



MOTHER THERESA INSTITUTE OF ENGINEERING AND TECHNOLOGY

Melumoi (Post), Palamaner-517408.

(Approved by AICTE, New Delhi and Affiliated to JNTUA, Anantapuramu-515002)

(An ISO-9001:2015 Certified Institute)

(Email: mtieat@gmail.com Website: www.mtieat.com)

[COLLEGE CODE: HR]



DEPARTMENT OF MECHANICAL ENGINEERING

Place: Palamaner,

Date: 04.03.2022

To
The Principal,
MTIET,
Palamaner.

Sub: Organizing Add on Course for **III B.TECH** students titled
"HYPERMESH" - Req., & Regd.

With the reference to the subject cited above, I bring to your kind notice that to enhance the general skills and enrichment of the curriculum, the department of Mechanical Engineering is organizing a Add on Course titled, "**HYPERMESH**" for the III B.Tech students during the inter semester break with **minimum duration of 30 hours**. The Program will be conducted from 07.03.2022 to 12.03.2022.

In this connection the undersigned is proposing a request to grant the permission to organize the mentioned course for the third year students.

Please consider with prior hierarchy.

Thanking you,


HOD

HEAD OF THE DEPT.
Mechanical Engineering
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DEPARTMENT OF MECHANICAL ENGINEERING

Ref.: MTIET/ME/AOC/CIR-02

Place: Palamaner,

Date: 05.03.2022.

C I R C U L A R

This is here by informed to all the III B.Tech students that the Department is very glad to organize a Add on Course to improve the skills on “HYPERMESH“ during the period of inter semester break that is from 07-03-2022 to 12-03-2022, with minimum duration of 30 hours.

So all the interested students should register their names through the Department coordinator.

R.T.S.
HOD *5/3/22*

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Circulation to:

1. The III B.Tech Class rooms.
2. The Department Notice board.
3. Department file.



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DEPARTMENT OF MECHANICAL ENGINEERING

ADD ON COURSE: HYPERMESH

COURSE SYLLABUS :: AY 2021-2022

Duration: 30 Hours

UNIT I

6 hours

Introduction to Hyper mesh, Introduction about Hyper mesh, Introduction to CAE, Application of CAE Software, Advantages and Theory of FEM, Geometry, Create node, Node edit, Temp nodes, Distance, Dimensioning , Lines, Creation of surfaces and surface edit, Translate, Mid Surface Extraction, De featuring.

UNIT II

6 hours

Geometry Clean Up Surface edges, Visualization tool bar, Display tool bar, Clean up using quick edit, 2D Meshing, Introduction to meshing , Auto meshing, Size & Biasing, Density and mesh style, Replace, re meshing, Current and surface components.

UNIT III

6 hours

2d Mesh Quality, Quality Criteria, Aspect Ratio, Reducing The Trias Percentage, Quality index, T Connections, Free – Edges, Manual mesh Ruled Elem Offset.

UNIT IV

6 hours

Tools, Number And Mass Calculation, Project , Position, 3d Hex Meshing , Introduction To 3d Meshing , Types Of 3d Elements, 3d Solid Mesh, Solid Map Commands, 3d Tetra Meshing, Tetra Parameters, Tet Collapse.

UNIT V

6 hours

1d Mesh, Beam Elements, Bars, Rods, Rbe2 & Rbe3 Elements, Welding & Bolt Creation, Linear Meshing, Create Collectors, Material Properties, Load Constraints, Modal, Linear Static And Buckling Analysis, Deck Preparation, Material And Properties Assignment, Assign of Loads And Constraints, Saving The File Formats.

R. Sashi 5/3/22.
CO-ORDINATOR

R. Sashi 5/3/22
HOD/ME

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DEPARTMENT OF MECHANICAL ENGINEERING

ADD ON COURSE:: HYPERMESH (2103AOC02)

