Date: 1-2-2017

From,

Rohith S

Asst. Professor

Dept of Mechanical Engineering

ATMECE, Mysuru

To,

The Principal,

ATMECE, Mysuru

Through: HOD - ME

Respected sir,

SUB: Request to reimburse of FDP expenditures

With reference to above subject, I hereby request you to reimburse the expenditures of FDP on Theoretical and Computational Mechanics which I've attended from 19-01-2019 to 21-01-2019. The expenditures are as listed below.

1. Registration fees

1000/-

2. Bus to and fro fare

1130/-

Total

2130/-

Thanking you,

gin.)

Yours faithfully

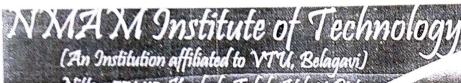
(Rohith S)

Forwarded to the principal with a sequest to do needful.

Co. Pattutal oil oil 2017

Approved

1/2/17



Nitte - 574110, Karkala Taluk, Udupi Dist Karnataka, India





Three Days Faculty Development Programme on

THEORETICAL AND COMPUTATIONAL

MECHANICS

(TEQIP II funded)

January 19 - 21, 2017



This is to certify that

Mr. ROHITH S.

A. T. M. E. C. E., Mysuru

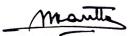
has participated in this programme organized by the Department of Mechanical Engineering of NMAM Institute of Technology, Nitte and sponsored by TEQIP 99 during January 19 - 21, 2017.



visit us @ nmamit.nitte.edu.in



Coordinator



Dr. Shashikanth Karinka

HOE

Dr. Niranjan N. Chiplunkar

Principal

From,

Date: 27-01-2017

KARTHIK KUMAR M

Asst.Professor

Dept of Mechanical Engineering

ATMECE, Mysuru

To,

The Principal,

ATMECE, Mysuru

Through: HOD - ME

Respected sir,

#### SUB: Request to reimburse of FDP expenditures

I thank college for giving me an opportunity to attend three Day Faculty Development Program held at NMAMIT Nitte. With reference to above subject, I hereby request you to reimburse the expenditures of FDP on Theoretical and Computational Mechanics which I've attended from 19-01-2017 to 21-01-2017. The expenditures are as listed below.

1. Registration fee

1000/- Rs

2. Bus to and fro fare

1130/- Rs

Total

2130/- Rs

Thanking you,

Yours faithfully

(KARTHIK KUMAR M)

Folwalded to the principal with a Request to Sanction the expenditure & do needful.

atterfal 27/01/2017

Approved

12/7

## NMAM Institute of Technology

(An Institution affiliated to VTU, Belagavi)

Nille-57440. Karkala yaluk ulumpi Dis

Karnataka, India





### CERTIFICATE OF PARTICIPATION

Three Days Faculty Development Programme on

THEORETICAL AND COMPUTATIONAL
MECHANICS

(TEQIP II funded)

January 19 - 21, 2017



This is to certify that

Mr. KARTHIK KUMAR M.

A. T. M. E. C. E., Mysuru

has participated in this programme organized by the Department of Mechanical Engineering of NMAM Institute of Technology, Nitte and sponsored by TEQIP II during January 19 - 21, 2017.

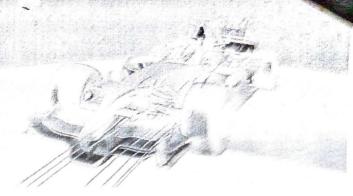


ابيك Mr. Nithin Kumar Mr. Veeresha R. K

Coordinator



Dr. Niranjar N. Chiplunkar Principal



## CERTIFICATE OF PARTICIPATION

THE Char

Figure Designment Partherenses

HEORETICAL AND COMPUTATIONAL

MECHANICS

(TEQIP | funded)

January 19 - 21, 2017



This is to centify that

Mr. RAKSHITHN

A. T. M. E. C. E. Marine

has participated in this programme organized by the Department of Mechanical Engineering of NMAM Institute of Technology, Nitte and sponsored by TECOP 99 during January 19 - 21, 2017.



visit us @nmamit.nitte.edu.in

Mr. Nithin Kumar Mr. Veeresha R. K. Coordinator

manth

Dr Shashikanth Karinka HOD

Night

Dr. Niranjan N. Chiplunkar Principal

Date: 1-2-2017

From. Yashwanth N Asst. Professor Dept of Mechanical Engineering ATMECE, Mysuru

To, The Principal, ATMECE, Mysuru

Through: HOD - ME

Respected sir,

#### SUB: Request for Reimbursement of FDP expenditures

With reference to above subject, I hereby request for the reimbursement of the expenditures of FDP on "Theoretical and Computational Mechanics" conducted by NMAMIT, Nitte during 19-01-2017 to 21-01-2017. The expenditures are as listed below.

