Bharath Institute of Higher Education and Research

[Declared Under Section 3 of UGC Act, 1956]
Chennai – 600 073

INTERNAL QUALITY ASSURANCE CELL (IQAC)

DOCUMENTS SUBMISSION FORM

Date of Submission	22/12/2020
Type of Documents	Value Added Course program Report (online)
Description	Introduction to AutoCAD in Geological Applications
Enclosures	a) Requisition letter
	b) Circular
	c) Curriculum
	d) Schedule
	e) Attendance Sheet
	f) feedback form
	g) Certificate
	h) Image
No. of Pages	12
Submitted By	**Name** : R. HARIHARAN
	Designation : Assistant professor
	Department : Mechanical Engineering
	Signature :

For Office Use Only

Verified By:	K. Sakthivel	Sign:	Date: 22/12/15
Uploaded By:	K. S. Senthil Kumar	Sign:	Date: 22/12/15
File Name:	MECH - ME - VAC - 2020 - 2021 - 002		

Internal Quality Assurance Cell IQAC Selaiyur Chennai-73 BIHER

IQAC - BIHER

Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)

Requisition Letter

Date: 12.11.2020

From

The HOD,

Department of Mechanical Engineering,

Bharath Institute of Higher Education and Research,

Selaiyur, Chennai.

To

The Dean Engineering,

Bharath Institute of Higher Education and Research,

Selaiyur, Chennai.

Respected Sir,

Sub: Requisition for conducting online Value added course – reg.

School of Mechanical Sciences has planned to conduct Value added course on "Introduction to AutoCAD in Geological Applications" on 9/12/2020. In this regard we kindly request you to grant permission for the same.

Thanking You

HOD/MECH

Dean Engineering

Head of the Department
Department of Mechanical Engineering
Bharath Institute of Higher Education and Research
(Dec.u/s 3 of UGC Act.1956)
Selaiyur, Chennai-600 073

DEAN
BHARATH INSTITUTE OF HIGHER EDUCATION & RESEARCH
(Declared as Deemed to be University U/S 3 of UGC Act. 1956)
Chennai-600 073, INDIA.

Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)

Date: 16.11.2015

Department of Mechanical Engineering

Circular

The of Department of Mechanical Engineering, BIHER glad to conduct online 5 days value added program on "***Introduction to AutoCAD In Geological Applications***" from 09.12.2020 for 30 hours. Those who are interested to participate do register your name to the program coordinator.

Al reregistered students must attend all the classes without fail. The students who are completed the course successfully with good score will get the course completion certificate from the institute/Department.

Resource person: Mr.R.Hariharan and Mr.R J Golden Renjith Nimal

Maximum no. of registration Allowed – 60.

***First come first serve basis.**

Program coordinator

Mr.V.Jose Ananth Vino

Mr.N. Lenin Rakesh

Department of Mechanical Engineering
BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH
Chennai-600 073

Department of Mechanical Engineering

Introduction to AutoCAD in Geological Applications

OBJECTIVE:

- To demonstrate understanding of computer science fundamentals.
- To demonstrate programming proficiency in a modern language.
- To demonstrate fundamental software engineering skills on a non-trivial project to the satisfaction of a client.
- To demonstrate the ability to communicate effectively.

MODULE I Introduction To Computer Graphics Fundamentals **(5Hrs)**
[DAY: 1]

Output primitives (points, lines, curves etc.,), 2-D & 3-D transformation (Translation, scaling, rotation) windowing - view ports - clipping transformation. Concepts in CAD - Elements needed for designing.

Curves and Surfaces Modeling: Introduction to curves - Analytical curves: line, circle and conics – synthetic curves: Hermite cubic spline- Bezier curve and B-Spline curve – curve manipulations. Introduction to surfaces - Analytical surfaces: Plane surface, ruled surface, surface of revolution and tabulated cylinder – synthetic surfaces: Hermite bicubic surface- Bezier surface and B-Spline surface- surface manipulations.

