S	4AI16CS032	Kavya
36	KAVYA S K	4AI16CS033	Kavya S K
37	KAVYASHREE C M	4AI16CS034	Kavyashree
38	KHALEEL AHAMED	4AI16CS035	Khaleel
39	KOWSHIK V	4AI16CS036	Kowshik
40	KRUTHIKA G NAYAK	4AI16CS037	Kruthika
41	LEANDRA MARIA MENDON	4AI16CS038	Leandra







**ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**ADD on Course Name: Deep Learning :AI**

**Course Code : 19CS\_AC\_013**

**Branch: CSE**

Students are identified for ADD on Course Classes based on their enrolment.  
 ADD on Course classes will be held during 18-06-2018 to 02-07-2018 at CS&E dept  
 from 4-6pm

**Attendance Report**

SI NO	NAME	USN	During 18-06-2018 to 02-07-2018															Signature
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	APOORVA S R	4A114CS012	P	P	P	P	P	P	P	P	P	A	P	P	P	P	Apoorva SR	
2	DEEKSHA K N	4A114CS026	A	P	P	P	P	P	P	P	P	P	P	P	P	P	Deeksha KN	
3	ABHISHEK G	4A115CS002	P	P	P	P	P	A	P	P	P	P	P	P	P	P	Abhishek	
4	CHANDANA P H	4A115CS028	P	P	P	P	P	P	P	P	P	A	P	P	P	P	Chandana	
5	KOUSHIK S D	4A115CS051	P	P	P	P	P	P	P	P	P	A	A	P	P	P	Koushik	
6	NIDHI A R	4A115CS064	P	P	P	P	P	P	P	P	P	A	A	P	P	P	Nidhi AR	
7	SIDDANTH B K	4A115CS103	P	P	P	P	P	P	A	A	A	P	P	P	P	P	Siddanth BK	
8	ADYA H N	4A116CS002	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Adya HN	
9	AGNES SANMATHI D	4A116CS003	P	P	P	P	P	P	A	A	P	P	P	P	P	P	Agnes Sanmathi D	
10	ALFIYA BANU	4A116CS004	P	P	P	P	A	P	P	P	P	P	P	P	P	P	Alfiya Banu	
11	ANANYA K V	4A116CS006	P	A	P	A	P	P	P	P	P	P	A	P	P	P	Ananya KV	
12	ANUSHA K N	4A116CS007	P	P	P	P	P	A	A	A	A	P	P	P	P	P	Anusha KN	
13	ANUVIKA A S	4A116CS008	P	A	A	P	P	P	A	P	P	P	P	P	P	P	Anuvika AS	
14	ARVIND GIRISH	4A116CS009	P	P	P	P	P	P	P	P	P	P	A	A	P	A	Arvind Girish	
15	BABITHA B	4A116CS011	P	P	A	A	P	P	P	P	P	A	P	P	P	P	Babitha B	
16	BHAGYASHREE H D	4A116CS012	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Bhagya HD	
17	BHOOMIKA G S	4A116CS013	P	P	P	P	P	P	A	A	A	P	P	P	P	P	Bhoomika GS	
18	BHOOMIKA K	4A116CS014	P	P	P	P	P	A	P	P	P	P	P	P	P	P	Bhoomika K	
19	BINDUSHREE C	4A116CS015	P	P	P	P	P	P	P	P	A	P	P	P	A	P	Bindushree C	
20	BINDUSREE B R	4A116CS016	P	P	P	P	P	A	P	P	P	P	P	P	P	P	Bindusree BR	
21	BRUNDA D	4A116CS017	P	P	P	P	P	A	A	P	P	P	P	P	P	P	Brunda D	
22	CHANDANA H Y	4A116CS018	A	A	A	P	P	P	A	P	P	P	P	P	P	P	Chandana HY	
23	CHINMAYEE	4A116CS019	P	P	P	A	P	P	A	P	P	P	P	A	P	P	Chinmayee	
24	CHINTHANA M C	4A116CS021	A	A	P	P	P	P	P	P	P	A	P	P	P	P	Chinthana MC	
25	CHIRAG M R	4A116CS022	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Chirag MR	
26	DEEPAK N R	4A116CS023	P	P	P	P	P	P	P	P	P	P	P	A	P	P	Deepak NR	
27	DEEPIKA D P	4A116CS024	P	A	P	P	A	P	P	P	P	P	P	A	P	P	Deepika DP	
28	GADDI CHETAN	4A116CS025	P	P	A	P	P	A	P	P	P	P	P	P	P	P	Gaddi Chetan	
29	GOURAV B R	4A116CS026	P	P	A	P	P	P	P	P	P	P	P	P	P	P	Gourav BR	
30	HARSHA H K	4A116CS027	P	P	P	P	P	P	P	P	P	P	A	P	P	P	Harsha HK	
31	JAYASHREE	4A116CS028	P	A	P	P	P	P	P	P	P	P	P	P	P	A	Jayashree	
32	JEEVAN A S	4A116CS029	P	A	P	P	P	P	P	P	P	P	P	P	P	P	Jeevan AS	
33	KALPASHREE Y	4A116CS030	P	P	P	P	P	P	P	P	A	P	P	P	P	P	Kalpashree Y	
34	KARTHIK N L	4A116CS031	P	A	P	P	P	P	P	P	P	P	P	P	P	P	Karthik NL	
35	KAVYA S	4A116CS032	P	A	P	P	P	P	P	P	P	P	P	P	P	P	Kavya S	
36	KAVYA S K	4A116CS033	P	P	P	P	A	P	P	P	P	P	P	P	P	P	Kavya SK	
37	KAVYASHREE C M	4A116CS034	P	P	P	P	P	A	A	P	P	P	P	P	P	P	Kavyashree CM	
38	KHALEEL AHAMED	4A116CS035	P	P	A	P	P	P	P	P	P	P	P	A	P	P	Khaleel Ahmed	



