

(UGC Autonomous Institution, Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad). Accredited by NAAC with 'A' Grade (Cycle II), Maisammaguda (H), Medchal-Malkajgiri District, Secunderabad, Telangana State – 500100, www.mrec.ac.in

Department of Computer Science and Engineering

CIRCULAR

Date: 13/04/2023

All the students are hereby informed that Value Added Course on "Algorithm analysis and design" is being organized by the Computer Scienceand EngineeringDepartment on dated 16thApril 2023 to 21th May 2023. The resource person for the course is Mr.M.Nithin Project Manager, Rober Bosch.

Students are advised to register their names to the programme coordinator "Mr.P.V.Ramana Murthy, Associated professorCSE Department", on or before 15/04/2023 and utilize this opportunity to enhance their skills by attending the programme.

The detailed schedule of the programme will be displayed in the notice board.

Head of the Department

Head of the Department
Dept. of Common Common and Engineering

Malla Reddy Lag godinge Autonomous) Secunderabad, Telangana State - 500 100.

Copy to:

- 1) Circulation in Students classroom
- 2) All HOD's
- 3) Notice Boards
- 4) PA to principal for filing.

Engg. College 500 100 Engg. South Frederabad*

Malla Reddy Engineering College
Malla Reddy Engineering College
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About the Institution

Malla Reddy Engineering College (Autonomous) is one of the reputed engineering colleges in Hyderabad, Telangana. MREC (A) is part of Malla Reddy Group of Institutions (MRGI), founded by Sri. Ch. Malla Reddy, currently Hon'ble Minister, Labor and Employment, Factories, Women and Child Welfare and Skill Development, Govt. of Telangana State. The college is situated in a environment lush serene. green Gundlapochampally, Maisammaguda, Medchal(M), Medchal-Malkaigiri District Telangana-500100.

The college was established in 2002 and is an autonomous institution approved by UGC and affiliated to JNTUH. The college is re-accredited by NAAC with 'A' Grade (II Cycle) and was conferred autonomous status by JNTUH in 2011 and by UGC in 2014 for a period of 6 years. Our eligible UG and PG programs received NBA accreditation and some of them received reaccreditation too. The college caters to wide ranging aspirations and goals of student communities by offering new courses in UG courses provides PG courses and MBA along with programs in various streams of Engineering & Technology and Management. It boasts of world-class infrastructure and well-equipped laboratories in all departments and is skillfully and smartly guided by Dr. A. Ramaswami Reddy, Principal, MREC (A) who have a rich teaching and industrial experience.

Advisory Committee

Chief Patrons: Sri. Ch. Malla Reddy

Founder Chairman

Malla Reddy Group of Institutions

Patrons:

Sri.Ch. Mahender Reddy

Secretary, MRGI Dr.Ch.Bhadra Reddy President, MRGI

Co-Patrons: Dr.A.Ramaswami Reddy

Principal, MREC (A)

Convener: Dr.Shiva Prasad satla

HOD CSE

Coordinator: Mr.P.V. Ramana Murthy,

Associated professor, CSE

Resource Person:Mr.M.Nithin Project Manager, Rober Bosch

Organizing Committee:

Dr.P.Srinivas, Professor, CSE

Dr.J.Anitha, Professor, CSE

Dr.N.Supriya, Professor, CSE

Mr. K Arun Kumar, Assistant Professor, CSE

Ms. S. Sandhya Rani, Assistant Professor, CSE

Mr.K.Subba Shanker, Assistant Professor, CSE

Mr.S.Ajav Kumar, Assistant Professor, CSE

Mr.M.Srikanth, Assistant Professor, CSE

Mr.B.Raja Rao, Assistant Professor, CSEMalla Reddy Ingineering College Maisammaguda, Dhulapally, (Post Via Kompaliy), Sec-bad-500100.



A One-Week Skill development Col (Value added Course)

On

"Algorithm analysis and design

16thApril 2023 to 21th May 2023







Organizedby Department of

Computer Science and Engineeri MALLA REDDY ENGINEERING COL

(AUTONOMOUS) MAIN CAMPUS

An UGC Autonomous Institution, Appro-AICTE & Affiliated to JNTUH-Hyders Reaccreditedby NAACwith'A'Grade (II Maisammaguda(H), Gundlapochampall Medchal (M), Medchal - Malkaigiri Dis Telangana - 500100, India.

Registration Form

Name of the Participant :
Branch&Year:
Name of Institution:
Address for Communication:
Mobile Number:
E-Mail ID:

DECLARATION:

The information furnished above is true to the best of my Knowledge.

