



# LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade, ISO 9001:2015 Certified Institution

Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada

L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

## DEPARTMENT OF CIVIL ENGINEERING REPORT ON CERTIFICATION PROGRAM ON AUTOCAD PROFESSIONAL

Event Type : Two-week workshop

Date / Duration : 19-11-2018 to 01-12-2018 .

Resource Person : Mr.Sk.Jani Basha, Mr.N.Srikanth, Mentor, APSSDC

Name of Coordinator : P. Mohana Gangaraju

Target Audience : II Year B.Tech Students

Total no of Participants : Students: Internal - 03

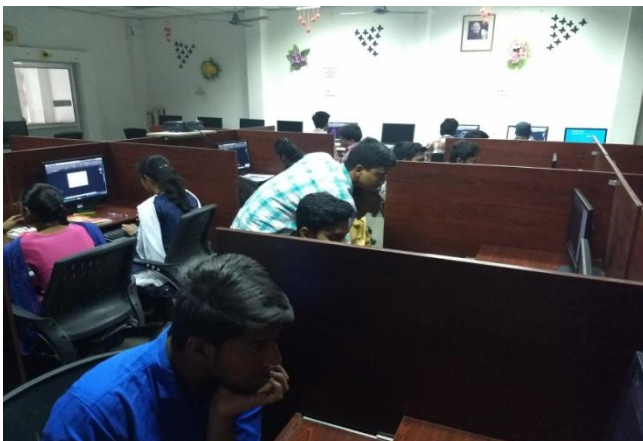
Objective of the event :  
To teach students the basic commands and tools necessary for professional 2D drawing, design and drafting using AutoCAD.

Outcome of event :

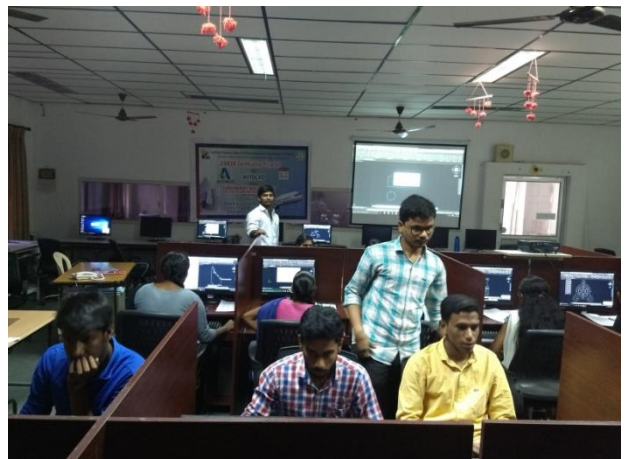
- Use AutoCAD for daily working process.
- Navigate throughout AutoCAD using major navigating tools
- Understand the concept and techniques to draw.
- Create layers to control the objects' visibility
- Plot or print the drawing by scale.
- To use constraint for certain design.
- To become an AUTOCAD certified professional

Feedback / Suggestions : Students gave positive feedback on the workshop and requested to conduct more workshops like certified courses

Photographs :



Resource person clarifying doubts on  
AUTOCAD



Students practicing

Press Clippings : Nil

### **REPORT**

Skill Development Centre, LBRCE (SDC-LBRCE) in association with Andhra Pradesh State Skill Development Corporation (APSSDC) conducted Two week Certification programme on “AUTOCAD” for B.Tech Aerospace and Civil students from 19 November 2018 to 01 December 2018 to explore the hybrid engineering environment using AutoCAD. Dr.K.Apparao, Principal of LBRCE welcomed the participants and stated the importance of AUTOCAD in latest application areas and also insisted the students to follow the sessions carefully. Dr.K.S.M.V.Kumar, SDC-LBRCE co-ordinator suggested the students that it is an opportunity to add additional skill set, so that students can capture the jobs easily. He promised to arrange many hands-on training programs in future. Dr.V.Ramakrishna, HOD of Civil Department addressed the students to be interactive in these sessions and take positive output from the program as civil engineering drawing using AUTOCAD has become an integral part in their career. Dr. P. Lovaraju, HOD Aerospace, Stressed the importance of computer aided designs in the broad field of engineering and instructed the students to acquire in depth knowledge on these certification courses which could be helpful for their career. The Resource persons Mr.Sk.Jani Basha and N.Srikanth trained the students on AUTOCAD with both theory and practical knowledge.

They have covered following topics with hands-on practice:

- ♣ Introduction of AUTOCAD
- ♣ Advanced tool managements
- ♣ Parametric modelling
- ♣ Drafting of simple objects
- ♣ Application of commands to solve an assignment problem



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## DEPARTMENT OF CIVIL ENGINEERING

### REPORT ON EVENT STUDENT TECHNICAL ACTIVITY

Event Type : Elocution

Date / Duration : 14-09-2018 One day

Name of Coordinator : B Rama Krishna

Target Audience : 20(Civil I & I year)

Total no of Participants: 14 (Civil I & II year)

Objective of the event: To acquisition of knowledge about innovative concepts of civil engineering and improve communication and vocabulary skills.