39	KOWSHIK V	4AI16CS036	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	Kat
40	KRUTHIKA G NAYAK	4AI16CS037	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Krutika
41	LEANDRA MARIA MENDON	4AI16CS038	A	P	P	P	P	P	P	P	A	A	P	P	P	P	P	P	Leandra
42	MANISHA P BEERAIAH	4AI16CS040	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Manisha
43	MEGHANA D Y	4AI16CS042	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	Meghana
44	MOHAMMED NIHAL KHAN	4AI16CS043	A	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	Mohammed
45	MOUNA J	4AI16CS044	P	P	P	P	P	P	P	A	P	P	P	P	A	P	P	P	Mouna
46	NAMITHA M TAPSE	4AI16CS046	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	Namitha
47	NAVEEN P PARVATHANENI	4AI16CS047	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	Naveen
48	NAYANA K S	4AI16CS048	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Nayana
49	NESARA B R	4AI16CS049	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Nesara
50	NISCHITHA K S	4AI16CS051	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Nischitha
51	NISHANTH K R	4AI16CS052	P	P	P	A	P	P	A	P	P	P	P	P	P	P	P	P	Nishanth
52	NISWARTH V SHETTY	4AI16CS053	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	Niswarth
53	P PRADEEP KUMAR	4AI16CS054	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Praadeep
54	POOJA B R	4AI16CS055	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	Pooja
55	POOJA B S	4AI16CS056	A	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	Pooja
56	POOJA N K	4AI16CS057	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	Pooja
57	POOJA S	4AI16CS058	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Pooja
58	POORNIMA C L	4AI16CS059	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Poornima
59	RACHANA N VANAGUR	4AI16CS062	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	Rachana
60	RAHULA	4AI16CS063	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	Rahula
61	RAHUL S	4AI16CS064	A	A	P	P	P	P	P	P	A	P	P	P	P	P	P	P	Rahul
62	POOJA C P	4AI16CS127	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	Pooja
63	ALFIYA SHAIK	4AI16CS130	P	P	P	A	P	P	P	P	A	P	A	P	P	P	P	P	Alfiya
64	AMBIKA D P	4AI17CS400	P	A	P	P	P	P	P	P	P	A	P	P	P	P	P	P	Ambika
65	SHASHIKALA S	4AI17CS407	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	Shashikala
66	VUETHA B S	4AI17CS409	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	Vuetha
67	SHREYA B R	4AI16CS085	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	Shreya
68	SHRIKARAN C N	4AI16CS086	P	P	A	A	P	P	P	P	P	P	P	P	P	P	P	P	Shrikaran
69	SHRUTHA R JAIN	4AI16CS087	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	Shrutha
70	SIDDESH P	4AI16CS088	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Siddesh
71	SINCHANA S B	4AI16CS089	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	Sinchana
72	SINCHANA S GOWDA	4AI16CS090	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	Sinchana
73	SNEHA K	4AI16CS091	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Sneha
74	SOUMYA H	4AI16CS092	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Soumya
75	SOUNDARYA GOGATE T S	4AI16CS093	P	P	P	P	P	A	A	P	P	P	P	P	P	P	P	P	Soundarya
76	SOURAB SAKLECHA	4AI16CS094	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Sourab
77	SOWMYA M	4AI16CS095	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	Sowmya
78	SPANDANA H P	4AI16CS096	P	P	P	P	P	P	P	P	A	A	P	P	P	P	P	P	Spandana
79	SPANDANA S	4AI16CS097	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Spandana
80	SPARSHA B R	4AI16CS098	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Sparsha
81	SPOORTHI A N	4AI16CS099	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	Spoorthi
82	SRISTI BAGAMANE	4AI16CS100	P	P	P	P	A	P	P	P	P	A	P	P	P	P	P	P	Sristi
83	SRUSTI R B S	4AI16CS101	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	Srusti
84	SUMANTHA M K	4AI16CS102	P	P	P	P	P	A	A	P	P	P	P	P	P	P	P	P	Sumantha
85	SUPRITH K	4AI16CS103	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	Suprith
86	SUPRIYA S K	4AI16CS104	P	P	P	P	P	P	A	A	A	A	P	P	P	P	P	P	Supriya
87	VAISHNAVI C O	4AI16CS114	A	A	A	P	P	P	P	P	P	P	A	A	P	P	P	P	Vaishnavi

Course Instructor Signature

HOD Signature

Professor and H.O.D.

Department of Computer Science and Engg.  
Adichunchanagiri Institute of Technology  
CHIKMAGALUR - 577102



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING


ADD ON COURSE NAME: DEEP LEARNING: AI

COURSE CODE: 19CS\_AC\_013

ASSESSMENT QUESTIONS

LIST OF TOPPERS

SLNo	Name of the Student	USN	Marks Scored
1	Vaishnavi C O	4AI16CS114	50
2	Sumantha M K	4AI16CS102	49
3	Sristi Bagamane	4AI16CS100	48



Signature of the H.O.D  
Professor and H.O.D.