Place:

Date:

Signature of Applicant



About the Department

The Department of CSE was started in the year 2005 with a vision of imparting high-quality education to suite the global standards in Computer science and Engineering. The department has got highly qualified & committed faculty members supported by dedicated technical staff.

The department has its own library and sophisticated laboratories not only to suite curriculum requirements but also to serve research needs such as Computer Networks, Data Mining, Software Engineering, Image processing & Cloud Computing. Workshops, software simulation etc.

The department formed CSI and ISTE student branch for the benefit of students and faculty by conducting technical Conferences, workshops, FDPs and Guest lectures.

Overview of the Programme

This course introduces concepts related to the design and analysis of algorithms. Specifically, it discusses recurrence relations, and illustrates their role in asymptotic and probabilistic analysis of algorithms.

It covers in detail greedy strategies divide and conquer techniques, dynamic programming and max flow - min cut theory for designing algorithms, and illustrates them using a number of wellknown problems and applications.

Malla Redex Englineals of Coverse popular graph and matching Maisanmagalgorithms, and basics of randomized algorithms (Post Via Kompa and Computational complexity. However, the depth of coverage of complexity classes and intractability, approximation algorithms,

Objectives of the frogramme

Upon completion of this course, students will be able to do the following:

- Analyze the asymptotic performance of algorithms.
- Write rigorous correctness proofs for algorithms.
- Demonstrate a familiarity with major algorithms and data structures.
- Apply important algorithmic design paradigms and methods of analysis.
- Synthesize efficient algorithms in common engineering design situations

Topics to be covered

- Time complexity, space complexity, step count method
- · Weighted union and find algorithms
- Understanding divide-and-conquer method,
- · greedy general method

Certificate

After successful completion of the course the certificates shall be issued to the participants.

Outcome of the program,

Analyze worst-case running times of algorithms using asymptotic analysis. Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm. Synthesize divide-and-conquer algorithms. Derive and solve recurrences describing the performance of divide-and-conquer algorithms.



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Algorithms analysis and design

Course code: VACCSE08

Duration of the course: (30 hrs)

Objective of the course:

This course will make students to analyze asymptotic performance of algorithms, understand different methods like divide and conquer, greedy and graph theory. It also helps to develop solutions to the problems that arise with dynamic programming method by applying backtracking techniques on different applications and synthesizing branch and bound, NP problems

Syllabus

UNIT 1:

Total hrs: 6hrs

Introduction -Algorithm, Pseudo code for expressing algorithms, Performance Analysis-Space complexity, Time complexity, Asymptotic Notations, Amortized analysis.

Disjoint Sets -Disjoint set operations, union and find algorithms, spanning trees, connected components and bi connected components.

UNIT2:

Total hrs: 8hrs

Algorithm Methods: Divide and Conquer - General method, applications-Binary search, Quick sort, Merge sort, Strassen_s matrix multiplication

Greedy method General method, applications-Job sequencing with deadlines, general knapsack problem, Minimum cost spanning trees, Single source shortest path problem

UNIT 3:

Total hrs:4 hrs

A: Dynamic Programming - General method, applications-Matrix chain multiplication, Optimal binary search trees, 0/1 knapsack problem .

B: Optimization Techniques - All pairs shortest path problem, travelling sales person problem, Reliability design.

UNIT 4:

Total hrs: 6hrs

Backtracking-General method, n-queen problem, sum of subsets problem, graph coloring, Hamiltonian cycles

Branch and Bound - General method, applications: Travelling sales person problem, 0/1 knapsack problem- LC Branch and Bound solution, FIFO Branch and Bound solution

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Malla Reddy Engig Maisammaguela, Dhulapalle (Post Via Kompally), Sec-bad-3 3000. UNIT 5: Total hrs :6hrs

NP-Hard and NP-Completeness: Basic concepts, NP - Hard and NP Complete classes, Cook_s theorem, Deterministic and Non-Deterministic algorithms, NP-hard graph problems and scheduling problem

Outcome of the course:

- At the end of the course, students will be able to
- Analyze performance of algorithms using asymptotic notations
- Describe and analyze paradigms for designing good algorithms using Divide-andConquer and Greedy Techniques.
- Synthesize dynamic-programming algorithms, and analyze them
- Learn and apply backtracking and branch and bound techniques to solve some complex problems.
- Apply algorithm design techniques to solve certain NP-complete problems.



Principal

Malla Reddy Engineering College

Maisammaguda, Dhulapally, 3.