Outcome of event : The Elocution competition evolved good response from the first year B.Tech students of Civil engineering and they procured knowledge about innovative things in civil engineering and they improved their communication skills through this competition.

Feedback / Suggestions: Received positive feedback from participants regarding event conducted and about Organising the event

Photographs :



Students participating in elocution competition and faculty members are evaluating

Paper Clippings : Nil



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## DEPARTMENT OF CIVIL ENGINEERING

### REPORT ON EVENT STUDENT TECHNICAL ACTIVITY

Event Type : Bridge It (Model making)

Date / Duration : 29-08-2018 One day

Name of Coordinator : K Jaya Rao

Target Audience : 48(Civil II & III year)

Total no of Participants: 58 (Civil II & III year)

Objective of the event: To acquisition of knowledge about application of basic engineering to practical through model making

Outcome of event : The quiz evolved a large response from the second and third year B.Tech students of Civil and of engineering and they got to know the difference between theory to practical by making civil engineering bridges as a model

Feedback / Suggestions: Received positive feedback from participants regarding event conducted and about Organising the event

Photographs :



Students participating in model making competition



Students participating in model making competition



Instructions are giving by faculty and student coordinators



Models are evaluating by civil HOD



Certificates distributing to winners by Civil Department HOD

Paper Clippings : Nil



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## DEPARTMENT OF CIVIL ENGINEERING

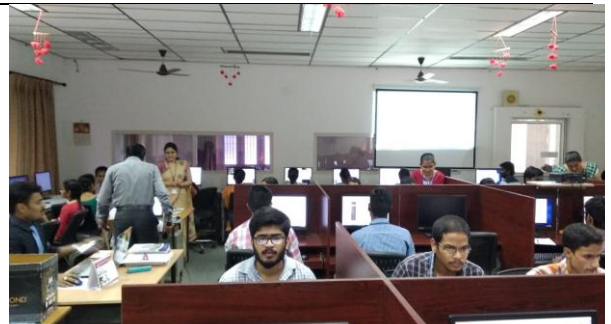
### REPORT ON TWO DAY WORKSHOP ON GIS PROFESSIONAL TRAINING

Event Type	Workshop
Date / Duration	11.9.2018 to 12.9.2018
Resource Person	Dr K.B. Chari, Director, GIS Labs, Hyderabad
Name of Coordinator	Sri J. Rangaiah, Associate Professor and Mrs Y. Laxmi Veena, Assistant Professor
Target Audience	B Tech Civil 4 <sup>th</sup> year students
Total no of Participants	60 (internal)
Objective of the event	To provide hands-on training using QGIS software to learn the fundamentals of the GIS analysis.
Outcome of event	<ul style="list-style-type: none"> <li>Applying the fundamentals of GIS analysis using QGIS software for working with vectors, raster, mosaicing, creating digital layers, and spatial queries</li> </ul>
Feedback / Suggestions	<ul style="list-style-type: none"> <li>Able to correlate the concepts studied with that in practice</li> <li>Obtained invaluable exposure by working with software through hands-on-practice sessions</li> <li>Realized importance of the subject in present day context</li> <li>Advanced topics covering a practical case and handling of real-life data is required</li> </ul>

### Photographs



Dr K.B. Chari addressing the students



Section of gathering



Section of gathering



Certificate distribution to participants



# జీఐఎస్ సాఫ్ట్‌వేర్‌తో ప్రయోజనం

మైలవరం: పెద్ద పెద్ద భవనాల నిర్మాణానికి జీఐఎస్ సాఫ్ట్‌వేర్ చాలా ఉపయోగపడుతుందని హైదరాబాదు జీఐఎస్ ల్యాబ్ డైరెక్టర్ కే.బీ. చారి పేర్కొన్నారు. మైలవరం లకిరెడ్డి బాలిరెడ్డి ఇంజనీరింగ్ కళాశాలలో సివిల్ ఇంజనీ

రింగ్ చివరి సంవత్సర విద్యార్థులకు జీఐఎస్ ప్రొఫెషనల్ శిక్షణపై రెండ్రోజుల కార్యశాల నిర్వహించారు. ఈ సందర్భంగా ఆయన మాట్లాడుతూ రిజర్వాయర్లు, డ్యాంలు, రహదారులు, వైపులైనులు, కాలువలు, చెరువులు, రైల్వే లైను