Department of Computer Science and Engg.  
Adichunchanagiri Institute of Technology  
CHIKMAGALUR - 577 102



||Jai Sri Gurudev||

Sri Adichunchanagiri Shikshana Trust (R)



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY

CHIKKAMAGALURU - 577 102



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



### Certificate of Participation

*This is to certify that POOJA B R has successfully completed the add on course on "Deep Learning :AI" from 18-06-2018 to 02-07-2018 organized by Department of Computer Science and Engineering.*

Prof. S J Prashantha  
Staff co-ordinator

Prof. Vivekananda  
Staff co-ordinator

Professor and H.O.D.  
Dept. Pushpan Ravikiran and Enno  
Adichunchanagiri Institute of Techno  
CHIKKAMAGALUR - 577102



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

ADD ON COURSE NAME: DEEP LEARNING: AI

COURSE CODE: 19CS\_AC\_013

ASSESSMENT QUESTIONS

35  
50

Name of the Student: Apoorva S.R

Max Marks: 50

USN: HAI1HCS012

1. Which of the following is a subset of machine learning?

- A. Numpy   B. SciPy    C. Deep Learning   D. All of the above

2. How many layers Deep learning algorithms are constructed?

- A. 2    B. 3   C. 4   D. 5

3. The first layer is called the?

- A. inner layer   B. outer layer   C. hidden layer   D. None of the above

4. RNNs stands for?

- A. Receives neural networks   B. Report neural networks  
C. Recording neural networks    D. Recurrent neural networks

5. Which of the following is/are Common uses of RNNs?

- A. Businesses Help securities traders to generate analytic reports  
 B. Detect fraudulent credit-card transaction  
C. Provide a caption for images  
D. All of the above

6. CNN is mostly used when there is an?

- A. structured data    B. unstructured data   C. Both A and B   D. None of the above

7. Which neural network has only one hidden layer between the input and output?

- A. Shallow neural network    B. Deep neural network  
C. Feed-forward neural networks   D. Recurrent neural networks

8. Deep learning algorithms are \_\_\_\_\_ more accurate than machine learning algorithm in image classification  
 A. 33% B. 37% C. 40% ~~D. 41%~~ |
9. In which of the following applications can we use deep learning to solve the problem?  
 A. Protein structure prediction B. Prediction of chemical reactions  
 C. Detection of exotic particles ~~D. All of the above~~ |
10. The number of nodes in the input layer is 10 and the hidden layer is 5. The maximum number of connections from the input layer to the hidden layer are  
 A. 50 B. less than 50 ~~C. more than 50~~ D. It is an arbitrary value ○
11. The input image has been converted into a matrix of size 28 X 28 and a kernel/filter of size 7 X 7 with a stride of 1. What will be the size of the convoluted matrix?  
 A. 20x20 ~~B. 21x21~~ C. 22x22 D. 25x25 ○
12. In a simple MLP model with 8 neurons in the input layer, 5 neurons in the hidden layer and 1 neuron in the output layer. What is the size of the weight matrices between hidden output layer and input hidden layer?  
 A. [1 X 5], [5 X 8] ~~B. [5 X 1], [8 X 5]~~ C. [8 X 5], [5 X 1] D. [8 X 5], [1 X 5] |
13. Which of the following functions can be used as an activation function in the output layer if we wish to predict the probabilities of n classes ( $p_1, p_2, \dots, p_k$ ) such that sum of p over all n equals to 1?  
~~A. Softmax~~ B. ReLu C. Sigmoid D. Tanh |
14. Assume a simple MLP model with 3 neurons and inputs= 1,2,3. The weights to the input neurons are 4,5 and 6 respectively. Assume the activation function is a linear constant value of 3. What will be the output?  
 A. 32 B. 64 ~~C. 96~~ D. 128 |
15. Sentiment analysis using Deep Learning is a many-to one prediction task. ○ |  
~~A. True~~ B. False C. Can be true and false D. can not say
16. In CNN, having max pooling always decrease the parameters? |  
 A. True ~~B. False~~ C. Can be true and false D. cannot say
17. When an experienced deep learning engineer works on a new problem, they can usually use insight from previous problems to train a good model on the first try, without needing to iterate multiple times through different models.? |  
~~A. True~~ B. False



18. Which of the factors affect the performance of learner system does not include?

- a) Representation scheme used      b) Training scenario  
c) Type of feedback      ~~d) Good data structures~~ 0

19. Different learning methods does not include?

- a) Memorization    ~~b) Analogy~~    c) Deduction    d) Introduction 1

20. In language understanding, the levels of knowledge that does not include?

- a) Phonological    b) Syntactic    ~~c) Empirical~~    d) Logical 1

21. A model of language consists of the categories which does not include?

- a) Language units    b) Role structure of units    ~~c) System constraints~~    d) Structural units 0

22. Among the following which is not a horn clause?

- a) p    ~~b)  $\neg p \vee q$~~     c)  $p \rightarrow q$     d)  $p \rightarrow \neg q$  0

23. Type of matrix decomposition model is \_\_\_\_\_

- A. predictive model    ~~B. descriptive model~~    C. logical model    D. None 1

24. PCA is \_\_\_\_\_

- ~~A. backward feature selection~~    B. forward feature selection.  
C. feature extraction    D. None of these 0

25. Supervised learning and unsupervised clustering both require which is correct according to the statement.

- ~~A. input attribute~~    B. hidden attribute    C. output attribute    D. categorical attribute 1

26. Following are the types of supervised learning \_\_\_\_\_

- A. Regression    B. classification    C. subgroup discovery    ~~D. All of above~~ 1

27. A feature F1 can take certain value: A, B, C, D, E, & F and represents grade of students from a college. Here feature type is \_\_\_\_\_

- ~~A. Ordinal~~    B. nominal    C. categorical    D. Boolean 0

28. Following is powerful distance metrics used by Geometric model \_\_\_\_\_

- A. Manhattan distance    B. Euclidean distance    ~~C. All of above~~    D. None of above 0

29. The output of training process in machine learning is \_\_\_\_\_

- A. Machine learning algorithm.    ~~B. Machine learning model~~    C. Null    D. accuracy 1

30. Which of the following is a good test dataset characteristic?

- A. is representative of the dataset as a whole
- B. large enough to yield meaningful results
- C. All of above
- D. None of above