MODULE II Engineering Geology **(5Hrs)**

[DAY: 2]
Engineering geology in theory and practice. Geological structures and discontinuities, engineering properties of rocks, engineering properties of jointed rocks, geo mechanical classification of rock mass. Physic mechanical properties of building stones and aggregate, alkali aggregate reaction. Geotechnical investigation for dam site, reservoir site; geotechnical study for road alignment; geotechnical evaluation of tunnel alignment, methods of tunneling, classification of ground for tunneling purposes, various types of support system; geotechnical investigations for bridge foundation and building foundation; Rock burst and bumps.

MODULE III Coal Geology **(5Hrs)**

[DAY: 3]
Coal and its properties: Different varieties and ranks of coal. Origin of coal.Type of depositional processes.Coalification process and its causes.Introduction to Organic Petrology and Organic Geochemistry. Sediments closely associated with coal (coal balls, tonsteins, seat-earths, under-clays, fire-clays and soils). Lithotypes, microlithotypes and macerals: their physical, chemical

and optical properties. Maceral analysis of coal: Mineral and organic matter in coal. Petrographical methods and tools of examination. Application of coal geology in hydrocarbon exploration

MODULE III Structural Geology **(5 Hrs)**

[DAY: 4]

Methods of constructing profiles of folds: Convolute and evolute methods, Concentric-arc method, Kink-style construction, Dip-isogon method, Down-plunge projection method Tectonites: Different types and their significance. Petrofabric analysis.Relationship between deformation and metamorphism and criteria for recognition.Relative dating of orogenic belts. Principles of Structural Analysis. Interference patterns in superposed folding and structural geometry in superposed folding. Behavior of lineations in superposed deformations. Use of foliations and lineations in tectonic analysis.Different phases of analysis, analysis of slate belts with simple and multiple deformations.Mapping in gneiss terranes.Migmatite complexes, reworking of basement rocks, mantled gneiss domes.

MODULE IV Paleontology **(5 Hrs)**
[DAY: 5]

Definition and scope of paleobiology, process of fossilization, preservation potential of organisms. Elementary ideas about origin of life, evolution and fossil record. Systematic classification of organisms – their characters, environmental factors. Ontogeny and variation in fossil assemblages. Identification of fossils: methods of description and illustration; taxonomic categories and codes of systematic nomenclature. Morphology, environment and geological distribution of brachiopoda, mollusca, echinodermata, arthropoda, and anthozoa. Introduction to Palynology and paleobotany; morphology of typical Gondwana flora.

MODULE V Economic Geology **(5 Hrs)**

[DAY: 6]

Terminology: Syngenetic/epigenetic, stratiform/stratabound ores, Hypogene and supergene ores, ore and gangue minerals, grade and Tenor. Mode of occurrence and controls of ore deposition. Temporal pattern and distribution of types of ores through geologic time. Distribution and brief geological aspects of important Indian metallic and non-metallic deposits.

Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)

Department of Mechanical Engineering

One Week Value added Program on "*Introduction to AutoCAD in Geological Applications*"