(Post Via Kompally), Sec-bad-500100

Value Added Courses On "Algorithm analysis and design"

16thApril 2023 to 21th May 2023 Organized by

Department of Computer Science and Engineering.

MALLA REDDY ENGINEERING COLLEGE (Autonomous)

Maisammaguda, DhulapallyPost,viaKompally Secunderabad- 500100

REGISTRATION FORM

1. Name of the Participant 7ALASILA ALEKHYA Date: 16.04.2023
2074(0580)
2. Designation STUDENT
3. Qualification: B. Tech [cst]
4. Institute: MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)
5. Address for communication: Miyapur - Hydera bad.
6. Mobile Number. 9965289720
7. E-mail: Alekhya 58 Egmail. Com

Date:Signature of the Applicant

Malla Reddy Engineering College Maisammaguda, Dhulapally, (Post Via Kompally), Sec-bad-500100.

Value Added Courses On "Algorithm analysis and design"

16thApril 2023 to 21th May 2023 Organized by

Department of Computer Science and Engineering.

MALLA REDDY ENGINEERING COLLEGE (Autonomous)

Maisammaguda, DhulapallyPost,viaKompally Secunderabad—500100

REGISTRATION FORM

1.Name of the Participant U. SHIREESHA	Date: 16.04.2023
20J4ID580.2	
2. Designation STUDENT.	
3. Qualification: B. Tech [cst]	
4. Institute: MAUA REDDY ENGINEERING	COLLEGE
(AUTONOMOUS)	
5.Address for communication: Kothirampur - Ko	
6. Mobile Number. 7256907241	
7. E-mail: Shiresha 569@gmail.com.	

Date:Signature of the Applicant



Malla Reddy Engineering College
Maisammaguda, Dhulapally,
(Post Via Kompally), Sec-bad-500100.

Value Added Courses On "Algorithm analysis and design"

16^{th} April 2023 to 21^{th} May 2023

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Department of Computer Science and Engineering.

MALLA REDDY ENGINEERING COLLEGE (Autonomous)

Maisammaguda, DhulapallyPost,viaKompally Secunderabad—500100

REGISTRATION FORM

1.Name of the Participant ABDUL GAFFAR KHAN Date: 16.04.2023
20JY10580Y
2. Designation STUDENT
3. Qualification: BiTech (CSE)
4. Institute: MALLA REDDY ENGINEERING COLLEGE [-AUTONOMOUS]
5. Address for communication: Miyapur-Hyderabad
6. Mobile Number. 8863980424
7. E-mail: 9affar_63@gmail.com

Date:Signature of the Applicant

Malla Reddy Engineering College Maisammaguda, Dhulapally, (Post Via Kompally), Sec-bad-500100.

Value Added Courses "Algorithm analysis and design"

16thApril 2023 to 21th May 2023 Organized by

Department of Computer Science and Engineering.

MALLA REDDY ENGINEERING COLLEGE (Autonomous)

Maisammaguda, DhulapallyPost,viaKompally Secunderabad 500100

REGISTRATION FORM

1.Name of the Participant Name of the Participant Name
2.0.7.41D.5.80.3
2. Designation STUPENT
3. Qualification: B-tech (CSE)
4. Institute: MALLAREDDY ENGLINEERING COLLEGE (Autonomous)
5.Address for communication: Gajwel- siddipet
6. Mobile Number. 820 572886 J
7. E-mail: 360hith826@gmail.com

Date:Signature of the Applicant

Engg.

Malla Reddy Engineering College Maisammaguda, Dhulapally, (Post Via Kompally), Sec-bad College



MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(UGC Autonomous Institution, Affiliated to JNTUH, Accredited 2nd time by NAAC with 'A' Grade & NBA and Recipient of World Bank Assistance under TEQIP--II S.C. 1.1)

Maisammaguda (H), Medchal-Malkajgiri District, Telangana State - 500100

Department: CSE

Course Name: Algorithm analysis and design

Date: 16thApril 2023 to 21th May 2023

Value Added Course List of Students enrolled and completed

Sl.No	Roll No	Name of the students		
$\begin{array}{c c} & 20, \\ \hline & 3 & 20, \\ \hline & 20, \\ \end{array}$	J41D5802	TalasilaAlekhya U. Shireesha N Rohith Abdul Gaffar Khan	Year/ Semester I/II I/II I/II	Course completed YES YES YES YES

HOD-CSE

Head of the Department

Dept. of Cr. Science and Engineering

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Maila Reddy Engineering College
Maisammaguda, Dhulapally,
Maisammaguda, Sec-bad-500100.