31. Which of the following techniques would perform better for reducing dimensions of a data set?

- A. removing columns which have high variance in data
- B. removing columns which have too many missing value
- C. removing columns with dissimilar data trends
- D. None of the above

32. You are given reviews of few Netflix series marked as positive, negative and neutral. Classifying reviews of a new Netflix series is an example of \_\_\_\_\_

- A. unsupervised learning
- B. supervised learning
- C. semi supervised learning
- D. reinforcement learning

33. Like the probabilistic view, the \_\_\_\_\_ view allows us to associate a probability of membership with each classification

- A. Deductive
- B. exemplar
- C. classical
- D. inductive

34. Database query is used to uncover this type of knowledge.

- A. Hidden
- B. shallow
- C. Deep
- D. multidimensional

35. Data used to build a data mining model.

- A. Training data
- B. hidden data
- C. test data
- D. validation data

36. If machine learning model output doesn't involves target variable then that model is called as \_\_\_\_\_

- A. predictive model
- B. descriptive model
- C. reinforcement learning
- D. all of the above

37. In the example of predicting number of babies based on stork's population, Number of babies is \_\_\_\_\_

- A. feature
- B. observation
- C. outcome
- D. attribute

38. Following are the descriptive models \_\_\_\_\_

- A. Classification
- B. clustering
- C. association rule
- D. Both 1 and 2

39. What does dimensionality reduction reduce?

- A. Collinearity
- B. stochastic
- C. entropy
- D. performance



40. Which of the following is the best machine learning method?

- A. Accuracy    B. scalable    C. fast     D. All of above

41. In multiclass classification number of classes must be \_\_\_\_\_

- A. Equals to two    B. less than two     C. greater than two    D. None

42. Which of the following can only be used when training data are linearly separable?

- A. linear logistic regression     B. linear hard-margin svm  
C. linear soft margin svm    D. parzen windows

43. Impact of high variance on the training set?

- A. underfitting     B. overfitting    C. both underfitting & overfitting    D. depends upon the dataset

44. The effectiveness of an SVM depends upon \_\_\_\_\_

- A. kernel parameters     B. selection of kernel    C. soft margin parameter    D. All of the above

45. Feature can be used as a \_\_\_\_\_

- A. predictor    B. binary split    C. All of above    D. None of above

46. Which of the following evaluation metrics can not be applied in case of logistic regression output to compare with target?

- A. Accuracy    B. auc-roc    C. logloss     D. mean-squared-error

47. A measurable property or parameter of the data-set is \_\_\_\_\_

- A. training data    B. test data     C. feature    D. validation data

48. Support Vector Machine is \_\_\_\_\_

- A. geometric model    B. probabilistic model    C. logical model    D. none

49. Imagine a Newly-Born starts to learn walking. It will try to find a suitable policy to learn walking after repeated falling and getting up. Specify what type of machine learning is best suited?

- A. Regression    B. means algorithm     C. reinforcement learning    D. None

50. Different learning methods does not include?

- A. Deduction    B. memorization    C. analogy     D. Introduction

ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY, CHIKKAMAGALURU-577102.  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Add-On Course on "Deep Learning :AI"

OVER ALL Add-On Course PARTICIPANTS FEEDBACK

Sl.No	DESCRIPTION	EXCELLENT	GOOD	POOR
1	How would you rate the presenter's knowledge on the concept?	✓		
2	How would you rate the concepts and Information provided by the Presenter?	✓		
3	What was your overall impression of the session?			✓
4	Remarks	Got some knowledge after attending the session.		

MAAS  
Signature of the Participants



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY CHIKKAMAGALURU

Department of Computer Science & Engineering

## Summary Report

The course "Deep Learning:AI" was conducted at CS&E Dept from 18/06/2018 to 02/07/2018.

The main objective of this course is to make students comfortable with tools and techniques required in handling large amounts of datasets. They will also uncover various deep learning methods in NLP, Neural Networks etc. Several libraries and datasets publicly available will be used to illustrate the application of these algorithms. This will help students in developing skills required to gain experience of doing independent research and study.

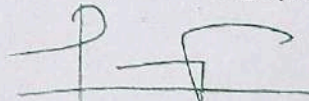
### Course Outcomes

Students are able to

- Understand the informed and uninformed problem types and apply search strategies to solve them.
- Apply difficult real life problems in a state space representation so as to solve them using AI techniques like searching and game playing.
- Design and evaluate intelligent expert models for perception and prediction from intelligent environment.
- Formulate valid solutions for problems involving uncertain inputs or outcomes by using decision making techniques.
- Demonstrate and enrich knowledge to select and apply AI tools to synthesize information and develop models within constraints of application area.
- Examine the issues involved in knowledge bases, reasoning systems and planning



Instructor's Signature



HOD's Signature .

Professor and H.O.D.  
Department of Computer Science and Engineering  
Adichunchanagiri Institute of Technology  
CHIKMAGALUR - 577102

# Advance In Machine Learning

## VIII "A" SECTION

SL.NO	USN	NAME
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# Advance in Andriod Application Development

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28	4AI17CS408	SHREELAKSHMI M



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Recognized Under #startupindia

Date: 07 / 03 / 2020

To,  
The Head of Department,  
Computer Science & Engineering,  
AIT, Chikmagalur

Sub: Feedback on the Add-On course we conducted for the students of CS&E

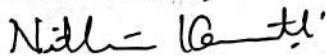
Respected Madam,

With reference to the above subject, we are happy to have conducted the add-on course in the Department of Computer Science & Engineering on Advances in Android Application Development and Machine Learning.

First thing I have to say, the commitment of the students towards the add-on course was wonderful, that too in their vacation period. We could clearly see the urge in the students to learn new technologies and practical applications of those technologies. This helped us to conduct the course in a proactive manner. The attendance of the students throughout the course was overwhelming which showed their unconditional interest in the proceedings. It was a nice experience for us too, we always feel it interesting to communicate with the students with an urge to learn.