నిర్మాణంలో కావాల్సిన స్థలం ఎంపిక ఈ సాఫ్ట్‌వేర్ ద్వారా తేలికపడుతుందని చెప్పారు. వరదలు, తుఫాన్లు సంభవించినప్పుడు జరిగే నష్టాలను మందింపు చేయటానికి ఉపయోగించవచ్చని వివరించారు. నగర ప్రణాళిక రచనల్లోనూ విరివిరిగా వాడుతున్నారని తెలిపారు. సివిల్ ఇంజనీరింగ్ విద్యార్థులకు జీఐఎస్ సాఫ్ట్‌వేర్ చాలా ముఖ్యమైన అంశమని పేర్కొన్నారు. దాన్ని నేర్చుకోవటం ద్వారా ఉద్యోగ అవకాశాలను పొందవచ్చని సూచించారు. అనంతరం విద్యార్థులకు ప్రవేశకరణ పత్రాలను అందజేశారు. కార్యక్రమంలో ప్రిన్సిపాల్ కె.అప్పారావు, ఉప ప్రిన్సిపాల్ కె.శ్రీనివాసరెడ్డి, విభాగాధిపతి వి.రామకృష్ణ, స్టూడెంట్ చాప్టర్ సమన్వయకర్త బి.రామకృష్ణ, జె.రంగయ్య తదితరులు పాల్గొన్నారు.



ప్రయోగశాలలో శిక్షణ పొందుతున్న విద్యార్థులు

Eenadu 13.9.2018

## REPORT

A two day workshop on GIS Professional Training is organized in Civil Engineering Department under Mylavaram Student chapter Civil of IE (I) during 11-12<sup>th</sup> Sept 2018 with Dr K.B. Chari, Director GIS Labs, Hyderabad acting as Resource Person.

The students were briefed about the fundamental concepts of RS & GIS and the several applications that are currently used. The GIS analysis is very useful in identifying suitable locations for pipe lines, canal works, Irrigation projects, road & railway networking, waste management etc. without causing much of environmental damage. It is widely used in the flood and disaster management, assessment of spread of sporadic diseases, environmental impact assessments, urban expansions, town planning etc. Hence GIS analysis is important for the civil engineering students to meet diversified demands of the subject and an exposure to GIS software will also increase the job opportunities to the civil engineering students.

The students were introduced to the widely used QGIS software in GIS analysis. The students were taught the basic steps in using the software through hands-on-practice sessions along with examples for working with vectors, raster, mosaicing, creating digital layers, and spatial queries etc. The workshop is fully interactive and all the students participated enthusiastically and got enriched with the technical contents of the subject in the end.



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## DEPARTMENT OF CIVIL ENGINEERING

### REPORT ON ONE DAY SEMINAR ON WATER RESOURCES MANAGEMENT – CONCEPTS, PROBLEMS AND SOLUTIONS

Event Type	Seminar
Date / Duration	7.8.2018
Resource Person	Dr P. Lakshminarayana, Associate Professor, Department of Hydraulics and Water Resources Engineering, Wolatia Soda University, Ethiopia.
Name of Coordinator	Sri J. Rangaiah and Sri M. Satyanarayana
Target Audience	B Tech Civil 3 <sup>rd</sup> and 4 <sup>th</sup> year students
Total no of Participants	110 (internal)
Objective of the event	To educate the students the importance of water resource management in today's context in general, and urban water management in particular, using modern and conventional techniques
Outcome of event	<ul style="list-style-type: none"><li>• Appraisal of the fundamentals of water resource management techniques</li><li>• Comparing the conventional and modern techniques available</li><li>• Correlating the techniques with that in practice through case studies</li></ul>
Feedback / Suggestions	<ul style="list-style-type: none"><li>• Able to correlate the concepts studied with that in practice</li><li>• Realized importance of the subject in present day context</li></ul>

### Photographs



Dr P. Lakshminarayana



Section of gathering





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## DEPARTMENT OF CIVIL ENGINEERING

### REPORT ON

### TWO-WEEK WORKSHOP PROGRAM ON REVIT - ARCHITECTURE

Event Type : Two-week Workshop Program

Date / Duration : 13-05-2019 to 25-05-2019.

Resource Person : Ms. M. Pravalika, Ms. B. Divya Gayathri, Mentors, APSSDC

Name of Coordinator : P. Mohana Gangaraju

Target Audience : II Year B.Tech Students

Total no of Participants : Students: Internal - 31

Objective of the event :

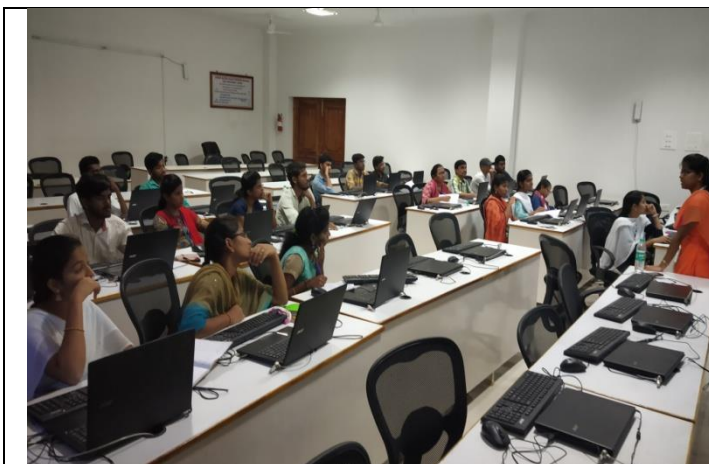
To teach students the basic commands and tools necessary for professional building design, drawing and modeling process using Revit-Architecture.