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Department: CSE

Date:16th April 2023to 21st May 2023

IM. Tech IISem Value Added Course Attendance Sheet

Algorithm Analysis and Design

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20J41D5804	20J41D5803	20J41D5802	20J41D5801	Roll no
Abdul Gaffar Khan	N Rohith	U. Shireesha	TalasilaAlekhya	Name of the Student
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CAK	6)\$	TD)	20/05/2

CO-ORDINATER



Malla Reddy Engineering College Maisammaguda, Dhulapally,

(Post Via Kompally), Sec-bad-500100

alla Reddy Engineering College (Autonomous) Dept. of Communications and Engineering Head of the Department

Secunderabad, Telangana State - 500 100.



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Department: CSE

Date:16th April 2023to 21st May 2023

IM.Tech IISemValue Added Course Attendance Sheet

Algorithms Analysis and Design

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20J41D5804	20J41D5803	20J41D5802	20J41D5801	Roll no
Abdul Gaffar Khan	N Rohith	U. Shireesha	TalasilaAlekhya	Name of the Student
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CO-ORDINATER

HOD

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Malia Reddy Engineering College
Malammaguda, Dhulapally,
[968] Via Kompally), Sec-bad-500100.

Head of the **Department** t. of Cerronitar Science and Engineering Reddy টোডুল্লালু তেজিল 'Autonomous)

cunderabad, Telangana State - 500 100.



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Department: CSE

Date:16th April 2023to 21st May 2023

IM.Tech IISemValue Added Course Attendance Sheet

Algorithms Analysis and Design

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TH TH	M M A	(T)	P) (T)	17	TalasilaAlekhya	20J41D5801	1
26/4/23 27/4/2	21/4/2 24/4/ 25/4/2 3 23 3	20/4 2 /23	18/4/2 19/4/2 3 3	17/4/2 18 3	Name of the Student	Roll no	S.NO

CO-ORDINATER

HOD

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Malls Reddy Engineering College Malsammaguda, Dhulapally, (Pest Via Kompally), Sec-bad-500100.

Head of the Department

t. of Committer Science and Engineering Reddy Englisching College "Astonomous) cunderabad, Telangana State - 500 100.

MALLA REDDY ENGINEERING COLLEGE (Autonomous) Maisammaguda, DhulapallyPost,viaKompally Secunderabad-500100

Value Added Courses On "ALGORITHM ANALYSIS AND DESIGN"

Organized by Department of Computer Science and Engg.

FEED BACK FORM

Thank you for your Interest to attend value added courses:

DI.

Please proved your valuable feedback
1. How well was the session organized?
□ Excellent
Good
2. how good is the content of this value Added course?
Excellent
□ Good
□ Poor
3. Do you feel the resource person explain the all concepts?
Excellent
□ Poor
4. How all the topics given in the program scheduled been covered?
Excellent
□ Good
5. Other comments if any: Nice Session
Signature of the participant Malla Reddy Engineering College Malla Reddy Engineering College Maisammaguda, Dhulapally, Maisam

MALLA REDDY ENGINEERING COLLEGE (Autonomous) Maisammaguda, DhulapallyPost,viaKompally

Secunderabad 500100

Value Added Courses On "ALGORITHM ANALYSIS AND DESIGN"

Organized by

Department of Computer Science and Engg.

FEED BACK FORM

Thank you for your Interest to attend value added courses:

Please proved your valuable feedback

1. How well was the session organized?
□ Excellent
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Good
□ Poor
5. Other comments if any:

Signature of the participant



Malla Reddy E Maisammaguda, Dhulapaliy (Post Via Kompaliy), Sec-bad-500100,

MALLA REDDY ENGINEERING COLLEGE (Autonomous)

Maisammaguda, DhulapallyPost,viaKompally Secunderabad – 500100

Value Added Courses On "ALGORITHM ANALYSIS AND DESIGN"

Organized by

Department of Computer Science and Engg.

FEED BACK FORM

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(Post Via Kompaliy), Sec-bad 500100.

MALLA REDDY ENGINEERING COLLEGE (Autonomous) Maisammaguda, DhulapallyPost,viaKompally

Secunderabad-500100

Value Added Courses On "ALGORITHM ANALYSIS AND DESIGN"

Organized by Department of Computer Science and Engg.

FEED BACK FORM

Thank you for your Interest to attend value added courses:

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A.