I would like to thank you ma'am on behalf of Capulus Technologies for the opportunity and support provided to us during the course. I would also like to thank the co-ordinators of the course Dr.Taranath N.L, Associate Professor, CS&E and Mr. Darshan L.M, Assistant Professor, CS&E for their support. We hope the add-on course was useful for the students and has achieved its intended outcome.

Yours' Faithfully



(Nithin Kamath)

Executive Director

Capulus Technologies Private Limited

#### About Capulus Technologies

Capulus Technologies is a Private Limited Software Firm helping companies, industries, institutions and government manage complexities in their operations by providing them smart technology solutions. Since founding, Capulus Technologies has always believed in the highest level of integrity, "client first" in providing reliable and highly effective services. Our practical knowledge and rich experiences allow us to provide comprehensive I.T services to our clients spread across various sectors starting from small businesses to various Government departments. Capulus Technologies Private Limited is the company which developed the official app of Karnataka State Police which has been implemented state-wide across Karnataka.

The Company has wide experience in developing software applications according to the needs of the clients. The team has good domain expertise and have provided software solutions for various Government Departments as well as Private Companies. The company is recognized by Central Government under StartUp India initiative and has received a Certificate of Recognition.

## Toppers in Add - On Course Test

### Advances in Android Application Development:

Sl.No	Name	USN	MARKS OBTAINED
1	Niswarth V Shetty	4AI16CS053	22

### Advances in machine Learning:

Sl.No	Name	USN	MARKS OBTAINED
1	Karthik N L	4AI16CS031	21

  
Signature of the HOD  
Professor and H.O.D.  
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# Advance In Machine Learning

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28	4AI17CS408	SHREELAKSHMI M	Shreelakshmi



1. In Machine Learning if 'Answers' and 'Data' are given as input, what will we get as output?
  - a. Bugs
  - b. Machine Learning
  - c. Rules
  - d. Answers
2. What is the process in which we instruct a computer what the data represents (i.e. data is for walking, data is for running etc.,)
  - a. Categorizing the Data
  - b. Labelling the Data
  - c. Programming the Data
  - d. Learning the Data
3. What is a Dense in keras?
  - a. A single neuron
  - b. A layer of connected neurons
  - c. A layer of disconnected neurons
  - d. Mass over Volume
4. What does a Loss function do?
  - a. Figures out if you win or lose
  - b. Generates a guess
  - c. Decides to stop training a neural network
  - d. Measures how good the current guess is
5. What does the optimizer do?
  - a. Figures out how to efficiently compile your code
  - b. Measures how good the current guess is
  - c. Generates a new and improved guess
  - d. Decides to stop training a neural network
6. What is Convergence?
  - a. The unknown word in the ML class
  - b. The process of getting very close to the correct answer
  - c. A dramatic increase in loss
  - d. A programming API for AI
7. What does model.fit do?
  - a. It makes a model fit available memory
  - b. It trains the neural network to fit one set of values to another
  - c. It determines if your activity is good for your body
  - d. It optimizes an existing model
8. What do the Fashion MNIST Images look like?
  - a. 100x100 Color
  - b. 28x28 3d
  - c. 28x28 Color
  - d. 28x28 Greyscale
9. Why are there 10 output neurons while using MNIST data set?
  - a. Purely arbitrary
  - b. There are 10 different labels
  - c. To make it classify 10x faster
  - d. To make it train 10x faster



10. What does Relu do?

- a. For a value  $x$ , it returns  $1/x$
- b. It only returns  $x$  if  $x$  is less than zero
- c. It only returns  $x$  if  $x$  is greater than zero
- d. It returns the negative of  $x$

11. Why do you split data into training and test sets?

- a. To test a network with previously unseen data
- b. To train a network with previously unseen data
- c. To make training quicker
- d. To make testing quicker

12. What method gets called when an epoch finish?

- a. `on_epoch_finished()`
- b. `on_epoch_end()`
- c. `On_training_complete()`
- d. `on_end()`

13. What parameter do you set in your fit-function to use callbacks?

- a. `callback=[]`
- b. `oncallback=[]`
- c. `callbacks=[]`
- d. `oncallbacks=[]`

14. What is a Convolution?

- a. A technique to make images smaller
- b. A technique to filter out unwanted images
- c. A technique to isolate features in images
- d. A technique to make images bigger

15. What is a Pooling?

- a. A technique to make images sharper
- b. A technique to isolate features in images
- c. A technique to reduce the information in an image while maintaining features
- d. A technique to combine picture

16. After max pooling a  $26 \times 26$  image with a  $2 \times 2$  filter, how big will the output be?

- a.  $28 \times 28$
- b.  $26 \times 26$
- c.  $56 \times 56$
- d.  $13 \times 13$

17. Using Image Generator, how do you label images?

- a. It's based on the file name
- b. It's based on the directory the image is contained in
- c. You have to manually do it
- d. TensorFlow figures it out from the contents

18. What method on the Image Generator is used to normalize the image?

- a. `normalize_image=`
- b. `normalize=`
- c. `Rescale_image=`
- d. `rescale=`

19. When we specify the `input_shape` to be  $(300, 300, 3)$ , what does that mean?

- a. There will be 300 images, each size 300, loaded in batches of 3
- b. Every Image will be  $300 \times 300$  pixels, and there should be 3 Convolutional Layers
- c. Every Image will be  $300 \times 300$  pixels, with 3 bytes to define color
- d. There will be 300 horses and 300 humans, loaded in batches of 3



20. If your training data is close to 1.000 accuracy, but your validation data isn't, what's the risk here?

- a. You're overfitting on your training data
- b. You're underfitting on your validation data
- c. No risk, that's a great result
- d. You're overfitting on your validation data

21. What does `flow_from_directory` give you on the ImageGenerator?

- a. The ability to easily load images for training
- b. The ability to pick the size of training images
- c. The ability to automatically label images based on their directory name
- d. All of the above

22. Why is the validation accuracy a better indicator of model performance than training accuracy?

- a. It isn't, they're equally valuable
- b. There's no relationship between them
- c. The validation accuracy is based on images that the model hasn't been trained with, and thus a better indicator of how the model will perform with new images.
- d. The validation dataset is smaller, and thus less accurate at measuring accuracy, so its performance isn't as important

23. If my training data only has people facing left, but I want to classify people facing right, how would I avoid overfitting?