Outcome of event :

- Use basic Revit commands and features to create parametric models and produce architectural drawings.
- Display basic Revit skills needed for an intermediate level course.

Feedback / Suggestions : Students gave positive feedback on the workshop and requested to conduct more workshops like certified courses

Photographs :



Resource person delivering class on Revit-ARCHITECTURE



Resource person delivering class on Revit-ARCHITECTURE

Press Clippings : Nil

## REPORT

Skill Development Centre, LBRCE (SDC-LBRCE) in association with Andhra Pradesh State Skill Development Corporation (APSSDC) conducted Two week Certification programme on “Revit-ARCHITECTURE” for II-B.Tech Civil students from 13 May 2019 to 25 May 2019. Dr.K.Apparao, Principal of LBRCE welcomed the participants and stated the importance of Revit-ARCHITECTURE in latest application areas and also insisted the students to follow the sessions carefully. Dr.K.S.M.V.Kumar, SDC-LBRCE co-ordinator suggested the students that it is an opportunity to add additional skill set, so that students can capture the jobs easily. He promised to arrange many hands-on training programs in future. Dr.V.Ramakrishna, HOD of Civil Department addressed the students to be interactive in these sessions and take positive output from the program as civil engineering building modeling using Revit-ARCHITECTURE has become an integral part in their career. The Resource persons Ms.M.Pravalika and Ms.B.Divya Gayathri trained the students on Revit-ARCHITECTURE with both theory and practical knowledge.

He has covered following topics with hands-on practice:

- ♣ Introduction of Revit-ARCHITECTURE
- ♣ Building Information Modeling
- ♣ Working with Elevation and Section Views
- ♣ Dimensions, Doors & Windows
- ♣ Openings, Modify Tools & Components
- ♣ Detailing about Roofs
- ♣ Camera, Walkthrough Tools & Import & Exporting Files
- ♣ Rendering, Massing & site Tools



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## **SKILL DEVELOPMENT CENTER REPORT ON CERTIFICATION PROGRAM ON REVIT - ARCHITECTURE**

Event Type : Two-week workshop

Date / Duration : 15-11-2018 to 28-11-2018 .

Resource Person : Ms.Ch.Swaroopa Rani, Ms.A.Ramya, Mentors, APSSDC

Name of Coordinator : P. Mohana Gangaraju

Target Audience : III Year B.Tech Students

Total no of Participants : Students: Internal - 24

Objective of the event :

To teach students the basic commands and tools necessary for professional building design, drawing and modeling process using Revit-Architecture.

Outcome of event :

- Use basic Revit commands and features to create parametric models and produce architectural drawings.
- Display basic Revit skills needed for an intermediate level course.

Feedback / Suggestions : Students gave positive feedback on the workshop and requested to conduct more workshops like certified courses

Photographs :



Principal addressing the students about event



Resource person delivering class on Revit-ARCHITECTURE

## REPORT

Skill Development Centre, LBRCE (SDC-LBRCE) in association with Andhra Pradesh State Skill Development Corporation (APSSDC) conducted Two week Certification programme on “Revit-ARCHITECTURE” for III-B.Tech Civil students from 15 November 2018 to 28 November 2018. Dr.K.Apparao, Principal of LBRCE welcomed the participants and stated the importance of Revit-ARCHITECTURE in latest application areas and also insisted the students to follow the sessions carefully. Dr.K.S.M.V.Kumar, SDC-LBRCE co-ordinator suggested the students that it is an opportunity to add additional skill set, so that students can capture the jobs easily. He promised to arrange many hands-on training programs in future. Dr.V.Ramakrishna, HOD of Civil Department addressed the students to be interactive in these sessions and take positive output from the program as civil engineering building modeling using Revit-ARCHITECTURE has become an integral part in their career. The Resource persons Ms.Ch.Swaroop Rani and Ms.A.Ramya trained the students on Revit-ARCHITECTURE with both theory and practical knowledge.