9th Dec to 15th Dec 2020

Date	Morning Session (9 AM – 12 PM)	Afternoon Session (1:30 PM – 3:30 PM)
09 – 12 – 2020	**Program Inauguration** **Mr.R.Hariharan** ***Introduction To Computer Graphics Fundamentals:*** *Output primitives (points, lines, curves etc.,), 2-D & 3-D transformation (Translation, scaling, rotation) windowing - view ports - clipping transformation. Concepts in CAD - Elements needed for designing.*	**Mr.R J Golden Renjith Nimal** ***Curves and Surfaces Modeling:*** *Introduction to curves - Analytical curves: line, circle and conics – synthetic curves: Hermite cubic spline- Bezier curve and B-Spline curve – curve manipulations. Introduction to surfaces.*
10 – 12 – 2020	**Mr.R J Golden Renjith Nimal** *Engineering geology in theory and practice. Geological structures and discontinuities, engineering properties of rocks, engineering properties of jointed rocks, geo mechanical classification of rock mass. Physic mechanical properties of building stones and aggregate, alkali aggregate reaction.*	**Mr.R.Hariharan** *geotechnical evaluation of tunnel alignment, methods of tunneling, classification of ground for tunneling purposes, various types of support system; geotechnical investigations for bridge foundation and building foundation; Rock burst and bumps.*
11 – 12 – 2020	**Mr.R.Hariharan** *Coal and its properties: Different varieties and ranks of coal. Origin of coal.Type of depositional processes.Coalification process and its causes.Introduction to Organic Petrology and Organic Geochemistry.*	**Mr.R J Golden Renjith Nimal** *Lithotypes, microlithotypes and macerals: their physical, chemical and optical properties. Maceral analysis of coal: Mineral and organic matter in coal.*
12 – 12 – 2020	**Mr.R J Golden Renjith Nimal** *Methods of constructing profiles of folds: Convolute and evolute methods, Concentric-arc method, Kink-style construction, Dip-isogon method, Down-plunge projection method Tectonites.*	**Mr.R.Hariharan** *Interference patterns in superposed folding and structural geometry in superposed folding. Behavior of lineations in superposed deformations. Use of foliations and lineations in tectonic analysis.*
14 – 12 – 2020	**Mr.R.Hariharan** *Definition and scope of paleobiology, process of fossilization, preservation potential of organisms. Elementary ideas about origin of life, evolution and fossil record. Systematic classification of organisms – their characters, environmental factors.*	**Mr.R J Golden Renjith Nimal** *Morphology, environment and geological distribution of brachiopoda, mollusca, echinodermata, arthropoda, and anthozoa. Introduction to Palynology and paleobotany; morphology of typical Gondwana flora.*
15 – 12 – 2020	**Mr.R J Golden Renjith Nimal** ***Terminology:*** *Syngenetic/epigenetic, stratiform/stratabound ores, Hypogene and supergene ores, ore and gangue minerals, grade and Tenor. Mode of occurrence and controls of ore deposition.*	**Mr.R.Hariharan** *Temporal pattern and distribution of types of ores through geologic time. Distribution and brief geological aspects of important Indian metallic and non-metallic deposits.* ***Quiz/ Feedback / valedictory Session***

Program Coordinator:
Mr.V.Jose Ananth Vino
Mr.N. Lenin Rakesh
Assistant Professor,
E-Mail: joseananth.mech@bharathuniv.ac.in
leninrakesh.mech@bharathuniv.ac.in

Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)

09-12-2020

Introduction to AutoCAD In Geological Applications

Attendance sheet

S.No	Reg.No	Name	Department
1.	U13ME016	AKHILESH KUMAR	Mechanical Engineering
2.	U13ME017	AKSAH KUMAR PATEL	Mechanical Engineering
3.	U13ME018	ALAKE DAHANGA	Mechanical Engineering
4.	U13ME019	ALI ASGAR KHAN	Mechanical Engineering
5.	U13ME020	ALKESH RAJ	Mechanical Engineering
6.	U13ME048	ASWIN K	Mechanical Engineering
7.	U13ME049	BALAJI P	Mechanical Engineering
8.	U13ME050	BHARATHKUMAR S	Mechanical Engineering
9.	U13ME051	BIJENDRA KUMAR SINGH	Mechanical Engineering
10.	U13ME052	BIKASH CHANDRA ROY	Mechanical Engineering
11.	U13ME094	JOHN CHARLES	Mechanical Engineering
12.	U13ME095	JOHN VICTOR M	Mechanical Engineering
13.	U13ME096	JOSEPH ROSARIO J	Mechanical Engineering
14.	U13ME097	KALIRAJAN S	Mechanical Engineering
15.	U13ME098	KANNADHASAN K	Mechanical Engineering
16.	U13ME142	PARAMESHWAR S	Mechanical Engineering