III B.TECH, COURSE SCHEDULE

Academic year 2021-2022

S.NO.	DAY(S)	DATE	Duration	TIME	TOPIC(S)	EXPERT DETAILS
1	DAY 1	07-03-22	30 mins	09:30-10:00	INAUGURATION	R SASIDHAR REDDY
2			1 hour	10:00-11:00	INTRODUCTION TO HYPER MESH	
3			2 hours	11:00-01:00	GEOMETRY , CREATE NODE, NODE EDIT, TEMP NODES , DISTANCE, DIMENSIONING , LINES	
4			2 hours 30 mins	02:00-04:30	MID – SURFACE EXTRACTION	
5	DAY 2	08-03-22	30 mins	09:30-10:00	GEOMETRY CLEAN – UP SURFACE EDGES	R SASIDHAR REDDY
6			1 hour	10:00-11:00	2D MESHING	
7			2 hours	11:00-01:00		
8			2 hours 30 mins	02:00-04:30	2D MESH QUALITY	
9	DAY 3	09-03-22	30 mins	09:30-10:00	QUALITY INDEX	A ARUN KUMAR
10			1 hour	10:00-11:00		
11			2 hours	11:00-01:00	MANUAL MESH RULED	
12			2 hours 30 mins	02:00-04:30		
13	DAY 4	10-03-22	1 hour 30 mins	09:30-11:00	3D SOLID MESH, 3D TETRA MESHING	A ARUN KUMAR
14			2 hours	11:00-01:00		
15			2 hour 30 mins	02:00-04:30	1D MESH	
16	DAY 5	11-03-22	1 hour 30 mins	09:30-11:00	LINEAR MESHING	B.NIRANJAN SIMHA
17			2 hours	11:00-01:00		
18			2 hours 30 mins	02:00-04:30	MODAL, LINEAR STATIC AND BUCKLING ANALYSIS DECK PREPARATION	
19						
20	DAY 6	12-03-22	1 hour 30 mins	09:30-11:00	BUCKLING ANALYSIS DECK PREPARATION	B.NIRANJAN SIMHA
21			2 hours	11:00-01:00	PRACTICE	
22			1 hour	02:00-03:00	CONDUCTION OF EXAM	
23			1 hour 30 mins	03:00-04:30	DISTRIBUTION OF CERTIFICATES	

Total Duration of Course: 36 hours.

R. Sashi
CO-ORDINATOR

R.T.S
HOD/ME 5/3/22

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DEPARTMENT OF MECHANICAL ENGINEERING

ADD ON COURSE :: HYPERMESH(2103AOC02)

III B.TECH, STUDENT REGISTRATION FORM

Academic Year - 2021-2022

S.NO.	REGD. NO.	NAME OF THE STUDENT	SIGNATURE
1	19HR1A0301	AAMURI BHARGAV KUMAR	A. Bhargav Kumar
2	19HR1A0303	DANDUVARI DEVI VARA PRASAD	D. Devi Vara Prasad
3	19HR1A0304	GOVINDA SWAMY PRANAY KUMAR	D.S.P. Kumar
4	19HR1A0306	GALLA SAI CHETHAN	G. Sai Chethan
5	19HR1A0307	GANAMUKALA SHARATH KUMAR	G. Sharath
6	19HR1A0308	GOURANNAGARI SOWMYA	G. Sowmya
7	19HR1A0309	GORAJALA ESHWAR NAIDU	G. Eshwar Naidu
8	19HR1A0310	GONUGUNTLA PREM CHAND NAIDU	G. Prem Chand Naidu
9	19HR1A0311	KOGILA PALLI ARUN KUMAR REDDY	K.P. Arunkumar Reddy
10	19HR1A0312	KALLIMAKULA HIMA BINDU	K. Hima Bindu
11	19HR1A0313	KUTAGULLA SAI SURENDRA	K. Sai Surendra
12	19HR1A0314	KALAMOLLA RUPESH	K. Rupesh
13	19HR1A0315	KOTAPALLI MUNI KUMAR	K. Muni Kumar
14	19HR1A0316	KOTHURUREDDYVARI MANJUNATHA REDDY	K. Manjunatha Reddy
15	19HR1A0317	MOLAGAMURU MIDHUN KUMAR	M. Midhun Kumar
16	19HR1A0318	MUTHYALA MAHESH	M. Mahesh
17	19HR1A0319	PALAGIRI FAYAZ	P. Fayaz
18	19HR1A0320	JAYA PRAKASH	Jaya Prakash
19	19HR1A0321	REDDIVARI REDDY KISHORE	R. Reddy Kishore
20	19HR1A0322	SHAIK ABLU HUSSAIN	Shaik ABLU Hussain
21	19HR1A0323	SATAMBAKAM KORRA CHANDU	S. K. Chandu
22	19HR1A0324	SANKARAPPA PRASAD	S. Prasad
23	19HR1A0325	SAYED SAYED BASHA	S. Sayed Basha

24	19HR1A0326	SUNDARAM S.TAMIL ARASAN	Sundaram T. Arasan
25	19HR1A0327	SAYED MUBARAK	S. Mubarak
26	19HR1A0329	SATHISH KUMAR	Sathish Kumar
27	19HR1A0330	THOTOLLA T.PAVAN KUMAR	T. pavan kumar
28	20HR5A0301	GADDAM SUBASH	Subash
29	20HR5A0302	M GOWTHAM	Gowtham
30	20HR5A0303	MAJJIGA YUGANDHAR	M. Jugandhar
31	20HR5A0304	PATHRI THARUN	P. Tharun
32	20HR5A0305	TALARI NARESH	T. Naresh