He has covered following topics with hands-on practice:

- ♣ Introduction of Revit-ARCHITECTURE
- ♣ Building Information Modeling
- ♣ Working with Elevation and Section Views
- ♣ Dimensions, Doors & Windows
- ♣ Openings, Modify Tools & Components
- ♣ Detailing about Roofs
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## DEPARTMENT OF CIVIL ENGINEERING

### REPORT ON EVENT STUDENT TECHNICAL ACTIVITY

Event Type : Technical quiz

Date / Duration : 13-07-2018 One day

Name of Coordinator : K Jaya Rao

Target Audience : 100

Total no of Participants: 170 (Civil & Mechanical department)

Objective of the event: To acquisition of knowledge about application of basic engineering to practical

Outcome of event : The quiz evolved a large response from the second and third year B.Tech students of Civil and Mechanical branches of engineering and they got to know the difference between theory to practical

Feedback / Suggestions : Received positive feedback from participants regarding event conducted and about organising the event

Photographs :



Students participating in screening test conducting by faculty and student coordinators





Students participating in main Technical Quiz

Paper Clippings: Nil



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## DEPARTMENT OF CIVIL ENGINEERING

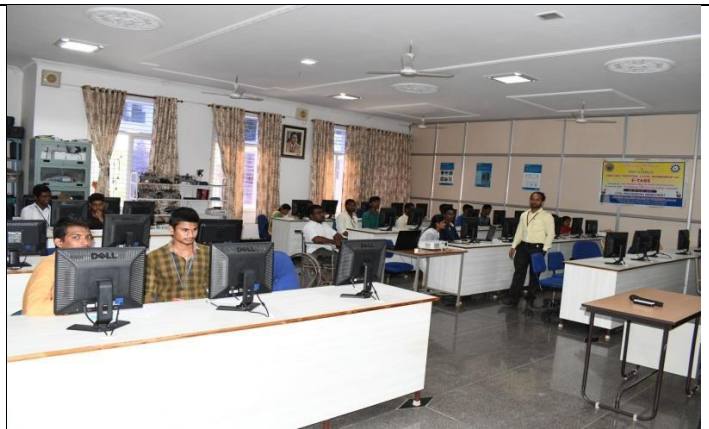
### REPORT ON

### TWO-DAY WORKSHOP on E-TABS

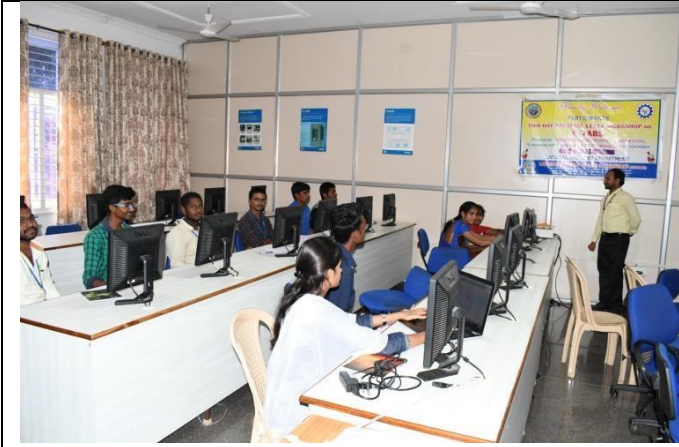
Event Type	Workshop
Date / Duration	23-06-18 to 24-06-18
Resource Team	Engineers CAD Training Centre (ECTC), Vijayawada
Name of Coordinator	Sri B.Ramakrishna
Target Audience	B.Tech Civil III Year Students.
Total no of Participants	68(internal)
Objective of the event	ETABS is a highly <b>efficient</b> analysis and design program developed especially for building systems. It is loaded with an integrated system with an ability to handle the largest and most <b>complex</b> building models and configurations.
Outcome of event	<ul style="list-style-type: none"><li>• Understand the concept and techniques to draw.</li><li>• Representing the geometry - material, sections, member connectivity, support conditions. Plot or print the drawing by scale.</li><li>• To use constraint for certain design.</li></ul>
Feedback / Suggestions	Students gave positive feedback on the workshop and requested to conduct more workshops like certified courses



HOD Dr. V.Rama Krishna addressing the importance of design and analysis of structures.



Students actively participating in workshop



Resource person interacting with students



Felicitating the resource person

**Paper clippings:**

## కార్యశాలతో ప్రయోజనం

**మైలవరం, న్యూస్టుడే:** కళాశాలలో నిర్వహించే కార్యశాలలతో విద్యార్థులకు మేలు కలుగుతుందని లకిరెడ్డి బాలిరెడ్డి ఇంజనీరింగ్ కళాశాల ప్రిన్సిపాల్ కె. అప్పారావు పేర్కొన్నారు. సివిల్ ఇంజనీరింగ్ విభాగంలో ఈ ట్యూబ్ సాఫ్ట్ వేర్ ఉపయోగించి నిర్మాణాలకు సంబంధించిన ఆకృతుల ఖరారు చేసే విధానంపై శివ సంవత్సరం విద్యార్థులకు బుధవారం కార్యశాల నిర్వహించారు. ఇంజనీర్స్ కాడ్ శిక్షణ కేంద్రం మేనేజర్ శ్రీకుమార్ పలు అంశాలపై మాట్లాడారు. ఎప్పటికప్పుడు నైపుణ్యాలను

పెంచుకోవాలని సూచించారు. కార్యశాలలో పాల్గొన్న విద్యార్థులకు ద్రువీకరణ పత్రాలు, ఈసీటీసీ సభ్యులకు జ్ఞాపికలను అందజేశారు. ఉప ప్రిన్సిపాల్ శ్రీనివాసరెడ్డి, విభాగాధిపతి వి. రామకృష్ణ, స్టూడెంట్ చాప్టర్ సమన్వయకర్త బి.రామకృష్ణ, అధ్యాపకులు పాల్గొన్నారు.