17.	U13ME143	PAVITR KUMAR	Mechanical Engineering
18.	U13ME144	PAWAN KUMAR SINGH	Mechanical Engineering
19.	U13ME145	PIYUSH MOHAN	Mechanical Engineering
20.	U13ME146	PRAKASH K	Mechanical Engineering
21.	U13ME149	PREETHAM ANANTHA PANDIAN	Mechanical Engineering
22.	U13ME150	PRITAM SANKAR DHUPAL	Mechanical Engineering
23.	U13ME071	DINESH KANNAN	Mechanical Engineering
24.	U13ME072	DINESH.M	Mechanical Engineering
25.	U13ME151	PRIYADARSHINI G	Mechanical Engineering
26.	U14ME331	SIVAKUMAR B	Mechanical Engineering
27.	U14ME332	SIVARAMAN.T	Mechanical Engineering
28.	U14ME333	SOMA SUNDARAM.L	Mechanical Engineering
29.	U14ME334	SOMU VASU	Mechanical Engineering
30.	U14ME335	SONAL PATHAK	Mechanical Engineering
31.	U14ME520	D HARSHA PRIYADARSHAN	Mechanical Engineering
32.	U14ME701	DEEP JYOTHI BHATTACHARJEE	Mechanical Engineering
33.	U14ME702	RAJ KUMAR.D	Mechanical Engineering
34.	U14ME241	PATNANA SAGAR	Mechanical Engineering
35.	U14ME242	PAUL JOSHUA.J	Mechanical Engineering
36.	U14ME180	KOTHA RAKESH	Mechanical Engineering
37.	U14ME181	KOUSHIK.R	Mechanical Engineering
38.	U14ME182	KRISHNA KUMAR DIWAKAR	Mechanical Engineering

39.	U14ME183	KUNDAN KUMAR GOND	Mechanical Engineering
40.	U14ME184	LOKESH.K	Mechanical Engineering
41.	U14ME047	ARUN.K	Mechanical Engineering
42.	U14ME048	MD ASGAR ANSARI	Mechanical Engineering
43.	U14ME049	ASGHARIMAM	Mechanical Engineering
44.	U14ME050	ASHOK KUMAR YADAV	Mechanical Engineering
45.	U14ME051	ASHOK YADAV.L.	Mechanical Engineering
46.	U14ME052	ASHUTOSH KUMAR JHA	Mechanical Engineering
47.	U14ME053	ASHWINI KUMAR RATHORE	Mechanical Engineering
48.	U14ME054	ASHWIN PRABHU.P	Mechanical Engineering
49.	U14ME055	ASIF HODA	Mechanical Engineering
50.	U14ME056	ATHIBAN BUCKLE DURAI.A	Mechanical Engineering
51.	U14ME011	ADITYA RAJ	Mechanical Engineering
52.	U14ME012	AFZAL IMAM	Mechanical Engineering

Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)

FEEDBACK FORM

❖ As part of a continuing improvement process, our college appreciates suggestions and inputs regarding the institution. We request you to sincerely answer these questions under assurance of complete confidentiality. Your interest in making our institution better is greatly appreciated.

Name of Department : Mechanical Engineering

Date : 9/12/2020

Event / Speaker Name : Introduction to Auto-CAD in Geological Application

- Please rate the session on the scale indicated. Your comments are most appreciated.

S.NO	Parameters	Below Average	Average	Good	Excellent	Outstanding
1.	**The Topic**					
	The choice of topic was relevant to me			✓		
2.	**The Lecturer / Speaker**					
	Self-confidence			✓		
	Communication skills				✓	
	Doubts/ queries were answered satisfactorily			✓		
3.	**The Content (Topic)**					
	Refers to latest developments in the field			✓		
	Career oriented			✓		
	Innovative learning, if any				✓	

- Overall, how would you rate this Guest Lecture / Workshop / Seminar / Event/Value added course?

1. Below Average	2. Average	3. Good	4. Excellent	5. Outstanding
			✓	

- Comments (If any): Lecture is very good.

Department of Mechanical Engineering
BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH
Chennai-600 073

Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)

FEEDBACK FORM

❖ As part of a continuing improvement process, our college appreciates suggestions and inputs regarding the institution. We request you to sincerely answer these questions under assurance of complete confidentiality. Your interest in making our institution better is greatly appreciated.

Name of Department : Mechanical Engineering

Date : 9/12/2020

Event / Speaker Name : Introduction to AutoCAD Geological Applications

- Please rate the session on the scale indicated. Your comments are most appreciated.