R. Sashi 7/13/22

CO-ORDINATOR

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Coordinator

R. T. S. 7/13/22
HOD

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Mechanical Engineering
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18	19HR1A0320	JAYA PRAKASH	P	P	P	P	P	P	A	P	P	P	P	P	P
19	19HR1A0321	REDDIVARI REDDY KISHORE	P	P	P	P	P	P	A	P	P	P	P	P	P
20	19HR1A0322	SHAIK ABLU HUSSAIN	P	P	P	P	P	P	P	P	P	P	P	P	P
21	19HR1A0323	SATAMBAKAM KORRA CHANDU	P	P	P	P	P	P	P	P	P	P	P	P	P
22	19HR1A0324	SANKARAPPA PRASAD	P	P	P	P	P	P	P	P	P	P	P	P	P
23	19HR1A0325	SAYED SAYED BASHA	P	P	P	P	P	P	P	P	A	P	P	P	P
24	19HR1A0326	SUNDARAM S.TAMIL ARASAN	P	P	P	P	P	P	P	P	P	P	P	P	P
25	19HR1A0327	SAYED MUBARAK	A	P	P	P	P	P	P	A	P	P	P	P	P
26	19HR1A0329	SATHISH KUMAR	P	P	P	P	P	P	P	P	P	P	P	P	P
27	19HR1A0330	THOTOLLA T.PAVAN KUMAR	P	P	P	P	P	P	P	P	P	P	P	P	P
28	20HR5A0301	GADDAM SUBASH	P	P	P	P	P	A	P	P	P	P	P	P	P
29	20HR5A0302	M GOWTHAM	P	P	A	P	P	P	P	P	P	P	P	P	P
30	20HR5A0303	MAJJIGA YUGANDHAR	P	P	P	P	P	P	P	P	P	P	P	P	P
31	20HR5A0304	PATHRI THARUN	P	P	P	P	P	P	P	P	P	P	P	P	P
32	20HR5A0305	TALARI NARESH	P	P	P	P	P	P	P	P	P	P	P	P	P
No. of Absent			3	1	2	0	1	2	3	2	1	0	0	0	0
Expert Signature:			Sa	Sa	Sa	Sa	Sa	Sa	Sa	Sa	Sa	Sa	Sa	Sa	Sec

R. Joshi 12/3/22
CO-ORDINATOR

R. Joshi 12/3/22
HOD
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DEPARTMENT OF MECHANICAL ENGINEERING ADD ON COURSE:: HYPERMESH (2103AOC02) QUESTION PAPER ACADEMIC YEAR 2021-2022

ANSWER ALL THE FOLLOWING QUESTIONS EACH CARRY EQUAL MARKS

15X2=30MARKS

1. What do u understand by CAE?
2. What are other similar techniques available & how they r different from them ?
3. What do u mean by liner & nonlinear analysis?
4. When need to use nonlinear analysis ?
5. What type of nonlinearity exist ?
6. What type of elements available in Hypermesh & application of different type of elements?
7. What do u understand by one d element & what is special engineering applications of it?
8. How u discretize a model ?
9. What are basic rules to start mesh ?
10. How u decide element size & density ?
11. What do u means by stress concentration & u mesh for such regions?
12. What are shape functions ?
13. What are iso-parametric elements and why do you use them ?
14. What is hour glassing ?
15. Talk about various types of elements.

R. Gashli 11/3/22.
CO-ORDINATOR

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R. T. S. R.
HOD 11/3/22

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DEPARTMENT OF MECHANICAL ENGINEERING
ADD ON COURSE :: HYPERMESH(2103AOC02)
III B.TECH, STUDENT EVALUATION FORM
Academic Year - 2021-2022