**మైలవరం, న్యూస్టుడే:** విద్యార్థులు సంపూర్ణ విజ్ఞానం సాధించటం ద్వారా ఉపాధి అవకాశాలను పొందవచ్చని రిసోర్స్ పర్సన్ త్రివిక్రమ్ భానోజీరెడ్డి



**కార్యశాలలో విద్యార్థులు**

పేర్కొన్నారు. మైలవరం లకిరెడ్డి బాలిరెడ్డి ఇంజనీరింగ్ కళాశాలలో బుధవారం మెకానికల్ విభాగం ఆధ్వర్యంలో సదస్సు నిర్వహించారు. ప్రొడక్ట్ డిజైన్, డెవలప్ మెంట్ పై వివరించారు. ప్రిన్సిపాల్ అప్పారావు, పాల్గొన్నారు.

**REPORT**

A 2-day workshop on “Design of Buildings using E-Tabs” was organized for the 3<sup>rd</sup> B. Tech Civil Engineering students in LBRCE by IE (I) Student Chapter of Civil Engineering Department during 23-24 July 2018 in association with ECTC, Vijayawada. Sri Prasanna Kumar, Manager of ECTC, led a 2-member team for the workshop. This workshop is organized as a part of department’s objective of introducing the civil engineering students with latest design software available on the subject.

The resource team introduced the fundamental concepts of Building design using E- Tabs covering Geometric modelling of structures, loading on structures, Analysis and designing, and wind load, seismic load designing. This software will be helpful in designing the buildings by applying the wind and seismic forces along with the normal loading conditions. Exposure to E-Tabs software will help the modern civil engineer to satisfy the customer needs and producing better quality output among the options available in short duration. Meanwhile, the exposure to the software tools will also enhance better job prospects.

The students are given hands-on experience with the software by working on several examples. At the end of the workshop, buildings are designed by students by applying different loading conditions.



# LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

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L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

## DEPARTMENT OF CIVIL ENGINEERING

### REPORT ON INDUSTRIAL VISIT TO Dr. NTPS

**Event Type:** Industrial visit

**Date / Duration:** 27-07-2018

**Resource Persons:** --

**Name of Coordinators:** 1. Sri J.Rangaiah-Associate Professor  
2. Sri B.Rama Krishna-Assistant Professor

**Target Audience:** 4<sup>th</sup> year B.Tech Civil Engineering students of LBRCE

**Total no of Participants:** 60

**Objective of the event:** 1. To bridge the gap between theory and practice

**Outcome of event:** 1. Students became aware of the several operations that are carried out in the plant.  
2. Students became aware raw water is collected from Krishna River and the water is sent to DM plant after basic filtration process.



Students at NTPS



Students at NTPS



Resource Person explaining the operations in plant



Students are observing the disposal of fly ash and reuse



Resource Person explaining the operations of DM plant



Resource Person explaining collection of coal and Processing

## REPORT

The 4<sup>th</sup> year B.Tech civil engineering students underwent an industrial visit to Dr. NTTPS, Ibrahimpatnam, Vijayawada on **27-07-2018**. Smt. N.Mahalakshmi garu (AE, Env.) and Sri Syam garu (AE Fly ash) explained the (i) basic operations in power plant (ii) DM plant necessity in power plant (iii) operation of DM plant (iv) collection of coal and processing and (v) fly ash collection and reuse.

The students visited the several operations that are carried out in the plant. They observed the activities starting from unloading of coal from wagons, its processing until it reaches the burning point. The C- grade required for plant operations is obtained from Singareni Collieries.

Raw water is collected from Krishna River and the water is sent to DM plant after basic filtration process. The necessity of DM plant is to avoid formation of scales in boilers. The DM plant contains Ion exchange resins and the water after the DM process is tested for its quality before used in boilers. Students also visited the turbines connecting with generators which are used for producing electricity.

In the entire operation of electricity production from coal in Dr NTTPS, large amount of waste is generated in the form of fly ash due to combustion of coal. ESP is used as the primary air pollution control equipment to remove fly ash from the process. The fly ash generated is disposed off at fly ash pond spread in 365 acres through the pipe lines. Some quantity of fly ash is supplied to the surrounding small scale industries for making cement and fly ash bricks.

The industrial visit helped the students in visualising DM plant operation and collection and disposal of fly ash and reuse. The visit is fully interactive and all the students participated enthusiastically and enjoyed the experience.