- a. Use the 'flip\_vertical' parameter around the Y axis
- b. Use the 'flip' parameter
- c. Use the 'horizontal\_flip' parameter
- d. Use the 'flip' parameter and set 'horizontal'

24. When training with augmentation, you noticed that the training is little slower. Why?

- a. Because the image processing takes cycles
- b. Because the augmented data is bigger
- c. Because there is more data to train on
- d. Because the training is making more mistake

25. When using Image Augmentation with the ImageDataGenerator, what happens to your raw image data on-disk.?

- a. It gets overwritten, so be sure to make a backup
- b. A copy is made and the augmentation is done on the copy
- c. Nothing, all augmentation is done in-memory
- d. It gets deleted

Name of the Student : VARUN.A.S

USN : 4AI16CS117

Marks Awarded :





||Jai Sri Gurudev||

Sri Adichunchanagiri Shikshana Trust ©

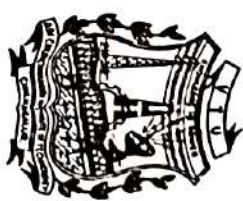


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CHIKKAMAGALURU-577102



DEPARTMENT OF  
**COMPUTER SCIENCE & ENGINEERING**  
CERTIFICATE OF APPRECIATION



This is to certify that Mr./Ms. \_\_\_\_\_

*of 8th Semester has participated and qualified in the add-on Course on "Advances in Machine Learning" organized by Department of Computer Science & Engineering, AIT, Chikkamagaluru during 27th January to 8th February 2020 in association with Capulus Technologies Private Limited, Chikkamagaluru.*

*N. S. K. S.*

Executive Director  
Capulus Technologies,  
Chikkamagaluru

HOD, Dept. of CS&E

AIT, Chikkamagaluru

Principal

AIT, Chikkamagaluru

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||Jai Sri Gurudev||

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*Nithya*  
Executive Director  
Capulus Technologies,  
Chikkamagaluru

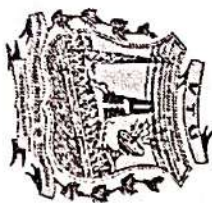
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AIT, Chikkamagaluru

Principal  
AIT, Chikkamagaluru



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|| Jai Sri Gurudev ||  
Sri Adichunchanagiri Shikshana Trust (R)

**ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  
Internship Practice on "Machine Learning and its Applications"



**FEEDBACK FORM**

**Particulars**

1. How was the overall organization of the Internship?
2. How were the Resource Persons?
3. Was the content of Presentation relevant and current?
4. How were the Different sessions?
5. Generally, how was the whole experience at the meeting.
6. Comments and Suggestions:

	A	B	C	D
1.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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*Sadvi MB*  
Signature

Note: A: Excellent    B: Very Good    C: Good    D: Satisfactory



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27	4AI17CS402	DEEPA J M
28	4AI17CS408	SHREELAKSHMI M

# CAPULUS TECHNOLOGIES PRIVATE LIMITED

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Recognized Under #startupindia

Date: 07 / 03 / 2020

To,  
The Head of Department,  
Computer Science & Engineering,  
AIT, Chikmagalur

Sub: Feedback on the Add-On course we conducted for the students of CS&E

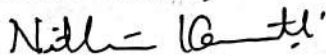
Respected Madam,

With reference to the above subject, we are happy to have conducted the add-on course in the Department of Computer Science & Engineering on Advances in Android Application Development and Machine Learning.

First thing I have to say, the commitment of the students towards the add-on course was wonderful, that too in their vacation period. We could clearly see the urge in the students to learn new technologies and practical applications of those technologies. This helped us to conduct the course in a proactive manner. The attendance of the students throughout the course was overwhelming which showed their unconditional interest in the proceedings. It was a nice experience for us too, we always feel it interesting to communicate with the students with an urge to learn.

I would like to thank you ma'am on behalf of Capulus Technologies for the opportunity and support provided to us during the course. I would also like to thank the co-ordinators of the course Dr.Taranath N.L, Associate Professor, CS&E and Mr. Darshan L.M, Assistant Professor, CS&E for their support. We hope the add-on course was useful for the students and has achieved its intended outcome.

Yours' Faithfully



(Nithin Kamath)

Executive Director

Capulus Technologies Private Limited

#### About Capulus Technologies

Capulus Technologies is a Private Limited Software Firm helping companies, industries, institutions and government manage complexities in their operations by providing them smart technology solutions. Since founding, Capulus Technologies has always believed in the highest level of integrity, "client first" in providing reliable and highly effective services. Our practical knowledge and rich experiences allow us to provide comprehensive I.T services to our clients spread across various sectors starting from small businesses to various Government departments. Capulus Technologies Private Limited is the company which developed the official app of Karnataka State Police which has been implemented state-wide across Karnataka.

The Company has wide experience in developing software applications according to the needs of the clients. The team has good domain expertise and have provided software solutions for various Government Departments as well as Private Companies. The company is recognized by Central Government under StartUp India initiative and has received a Certificate of Recognition.