S.NO.	REGD. NO.	NAME OF THE STUDENT	GRADE
1	19HR1A0301	AAMURI BHARGAV KUMAR	A
2	19HR1A0303	DANDUVARI DEVI VARA PRASAD	A
3	19HR1A0304	GOVINDA SWAMY PRANAY KUMAR	C
4	19HR1A0306	GALLA SAI CHETHAN	A
5	19HR1A0307	GANAMUKALA SHARATH KUMAR	B
6	19HR1A0308	GOURANNAGARI SOWMYA	A
7	19HR1A0309	GORAJALA ESHWAR NAIDU	A
8	19HR1A0310	GONUGUNTLA PREM CHAND NAIDU	A
9	19HR1A0311	KOGILA PALLI ARUN KUMAR REDDY	A
10	19HR1A0312	KALLIMAKULA HIMA BINDU	A
11	19HR1A0313	KUTAGULLA SAI SURENDRA	A
12	19HR1A0314	KALAMOLLA RUPESH	B
13	19HR1A0315	KOTAPALLI MUNI KUMAR	A
14	19HR1A0316	KOTHURUREDDYVARI MANJUNATHA REDDY	C
15	19HR1A0317	MOLAGAMURU MIDHUN KUMAR	A
16	19HR1A0318	MUTHYALA MAHESH	D
17	19HR1A0319	PALAGIRI FAYAZ	B
18	19HR1A0320	JAYA PRAKASH	B
19	19HR1A0321	REDDIVARI REDDY KISHORE	A
20	19HR1A0322	SHAIK ABLU HUSSAIN	A
21	19HR1A0323	SATAMBAKAM KORRA CHANDU	C
22	19HR1A0324	SANKARAPPA PRASAD	A

23	19HR1A0325	SAYED SAYED BASHA	C
24	19HR1A0326	SUNDARAM S.TAMIL ARASAN	B
25	19HR1A0327	SAYED MUBARAK	A
26	19HR1A0329	SATHISH KUMAR	A
27	19HR1A0330	THOTOLLA T.PAVAN KUMAR	B
28	20HR5A0301	GADDAM SUBASH	D
29	20HR5A0302	M GOWTHAM	A
30	20HR5A0303	MAJJIGA YUGANDHAR	A
31	20HR5A0304	PATHRI THARUN	C
32	20HR5A0305	TALARI NARESH	B

Grade A>75%, B>65%, C>50%, D-FAIL

R. Sarthi 12/3/22.
CO-ORDINATOR

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Coordinator

R. T. S. P
HOD 12/3/22

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DEPARTMENT OF MECHANICAL ENGINEERING

ADD ON COURSE:: HYPERMESH (2103AOC02)

III B.TECH

AY 2021-2022

Feedback Form

Name of the Staff: 1. R SASIDHAR REDDY
2. A.ARUN KUMAR
3. B.NIRANJAN SIMHA

Choose:

- 5- Excellent
- 4- Very Good
- 3- Good
- 2- Fair
- 1- Poor

S.No	Description	5	4	3	2	1
1	Organization of Subject in Logical Sequence	✓				
2	Clarity and audibility of Speech	✓				
3	Method of Explanation with proper Illustrations & Examples	✓				
4	Way of Raising doubts & Effective clarification of doubts		✓			
5	Relevance of the lecture to the topic announced		✓			
6	Overall Performance	✓	.			

Suggestions if any:

S. Prasad
Signature (Optional)



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DEPARTMENT OF MECHANICAL ENGINEERING

ADD ON COURSE:: HYPERMESH (2103AOC02)

III B.TECH

AY 2021-2022

Feedback Form

Name of the Staff: 1. R SASIDHAR REDDY

2. A.ARUN KUMAR

3. B.NIRANJAN SIMHA

Choose:

5- Excellent

4- Very Good

3- Good

2- Fair

1- Poor

S.No	Description	5	4	3	2	1
1	Organization of Subject in Logical Sequence	✓				
2	Clarity and audibility of Speech	✓				
3	Method of Explanation with proper Illustrations & Examples		✓			
4	Way of Raising doubts & Effective clarification of doubts	✓				
5	Relevance of the lecture to the topic announced	✓				
6	Overall Performance	✓				

Suggestions if any:

V. Sai Suresh

Signature (Optional)



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DEPARTMENT OF MECHANICAL ENGINEERING

ADD ON COURSE:: HYPERMESH(Code:2103AOC02)

III B.TECH

AY 2021-2022

Feedback Analysis

Number of students submitted Feedback Forms: 32

Total number of Points: 160

S.No	Description	Excellent	Very Good	Good	Fair	Poor	%
1	Organization of Subject in Sequence	26	04	02	00	0	95
2	Clarity and audibility of Speech	28	04	00	00	0	97.5
3	Method of Explanation with proper Illustrations & Examples	25	03	04	00	0	93.12
4	Way of Raising doubts & Effective clarification of doubts .	25	02	05	00	0	92.5
5	Relevance of the lecture to the topic announced	24	06	02	00	0	93.75
6	Overall Performance	29	03	00	00	0	98.12
Total(Average)							94.99%

- Total Points ≥ 90 → Excellent (5 Points)
- Total Points ≥ 80 → Very Good (4 Points)
- Total Points ≥ 70 → Good (3 Points)
- Total Points ≥ 50 → Fair (2 Points)
- Total Points ≤ 49 → Poor (1 Points)

Feedback analysis report: The Add on course was excellent based on the feedback percentage that was given by the students.