1. Registration fees

1000/-

2. Bus to and fro fare

1130/-

Total

2130/-

Thanking you,

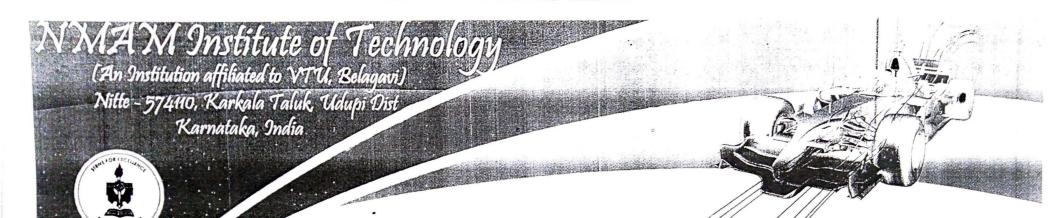
Yours faithfully

(Yashwanth N)

Folioalded to the principal with a request to sanction the seimbussement amount & do needful.

G. Rattitas
01/02/2017

Approved XIII)



### CERTIFICATE OF PARTICIPATION

Three Days Faculty Development Programme on

THEORETICAL AND COMPUTATIONAL
MECHANICS

(TEQIP II funded)

January 19 - 21, 2017



This is to certify that

Mr. YASHWANTH N.

A. T. M. E. C. E., Mysuru

has participated in this programme organized by the Department of Mechanical Engineering of NMAM Institute of Technology, Nitte and sponsored by TEQIP II during January 19 - 21, 2017.



Prit

Mr. Nithin Kumar Mr. Veeresha R. K.

Coordinator

Dr. Shashikanth Karinka

Dr. Niranjan N. Chiplunkar

N. marke

HOD

Principal

## FDP on Theoretical and Computional mechanics-2017

### NMAMIT, Nitte, Karkala-574110

Day 1: 19-01-2017

8.30 - 9.15: Registration and Breakfast

9.15-10.00: Inauguration

Session 1: 10.00 - 11.30

Speaker: Keynote address by

Dr. H S N Murthy,

Topics covered: Basics of solid mechanics and its computational techniques- Problems in solid mechanics: analytical and semi-analytical, tools for engineer, tools for design, Physical problem formulation, Engineering problem formulation.

- Solid mechanics
- O Failure of a component or structure- Material failure, excessive deformation,
  - Strength of material approach- Idealization of structures, Large number of assumptions based on observation.
  - Elastic Approach- Less simplified model, Governing Equations, Variables.
  - Analytical modeling.
  - Numerical modeling.

Inverse and semi inverse methods- Solution in radial coordinates: Michell.

Case study: Modelling of an Engineering Problem.

Tea break:11.30-11.45

Session 2: 11.45 – 1.15

Speaker: Dr. H K Rangavittal,

Professor, BMSCE, Bangalore

Topics covered: Basics of FEM & BEM.

Prof explained the application of computers in design process, need for computational method, finite element approach, finite element method – applications and limitations, direct approach for stiffness matrix formulation of bar element and Galerkin's method.

Also explained introduction to Boundary Element Method (BEM) and its application.

Lunch break: 1.15-2.00

Session 3: 2.00-3.15

Speaker: Dr. S N Shridhara,

Professor, KSSEM, Bangalore

### Topics covered:

Basic and application of CFD.

In session 3 prof explained about basic of Computational Fluid Dynamics (CFD).

- Complications of CFD Simultaneous flow of heat, mass transfer, phase change, chemaical reaction, mechanical movements.
- Steps involved in CFD Physics → Modeling → Numerics → Visualization.
- Uses of CFD- Analysis & Design, Knowledge & exploration.

He also discussed about main 3 law of conservation i.e., Mass conservation, Momentum equation and Energy Conservation.

Difference between Space discritization - Grid and Structured, unstructured.

Equation discritization - Finite difference method, Finite element method.

### CFD Applications

- Vehicle aerodynamics
  - o Parameters -
    - Co-efficient of drag on vehicle.
    - Location of aerodynamics centres.
    - Aerodynamics moments about 3 major axis.
    - Vehicle reaction at different cross winds.

In session 4 prof explained about Applications of CFD with some of case studies on aerodynamics.

Day 2: 20-01-2017

**Session 5**: 9.00 - 10.00

Speaker: Dr. T. Jayraju

Professor & Head, NIEIT, Mysuru

Topics covered: Basics of Fracture Mechanics

In basics of fracture mechanics prof stressed on Linear Elastic Fracture Mechanics (LEFM), theory of failure fractures – Stress concentration, Griffth starin energy theory, Irwins plasticity correction, Stress intensity factor, Crack tip plasticity, Irwins modified stress intensity factor, modes of fracture.

**Tea Break**: 10.00 - 10.15

**Session 6**: 10.15 - 1.00

Speaker: Dr. Shashidhar K Kudari

Professor, CVRCE Hyderabad

Topics covered: Non linear fracture mechanics

In the previous session Dr. T. Jayraju explained concepts of fracture mechanics and also linear elastic fracture mechanics. In this session prof stressed on Non linear fracture mechanics (Elastic Plastic Fracture Mechanics) - concepts of material deformation and failure in the context of solid mechanics when cracks are present, Fracture toughness, J integral, Crack tip opening displacement, Crack tip opening angle, 90° intercept method and some of applications.