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## DEPARTMENT OF CIVIL ENGINEERING

### REPORT ON INDUSTRIAL VISIT TO POLAVARAM PROJECT

**Event Type:** Industrial visit

**Date / Duration:** 01-12-2018

**Resource Persons:** --

**Name of Coordinators:** 1. Sri J.Rangaiah-Associate Professor  
2. Sri B.Rama Krishna-Assistant Professor  
3. Sri J.Eeswar Ram-Assistant Professor  
4. Sri K.Harish Kumar-Assistant Professor

**Target Audience:** 2<sup>nd</sup> and 3<sup>rd</sup> year B.Tech Civil Engineering students of LBRCE

**Total no of Participants:** 89

**Objective of the event:** 1. To bridge the gap between theory and practice

**Outcome of event:** 1. Students became aware of the construction of spillway and how earth work is carried out at construction site  
2. Students became aware about new concrete placing techniques which are used at Polavaram construction site

**Feedback / Suggestions:** Positive. More programmes are required.

### REPORT

The 2<sup>nd</sup> & 3<sup>rd</sup> year B.Tech civil engineering students underwent an industrial visit to Polavaram Project, Polavaram on **01-12-2018**. The students visited the Pattisema project, Polavaram project spillway construction, diaphragm wall and rock fill dam. They observed the activities of construction of spillway and excavation work carried at Polavaram project.

**Origin of the project:**

The Godavari is one of the most flooded rivers in South India, and nearly 3000 TMCs of water flows into the ocean as wastage every year. Whereas the water levels in other major rivers Krishna and Penna are reducing year by year. This has become a serious concern to lakhs of farmers and administration. The need of the hour is utilizing the partial extent of those 3000 TMCs which is reaching the ocean unutilized to cater to the needs of the agricultural and domestic needs of the state. Polavaram project is a kind of interlinking of rivers project that is bringing water from Godavari to Krishna river. The excess water from Krishna is planned to get diverted to Penna and other rivulets through linking of water resources.

**Benefits from the project:**

The Polavaram Irrigation Project is a Multipurpose **National project** covering a wide range of benefits given below:

- Increased Agriculture production to a tune of 109 lakhs M.T. per annum.
- Increased power generation of 960 M.W.
- Assured water supply to Visakhapatnam City, and enroute villages, Steel Plant and Other Industries in the vicinity.
- Diversion of 2.27 TM. Cum. (80 TM. Cft) of Godavari Waters into the: Krishna River.
- Inland water transport for the mineral and forest produce and other agricultural and industrial products.
- Provides recreation facilities and pisciculture etc., and urbanisation.

**Locational details:**

The Project is located in Andhra Pradesh near Polavaram village about 34 Km (21 miles) upstream of Kovvur - Rajahmundry Road and 42 Km (26 miles) upstream of Sir Arthur Cotton Barrage, at Longitude 81°-39' 46" E and Latitude 17°-16' 53" N. The project is constructed with a catchment area of 3,06.643 Sq. Km and is expected to provide irrigation to 2.914 lakh hectares.

**Major components of the Polavaram Project:**

1. **Spillway:** Constructing the Spillway is the first step in the process. After constructing the Spillway, 48 huge radial Spillway gates will be fitted to it. After the gates are fitted, then the Approach and Spill channels will be constructed to channelize river water through Spillway. Each gate is fitted with 2 hydraulic cylinders to enable faster movement of the heavy gates, to secure dam from heavily flooded Godavari river. The 96 hydraulic cylinders for 48 gates are being manufactured in Germany. The excess flood water is released through the remote controlled spillway gates.

*Spillway Dimensions:* Height 45 ft; Width 1000 m; Concrete required 17 lakh cubic metres

*Spillway Radial Gate dimensions:* Each Spillway Radial gate: Height 21m; Width 16m; Weight 350 tonnes.

- 2. Coffer dams:** Two Coffer Dams, at u/s and d/s will be built across the river. The main purpose of the Coffer Dams is to protect the Earth Cum Rock fill Dam (ECRF Dam) from floods during construction. The Coffer dams are being built by renowned German company Keller. The upstream cofferdam will be 27 metres above the river bed and the other one will be about 20 metres from the river bed. The upstream cofferdam has the capacity to hold 120 TMCft while the project will have the capacity to hold 194 TMCft. The project on completion will have a “live” capacity of 75 TMCft, but water could be sent into the Left and Right Polavaram main canals by holding just 30 to 40 TMCft,

*Coffer Dam Dimensions:*

Coffer Dam u/s: Height 41m; Length 2.3 km; Width 145m; 600m from the ECRF Dam.

Coffer Dam d/s: Length 1.45 km

**3. ECRF Dam (Earth Cum Rockfill Dam)**

The ECRF dam will be built between the two Coffer dams. ECRF dam is the most crucial component of the entire project, constructed across the river Godavari and plays a major role in holding river water. It can withstand up to 50 lakh Cusecs water flow, which is higher than the maximum flood flow of 30 lakh cusecs recorded in Godavari river till date. ECRF is being built by Mega Engineering Company.