S.NO	Parameters	Below Average	Average	Good	Excellent	Outstanding
1.	**The Topic**					
	The choice of topic was relevant to me				✓	
2.	**The Lecturer / Speaker**					
	Self-confidence			✓		
	Communication skills				✓	
	Doubts/ queries were answered satisfactorily				✓	
3.	**The Content (Topic)**					
	Refers to latest developments in the field				✓	
	Career oriented				✓	
	Innovative learning, if any				✓	

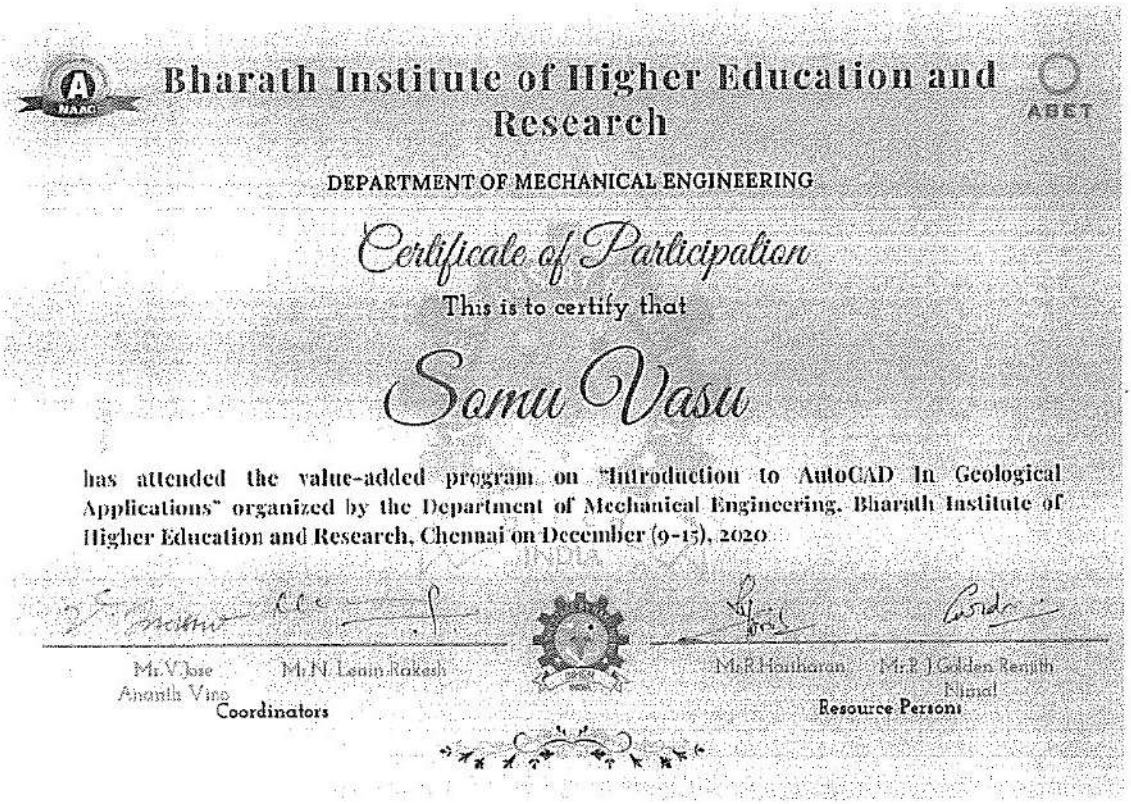
- Overall, how would you rate this Guest Lecture / Workshop / Seminar / Event/Value added course?

1. Below Average	2. Average	3. Good	4. Excellent	5. Outstanding
			✓	

- Comments (If any): very good Sessions.

Department of Mechanical Engineering
BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH
Chennai-600 073

Certificate



Bharath Institute of Higher Education and Research

ABET

DEPARTMENT OF MECHANICAL ENGINEERING

Certificate of Participation

This is to certify that

Somu Vasu

has attended the value-added program on "Introduction to AutoCAD In Geological Applications" organized by the Department of Mechanical Engineering, Bharath Institute of Higher Education and Research, Chennai on December (9-15), 2020

Mr.V.Jose Ananth Vinz — Mr.N.Leon Rakesh

Coordinators

Mr.R.Hariharan — Mr.R.J.Golden Renjith Nimal

Resource Persons