Signature of the participant

Engg

Malla Reddy Exampering College Maisammaguda, Dhuiapaliy, (Post Via Kompally), Sec-bad-500100.



(Autonomous – main Campus))

Maisammaguda, Dhulapally (Post via Kompally), Secunderabad-500 100, Telangana (An autonomous institution approved by UGC and affiliated to JNTUH. The college is accredited by NAAC with 'A' Grade)

VALUE ADDED COURSES

On

"Certification program on Algorithm analysis and design"

Certificate

This is to certify that <u>20J41D5803</u>, <u>N Rohith</u> from Department of <u>Computer Science and Engineering</u> successfully completed the <u>Value Added Course</u> on "<u>Certification Program on Algorithm analysis and design</u>" held from <u>16.04.2023</u> to <u>21.05.2023</u> organized by Department of Computer Science and Engineering, MREC (Autonomous), Hyderabad, Telangana

Coordinator



Principal
Maila Reddy Engineering College
Maisammaguda, Dhulapally,
(Post Via Kompally), Sec-bad-500100.

de

HOD

Head of the Department

Dept. of Computer Science and Engineering
Malla Reddy Engineering College (Autor Mous)
Secunderabad, Telangana State - 500 100.



(Autonomous – main Campus))

Maisammaguda, Dhulapally (Post via Kompally), Secunderabad-500 100, Telangana
(An autonomous institution approved by UGC and affiliated to JNTUH. The college is accredited by NAAC with 'A' Grade)

VALUE ADDED COURSES

On

"Certification program on Algorithm analysis and design"

Certificate

This is to certify that <u>20J41D5802</u>, <u>U. Shireesha</u> from Department of <u>Computer Science and Engineering</u> successfully completed the <u>Value Added Course</u> on "<u>Certification Program on Algorithm analysis and design</u>" held from <u>16.04.2023</u> to <u>21.05.2023</u> organized by Department of Computer Science and Engineering, MREC (Autonomous), Hyderabad, Telangana

Coordinator

Engg. College (500 100) (A)

Malla Reddy Engineering College
Maisammaguda, Dhulapally,
(Post Via Kompelly), Sec-bad-500100.

HOD

Head of the Department

Dept. of Committer Science and Engineering

Malla Reddy Engineering College (Autonomous)

Secunderated Telangana State - 500 100



(Autonomous – main Campus))

Maisammaguda, Dhulapally (Post via Kompally), Secunderabad-500 100, Telangana

(An autonomous institution approved by UGC and affiliated to JNTUH. The college is accredited by NAAC with 'A' Grade

VALUE ADDED COURSES

On

"Certification program on Algorithm analysis and design"

Certificate

This is to certify that <u>20J41D5801</u>, <u>Talasila Alekhya</u> from Department of <u>Computer Science and Engineering</u> successfully completed the <u>Value Added Course</u> on "<u>Certification Program on Algorithm analysis and design</u>" held from <u>16.04.2023</u> to <u>21.05.2023</u> organized by Department of Computer Science and Engineering, MREC (Autonomous), Hyderabad, Telangana

P.V.M

Coordinator

Soo 100 ge to 10

Maila Reddy Engineering College
Maisammaguda, Dhulapally,
(Post Via Kompaliy), Section (2010).

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Head of the Department

Dept. of Computer Science and Engineering Malla Reddy Engineering Oolfege (Authonomous Secunderabad, Telangana State - 500 100



(Autonomous – main Campus))

Maisammaguda, Dhulapally (Post via Kompally), Secunderabad-500 100 , Telangana

(An autonomous institution approved by UGC and affiliated to JNTUH. The college is accredited by NAAC with 'A' Grade

VALUE ADDED COURSES

On

"Certification program on Algorithm analysis and design"

Certificate

This is to certify that <u>20J41D5804</u>, <u>Abdul Gaffar Khan</u> from Department of <u>Computer Science and Engineering</u> successfully completed the <u>Value Added Course</u> on "<u>Certification Program on Algorithm analysis and design</u>" held from <u>16.04.2023</u> to <u>21.05.2023</u> organized by Department of Computer Science and Engineering, MREC (Autonomous), Hyderabad, Telangana

Coordinator

Soo 100 Soorabad *

Malla Reddy Engineering College
Maisammaguda, Dhulapally,
(Post Via Kompally), Sec-bad-500100.

Head of the Department

Dept. of Comprise Science and Engineering
Malla Reddy Engineering Science and Engineering Science and Engineering

cunderabad, Telangana ວັດແລະ - ວັດຊີ 100