*ECRF dam dimensions:*

Length 1750 m; Height 41m; Width 300 m at the bottom and 30 m at the top

**4. Diaphragm Wall:**

Diaphragm wall is the foundation of ECRF dam. It is constructed below the ECRF dam and prevents leakage of water across the dam from the bottom of ECRF through sand pores. Without Diaphragm wall the ECRF will not sustain and will succumb to water leakage from the bottom of it.

*Diaphragm wall dimensions:*

Depth (below the ECRF dam) 40–100 m; length: 1450 m; width 1.5 m.

Diaphragm wall is being executed as a joint venture by L&T Geo and renowned German Company Bauer.

**5. Canals**

The Project will have two lined canals, one on the left side and the other on the right side. The Left canal is 181.5 Km (112.7 Miles) long with a capacity to irrigate 1.52 Lakhs hectares (4.0 Lakhs acres) in the upland areas of East Godavari and Visakhapatnam Districts besides providing water supply to the Township of Visakhapatnam and other towns and villages enroute and to the Industries in the vicinity. The Left Canal has the facility of Navigation. The Right Canal is 174 Km (110.5 Miles) long and provides irrigation to 1.29 Lakh hectares (3.19 Lakh acres) in the up-land areas of West Godavari and Krishna Districts and also enables a diversion of 2.27 T.M.Cum. (80 T.M.C) to the Krishna river at Vijayawada. 7000 Nos Tube wells are also proposed in the command area of the Project for conjunctive use of ground water along with the river water, to control water logging problems.

**6. Reservoir:**

The project reservoir has a live storage 75.2 TMCs at canal's full supply level of 41.15m (135 ft) MSL and gross storage of 194 TMCs thereby enabling irrigation of 23,20,000 acres.



**Pattiseema project:**

80 TMCs of Godavari water can be diverted every year to the Krishna River using 24 pumping units to pump a maximum of 240 cumecs of water. These pumps deliver water drawn from the river Godavari in Pattiseema into the Polavaram Project Right Main Canal for the benefit of farmers in the Krishna river delta. The Godavari water then travels for 174 Km in the Polavaram Right canal with the help of gravity and then meets River Krishna at ‘Pavithra Sangamam’ near Vijayawada, located at the upstream of Prakasam barrage. The diverted Godavari water will be utilised for irrigation and drinking purposes in Krishna Delta region. The river linking benefits around 14 lakh acres in Krishna delta region. Four districts Krishna, West Godavari, Guntur and Prakasam under Krishna delta region will benefit from the Godavari water. This project is completed with an estimated cost of Rs 1600 crores.

**Status:**

Approximately 32 lakh cubic metres of concrete will be required for the entire project. The civil works are in progress and around 60% of the civil works are completed. Heavy machinery and construction equipment are used in the site. Heavy machinery, imported from abroad, is actively involved to speed up the construction process. The erection of radial gates to spillway is scheduled from the third week of December 2018.

**Photographs:**





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## DEPARTMENT OF CIVIL ENGINEERING

### REPORT ON INDUSTRIAL VISIT TO POLAVARAM PROJECT

**Event Type:** Industrial visit

**Date / Duration:** 29-12-2018

**Resource Persons:** --

**Name of Coordinators:** 1. Sri J. Eeswar Ram-Assistant Professor  
2. Sri B.Narasimha Rao-Assistant Professor  
3. Sri M. Manoj Kumar - Assistant Professor  
4. Sri P.M. Ganga Raju - Assistant Professor

**Target Audience:** 1<sup>st</sup> and 4<sup>th</sup> year B.Tech Civil Engineering students of LBRCE

**Total no of Participants:** 90

**Objective of the event:** 1. To bridge the gap between theory and practice

**Outcome of event:** 1. Students became aware of the construction of spillway and how earth work is carried out at construction site  
2. Students became aware about new concrete placing techniques which are used at Polavaram construction site

**Feedback / Suggestions:** Positive. More programmes are required.

### REPORT

The 1<sup>st</sup> and 4<sup>th</sup> year B.Tech civil engineering students underwent an industrial visit to Polavaram Project, Polavaram on **29-12-2018**. The students visited the Pattisema project, Polavaram project spillway construction, diaphragm wall and rock fill dam. They observed the activities of construction of spillway and excavation work carried at Polavaram project.

**Origin of the project:**

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### **Status:**

Approximately 32 lakh cubic metres of concrete will be required for the entire project. The civil works are in progress and around 60% of the civil works are completed. Heavy machinery and construction equipment are used in the site. Heavy machinery, imported from abroad, is actively involved to speed up the construction process. The erection of radial gates to spillway has started in the last week of December 2018.

**Photographs:**



**Spillway construction site**



**Polavaram Irrigation Project location**



**Polavaram project model**



**Pattiseema Lift Irrigation scheme**