## Toppers in Add - On Course Test

### Advances in Android Application Development:

Sl.No	Name	USN	MARKS OBTAINED
1	Niswarth V Shetty	4AI16CS053	22

### Advances in machine Learning:

Sl.No	Name	USN	MARKS OBTAINED
1	Karthik N L	4AI16CS031	21

  
**Signature of the HOD**  
**Professor and H.O.D.**  
Department of Computer Science and Eng  
Adichunchanagiri Institute of Technolog  
CHIKMAGALUR - 577 102

# Advance In Machine Learning

## VIII "A" SECTION

SL.NO	USN	NAME	Signature
1	4AI15CS051	KOUSHIK S D	
2	4AI15CS103	SIDDANTH B K	<i>[Signature]</i>
3	4AI16CS008	ANUVIKA A S	Babitha B
4	4AI16CS011	BABITHA B	<i>[Signature]</i>
5	4AI16CS012	BHAGYASHREE H D	Clinton M.C
6	4AI16CS021	CHINTHANA M C	Veekath
7	4AI16CS023	DEEPAK N R	chetan.G
8	4AI16CS025	GADDI CHETAN	<i>[Signature]</i>
9	4AI16CS027	HARSHA H K	Jayashree
10	4AI16CS028	JAYASHREE H M	<i>[Signature]</i>
11	4AI16CS030	KALPASHREE Y	<i>[Signature]</i>
12	4AI16CS031	KARTHIK N L	Karthik.V
13	4AI16CS036	KOWSHIK V	<i>[Signature]</i>
14	4AI16CS037	KRUTHIKA G NAYAK	<i>[Signature]</i>
15	4AI16CS040	MANISHA P BEERAI AH	Meghana.B.Y
16	4AI16CS042	MEGHANA D Y	
17	4AI16CS047	NAVEEN P PARVATHANENI	Nayana A.S
18	4AI16CS048	NAYANA K S	Nischitha U.S.
19	4AI16CS051	NISCHITHA K S	P. Pradeep Kumar
20	4AI16CS054	P PRADEEP KUMAR	<i>[Signature]</i>
21	4AI16CS056	POOJA B S	



## Advance In Machine Learning

### VIII "B" SECTION

SL.NO	USN	NAME	Signature
1	4AI16CS039	MADHUMITHA K M	Madhumitha
2	4AI16CS070	ROJA K S	Raja
3	4AI16CS072	SADVI N B	Sadvi N-B
4	4AI16CS073	SAHANA DESAI	Sahana Desai
5	4AI16CS074	SAMRUDDHI D K	Sarudhi
6	4AI16CS075	SAMRUDH PATEL D M	
7	4AI16CS076	SAMRUDHI H R	
8	4AI16CS077	SANDESH S	
9	4AI16CS080	SANJANA R G	
10	4AI16CS081	SAVEENA M M	Saveena M.M
11	4AI16CS085	SHREYA B R	
12	4AI16CS089	SINCHANA S B	
13	4AI16CS090	SINCHANA S GOWDA	
14	4AI16CS091	SNEHA K	
15	4AI16CS092	SOUMYA H	
16	4AI16CS094	SOURAB SAKLECHA	
17	4AI16CS096	SPANDANA H P	
18	4AI16CS097	SPANDANA S	
19	4AI16CS098	SPARSHA B R	Parsha B.R.
20	4AI16CS100	SRISTI BAGAMANE	
21	4AI16CS108	SWATHI B S	
22	4AI16CS113	VAISHNAVI A R	
23	4AI16CS114	VAISHNAVI C O	
24	4AI16CS117	VARUN A S	Varun
25	4AI16CS118	VATSALYA H V	
26	4AI16CS125	YASHASWINI C	
27	4AI17CS402	DEEPA J M	Deepa J.M.
28	4AI17CS408	SHREELAKSHMI M	

1. In Machine Learning if 'Answers' and 'Data' are given as input, what will we get as output?
  - a. Bugs
  - b. Machine Learning
  - c. Rules
  - d. Answers
2. What is the process in which we instruct a computer what the data represents (i.e. data is for walking, data is for running etc.,)
  - a. Categorizing the Data
  - b. Labelling the Data
  - c. Programming the Data
  - d. Learning the Data
3. What is a Dense in keras?
  - a. A single neuron
  - b. A layer of connected neurons
  - c. A layer of disconnected neurons
  - d. Mass over Volume
4. What does a Loss function do?
  - a. Figures out if you win or lose
  - b. Generates a guess
  - c. Decides to stop training a neural network
  - d. Measures how good the current guess is
5. What does the optimizer do?
  - a. Figures out how to efficiently compile your code
  - b. Measures how good the current guess is
  - c. Generates a new and improved guess
  - d. Decides to stop training a neural network
6. What is Convergence?
  - a. The unknown word in the ML class
  - b. The process of getting very close to the correct answer
  - c. A dramatic increase in loss
  - d. A programming API for AI
7. What does model.fit do?
  - a. It makes a model fit available memory
  - b. It trains the neural network to fit one set of values to another
  - c. It determines if your activity is good for your body
  - d. It optimizes an existing model
8. What do the Fashion MNIST Images look like?
  - a. 100x100 Color
  - b. 28x28 3d
  - c. 28x28 Color
  - d. 28x28 Greyscale
9. Why are there 10 output neurons while using MNIST data set?
  - a. Purely arbitrary
  - b. There are 10 different labels
  - c. To make it classify 10x faster
  - d. To make it train 10x faster



10. What does Relu do?

- a. For a value  $x$ , it returns  $1/x$
- b. It only returns  $x$  if  $x$  is less than zero
- c. It only returns  $x$  if  $x$  is greater than zero
- d. It returns the negative of  $x$