R. Sashi, 14/3/22
CO-ORDINATOR

R.T.S
HOD 14/3/22

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Melumoi (Post), Palamaner-517408, Chittoor Dist., A.P.

Website: www.mtitech.edu.in email: mtieat@gmail.com ☎ 08579 268589



Certificate

This is to Certify that Mr./Ms. **AAMURI BHARGAV KUMAR** Reg, No. **19HR1A0301** Dept. of

Mechanical Engineering has successfully completed a course in "HYPERMESH", conducted by the department of

Mechanical Engineering, MTIET, Palamaner from 07th March 2022 to 12th March 2022 has obtained A grade.

R. Sathi

CO-ORDINATOR

R. Sathi

HOD

[Signature]

PRINCIPAL

Mother Theresa Institute of Engineering and Technology



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Melumoi (Post), Palamaner-517408, Chittoor Dist., A.P.

Website: www.mtitech.edu.in email: mtieat@gmail.com  08579 268589



Certificate

This is to Certify that Mr./Ms. **DANDUVARI DEVI VARA PRASAD** Reg. No. **19HR1A0303** Dept. of

Mechanical Engineering has successfully completed a course in "HYPERMESH", conducted by the department of

Mechanical Engineering, MTIET, Palamaner from 07th March 2022 to 12th March 2022 has obtained **A** grade.

R. Susha

CO-ORDINATOR

R. Susha

HOD

[Signature]

PRINCIPAL



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DEPARTMENT OF MECHANICAL ENGINEERING

Report-On
ADD ON COURSE :: HYPER MESH
Academic Year 2021-2022

* * * * *

The Department of Mechanical engineering has conducted a add on course on HYPERMESH organized for students of III Year Mechanical Engineering students during 7th March to 12th March 2022 to enhance the student knowledge to meet the future industrial demand. The faculties has given mix of theory and practical knowledge on hyper mesh.

This program was organized by Dr. R T Sarath Babu, Head of the department with the co-ordination of, R.Sasidhar Reddy, Assistant Professor, ME Department, A.Arun Kumar, Assistant Professor, ME Department, B.Niranjan Simha, Assistant Professor, ME Department

The Add on course was organized for six days effective from 07.03.2022 to 12.03.2022 with a total duration of 36 hrs. Thirty two students from Third year Mechanical Engineering were benefitted from this program. The program was held in Mechanical Seminar Hall for inauguration. Theory and technical session practical's were conducted in Communication lab.

TOPICS COVER

UNIT I

Introduction to Hyper mesh, Introduction about Hyper mesh, Introduction to CAE, Application of CAE Software, Advantages and Theory of FEM, Geometry, Create node, Node edit, Temp nodes, Distance, Dimensioning , Lines, Creation of surfaces and surface edit, Translate, Mid Surface Extraction, De featuring.

UNIT II

Geometry Clean Up Surface edges, Visualization tool bar, Display tool bar, Clean up using quick edit, 2D Meshing, Introduction to meshing , Auto meshing, Size & Biasing, Density and mesh style, Replace, re meshing, Current and surface components.

UNIT III

2d Mesh Quality, Quality Criteria, Aspect Ratio, Reducing The Trias Percentage, Quality index, T Connections, Free – Edges, Manual mesh Ruled Elem Offset.

UNIT IV

Tools, Number And Mass Calculation, Project , Position, 3d Hex Meshing , Introduction To 3d Meshing , Types Of 3d Elements, 3d Solid Mesh, Solid Map Commands, 3d Tetra Meshing, Tetra Parameters, Tet Collapse.

UNIT V

1d Mesh, Beam Elements, Bars, Rods, Rbe2 & Rbe3 Elements, Welding & Bolt Creation, Linear Meshing, Create Collectors, Material Properties, Load Constraints, Modal, Linear Static And Buckling Analysis, Deck Preparation, Material And Properties Assignment, Assign of Loads And Constraints, Saving The File Formats.

The add on course is successfully completed with the cooperation of each and every faculty member of the department and student participants.

Course Outcomes:

- Students were able to create hexa and penta mesh.
- Students were able to prepare models for analysis and geometry for meshing.



DURING LECTURE

R. Jasli 14/3/22
CO-ORDINATOR