Lunch Break: 1.00 – 2.00

**Session** 7: 2.00 - 3.00

Speaker: Dr. Srinivas Pai P

Professor and DOE,

NMAMIT, Nitte

Topics covered: Applications of vibration signal analysis using ANN.

Prof discussed about his research work on vibration signal analysis using Artificial Neural Network (ANN). Neural network is a simulation and working of human brain. Properties – generalization, graceful degradation, adoption and learning parallelism. He also discussed some of case studies regarding neural networks.

**Tea Break:** 3.00 - 3.15

**Session 8**: 3.15 - 4.30

Speaker: Mr.Mahadeva Nagaral

Design Engineer, HAL, Bangalore

**Topics covered:** Design, selection of materials and testing in an aerospace domain.

Speaker was from industry he explained how the aircrafts will be design, which material should be select and finally how testing will be done in aerospace industry.

Day 3: 21-01-2017

**Session 9**: 9.00 – 10.00

Speaker: Dr. Govinda Raju

Professor and Head, BMSITM, Bangalore

Topics covered: Fatigue fracture

Professor discussed about his research work on fatigue behavior. He discussed about material composition, casting and heat treatment, tensile push pull equipment, load crack opening displacement, fracture toughness test, fracture crack growth test and micromechanism of fracture.

**Session 10**: 10.00 – 4.00

Speaker: Mr. Shashidhar and Mr Aravind

Cyient LTD., Bangalore

Topics covered: Hands on (Ansys work bench 17.1)

These people explained how to use Ansys work bench 17.1 with some problems regarding static, dynamic, thermal and non linear analysis.

4.00 - 4.30 : Valedictory session

Date: 29-12-2016

From,

Suresh Kumar S

Asst.Professor

Dept of Mechanical Engineering

ATMECE, Mysuru

To,

The Principal,

ATMECE, Mysuru

Through: HOD - ME

Respected sir,

#### SUB: Request to reimburse of FDP expenditures

With reference to above subject, I hereby request you to reimburse the expenditures of FDP on Practical Durability Assessment of Automotive Structures and Welding Design which I've attended from 23-12-2016 to 24-12-2016. The expenditures are as listed below.

1. Registration fees

250/-

2. Bus to and fro fare

1130/-

Total

1380/-

Thanking you,

Yours faithfully

(Suresh kumar S)

Forwarded to the principal with a sequest to approve and do needful.

a fattustas
29/12/2016

Approved

Jen 29/12/16

Date: 30-12-2016

From,

Ramanuja C.M

Asst.Professor

Dept of Mechanical Engineering

ATMECE, Mysuru

To,

The Principal,

ATMECE, Mysuru

Through: HOD - ME

Respected sir,

#### SUB: Request to reimburse of FDP expenditures

With reference to above subject, I hereby request you to reimburse the expenditures of FDP on Practical Durability Assessment of Automotive Structures and Welding Design which I've attended from 23-12-2016 to 24-12-2016. The expenditures are as listed below.

1. Registration fees

250/-

2. Bus to and fro fare

1130/-

Total

1380/-

Thanking you,

Yours faithfully

Ramanuja .C.M)

Forwarded to the principal with a sequest to Consider and do needful. G. Rattital 02/01/2017

Approved

Pul Alilio



## NMAM Institute of Technology



(Au Autonomous Institution affiliated to VTU, Belagavi)

# Two Days Faculty Development Programme on

Practical Durability Assessment of Automotive Structures and Welding Design (PDAWD - 2016)

December 23-24, 2016 (TEQIP II funded)

## CERTIFICATE OF PARTICIPATION

This is to certify that

Prof. RAMANUJA C. M. ATME College of Engineering, Mysuru

has participated in this programme organized by the Department of Mechanical Engineering of NMAM Institute of Technology, Nitte and sponsored by TEQIP II, during December 23-24, 2016.

Huinoppo.

Dr. Mallikappa

Coordinator

Dr. Shashikantha Karinka

HOD

Dr. Niranjan N. Chaplunkar

Principal

#### Report on Faculty development Programme

With respect to above I attended Two day workshop on **Practical durability assessment of automotive structures and welding design** held at NMAM Institute of Technology NITTE Karkala. FDP was related to my Ph.D work. Two resource persons are Mr Sathya Prakash, chief Technical officer Mahesh software solution, Pune and Dr Ravichandran, AGM ,BHEL Trichy.

On first day 23/12/16 Mr. Sathya Prakash handled Morning session on Introduction to product Development and Durabilty in Product development related to Automotive structures. In this he explained about product design process in detail. On afternoon session he covered on structural loading, types of loading on automotive, data acquisitions, analysis of vehicle structure data and CAE fatigue simulation.

Second day 24/12/16 Dr G Ravichandran Explained about Stress analysis of welding joint, welding joint, welding design, Introduction to fatigue of Materials ,Residual stresses during welding and FEM analysis of residual stresses.

In valedictory function Certificates of participation were then awarded to each of the participants by principal and HOD.

The College and hospitality was good. Over all FDP was Knowledge gaining, useful and helped me for My Ph.D work.