11. Why do you split data into training and test sets?

- a. To test a network with previously unseen data
- b. To train a network with previously unseen data
- c. To make training quicker
- d. To make testing quicker

12. What method gets called when an epoch finish?

- a. `on_epoch_finished()`
- b. `on_epoch_end()`
- c. `On_training_complete()`
- d. `on_end()`

13. What parameter do you set in your fit-function to use callbacks?

- a. `callback=[]`
- b. `oncallback=[]`
- c. `callbacks=[]`
- d. `oncallbacks=[]`

14. What is a Convolution?

- a. A technique to make images smaller
- b. A technique to filter out unwanted images
- c. A technique to isolate features in images
- d. A technique to make images bigger

15. What is a Pooling?

- a. A technique to make images sharper
- b. A technique to isolate features in images
- c. A technique to reduce the information in an image while maintaining features
- d. A technique to combine picture

16. After max pooling a  $26 \times 26$  image with a  $2 \times 2$  filter, how big will the output be?

- a.  $28 \times 28$
- b.  $26 \times 26$
- c.  $56 \times 56$
- d.  $13 \times 13$

17. Using Image Generator, how do you label images?

- a. It's based on the file name
- b. It's based on the directory the image is contained in
- c. You have to manually do it
- d. TensorFlow figures it out from the contents

18. What method on the Image Generator is used to normalize the image?

- a. `normalize_image=`
- b. `normalize=`
- c. `Rescale_image=`
- d. `rescale=`

19. When we specify the `input_shape` to be  $(300, 300, 3)$ , what does that mean?

- a. There will be 300 images, each size 300, loaded in batches of 3
- b. Every Image will be  $300 \times 300$  pixels, and there should be 3 Convolutional Layers
- c. Every Image will be  $300 \times 300$  pixels, with 3 bytes to define color
- d. There will be 300 horses and 300 humans, loaded in batches of 3



20. If your training data is close to 1.000 accuracy, but your validation data isn't, what's the risk here?

- a. You're overfitting on your training data
- b. You're underfitting on your validation data
- c. No risk, that's a great result
- d. You're overfitting on your validation data

21. What does `flow_from_directory` give you on the ImageGenerator?

- a. The ability to easily load images for training
- b. The ability to pick the size of training images
- c. The ability to automatically label images based on their directory name
- d. All of the above

22. Why is the validation accuracy a better indicator of model performance than training accuracy?

- a. It isn't, they're equally valuable
- b. There's no relationship between them
- c. The validation accuracy is based on images that the model hasn't been trained with, and thus a better indicator of how the model will perform with new images.
- d. The validation dataset is smaller, and thus less accurate at measuring accuracy, so its performance isn't as important

23. If my training data only has people facing left, but I want to classify people facing right, how would I avoid overfitting?

- a. Use the 'flip\_vertical' parameter around the Y axis
- b. Use the 'flip' parameter
- c. Use the 'horizontal\_flip' parameter
- d. Use the 'flip' parameter and set 'horizontal'

24. When training with augmentation, you noticed that the training is little slower. Why?

- a. Because the image processing takes cycles
- b. Because the augmented data is bigger
- c. Because there is more data to train on
- d. Because the training is making more mistake

25. When using Image Augmentation with the ImageDataGenerator, what happens to your raw image data on-disk.?

- a. It gets overwritten, so be sure to make a backup
- b. A copy is made and the augmentation is done on the copy
- c. Nothing, all augmentation is done in-memory
- d. It gets deleted

Name of the Student : VARUN.A.S

USN : 4AI16CS117

Marks Awarded :





||Jai Sri Gurudev||

Sri Adichunchanagiri Shikshana Trust ©



ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY

CHIKKAMAGALURU-577102



**DEPARTMENT OF  
COMPUTER SCIENCE & ENGINEERING**  
**CERTIFICATE OF APPRECIATION**



This is to certify that Mr./Ms. \_\_\_\_\_

*of 8th Semester has participated and qualified in the add-on Course on "Advances in Machine Learning" organized by Department of Computer Science & Engineering, AIT, Chikkamagaluru during 27th January to 8th February 2020 in association with Capulus Technologies Private Limited, Chikkamagaluru.*

*N. S. K. S.*

Executive Director  
Capulus Technologies,  
Chikkamagaluru

HOD, Dept. of CS&E

AIT, Chikkamagaluru

Principal

AIT, Chikkamagaluru

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||Jai Sri Gurudev||

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DEPARTMENT OF  
COMPUTER SCIENCE & ENGINEERING

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*Nitha*

Executive Director  
Capulus Technologies,  
Chikkamagaluru

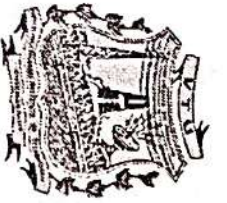
HOD, Dept. of CS&E  
AIT, Chikkamagaluru

Principal  
AIT, Chikkamagaluru



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|| Jai Sri Gurudev ||  
Sri Adichunchanagiri Shikshana Trust (R)

**ADICHUNCHANAGIRI INSTITUTE OF TECHNOLOGY**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  
Internship Practice on "Machine Learning and its Applications"



**FEEDBACK FORM**

**Particulars**

1. How was the overall organization of the Internship?
2. How were the Resource Persons?
3. Was the content of Presentation relevant and current?
4. How were the Different sessions?
5. Generally, how was the whole experience at the meeting.
6. Comments and Suggestions:

	A	B	C	D
1.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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5.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<div style="border: 1px solid black; width: 100%; height: 100%;"></div>			

*Sadvi MB*  
Signature

Note: A: Excellent    B: Very Good    C: Good    D: Satisfactory

# **ADD-ON Program**

**2021-22**