



# Indra Ganesan

## COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai  
Accredited by NAAC with 'B+' Grade, 2(f) & 12B Status Institution by UGC

IG Valley, Madurai Main Road, Manikandam, Tiruchirappalli - 620012

# NAAC DOCUMENTS

## QUALITY INDICATOR FRAME WORK

### CRITERION – 2

## TEACHING-LEARNING AND EVALUATION

SUBMITTED BY

# IQAC

INTERNAL QUALITY ASSURANCE CELL

## INDRA GANESAN COLLEGE OF ENGINEERING





**Indra Ganesan**  
**COLLEGE OF ENGINEERING**

Madurai Main Road (NH-45B), Manikandam, Tiruchirappalli - 620 012  
Approved by AICTE, NewDelhi & Affiliated to Anna University, Chennai  
NAAC Accredited, 2(F) Status Institution by UGC



# 2018-2019

<b>Criteria 2</b>	<b>Teaching-Learning and Evaluation</b>	<b>350</b>
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**Key Indicator-Experiential Learning Method (90)**

**DEPARTMENT OF CIVIL ENGINEERING**



# Indra Ganesan

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### DEPARTMENT OF CIVIL ENGINEERING

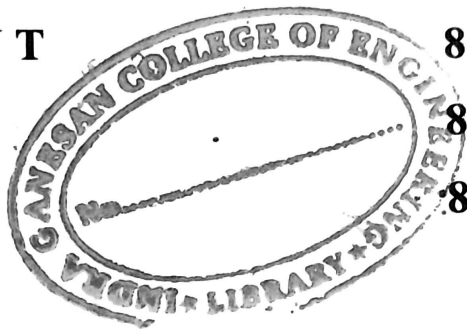
S.No	Project Title	No Students
1	DESIGNING AND PLANNING OF CROSS DRAINAGE SYSTEM	04
2	ANALYSIS AND DESIGN OF STEEL BRIDGE GIRDER	03
3	PLANNING AND DESIGNING OF OUTDOOR STADIUM	03
4	AN EXPERIMENTAL INVESTIGATION ON STRENGTH AND DURABILITY OF CONCRETE PROPERTIES BY PARTIAL REPLACEMENT OF FOUNDRY SAND AS A FINE AGGREGATE.	04
5	EXPERIMENTAL STUDY ON TREATMENT OF HOUSEHOLD WASTE WATER BY USING NATURAL COAGULANT	04
6	A COMPARITIVE STUDY ON CONCRETE PROPERTIES BY USING RED SOIL AS A PARTIAL REPLACEMENT OF FINE AGGREGATES A PROJECT REPORT	04

**DESIGNING AND PLANNING OF CROSS  
DRAINAGE SYSTEM**

**A PROJECT REPORT**

*Submitted by*

<b>DANISH AHAMED SHAREEF K</b>	<b>811216103002</b>
<b>YOGESHWARAN T</b>	<b>811216103014</b>
<b>ARAVIND A</b>	<b>811216103301</b>
<b>HARIHARAN T</b>	<b>811216103701</b>



*in partial fulfillment for the award of the degree*

*of*

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**IN**

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**INDRA GANESAN COLLEGE OF ENGINEERING**

**TRICHIRAPALLI**

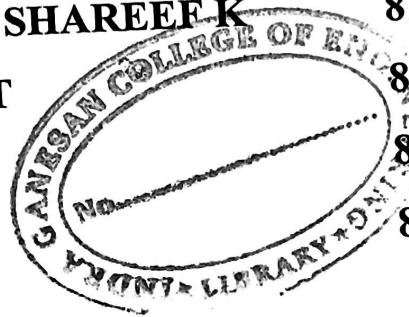
**ANNA UNIVERSITY : CHENNAI 600 025**

**OCTOBER 2019**

**DESIGNING AND PLANNING OF CROSS  
DRAINAGE SYSTEM  
A PROJECT REPORT**

*Submitted by*

**DANISH AHAMED SHAREEF K** 811216103002  
**YOGESHWARAN T** 811216103014  
**ARAVIND A** 811216103301  
**HARIHARAN T** 811216103701



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**TRICHIRAPALLI**

**ANNA UNIVERSITY : CHENNAI 600 025**

**OCTOBER 2019**

**ANNA UNIVERSITY :CHENNAI 600 025**

**BONAFIDE CERTIFICATE**

Certified that this project report “**DESIGNING AND PLANNING OF CROSS DRAINAGE SYSTEM**” is bonafide work of **DANISH AHAMED SHEREEF K (811216103002), YOGESHWARAN T (811216103014), ARAVIND A (811216103301), HARIHARAN T (811216103701)** who carried out the project work under my supervision.

  
SIGNATURE

**Ms.G.BHARANI, M.Tech.,  
HEAD OF THE DEPARTMENT**

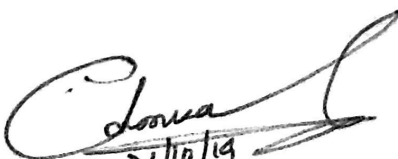
Department of Civil Engineering  
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SIGNATURE

**Mr.S.DHINESHKUMAR, M.Tech.,  
SUPERVISOR**

Assistant Professor  
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This project book is submitted for **CE6712 DESIGN PROJECT Viva - Voce**  
Examination held on 31-10-2019 (AN)

  
INTERNAL EXAMINER

  
EXTERNAL EXAMINER

**ANALYSIS AND DESIGN OF STEEL BRIDGE  
GIRDER**

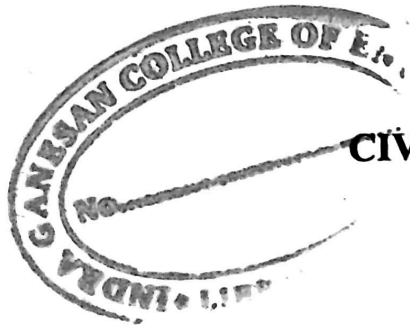
**A PROJECT REPORT**

Submitted by

<b>ISHWARYA V</b>	<b>811216103005</b>
<b>KALPANA K</b>	<b>811216103007</b>
<b>PREETHA S</b>	<b>811216103010</b>
<b>SRINANDHINI V P</b>	<b>811216103011</b>

*in partial fulfilment for the award of the degree  
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**BACHELOR OF ENGINEERING  
IN**



**CIVIL ENGINEERING**

**INDRA GANESAN COLLEGE OF ENGINEERING  
TIRUCHIRAPPALLI**

**ANNA UNIVERSITY: CHENNAI 600 025**

**OCTOBER 2019**

**ANALYSIS AND DESIGN OF STEEL BRIDGE  
GIRDER**

**A PROJECT REPORT**

Submitted by

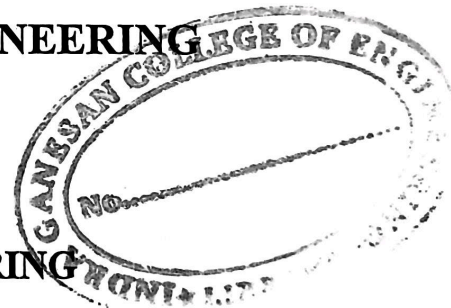
<b>ISHWARYA V</b>	<b>811216103005</b>
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TIRUCHIRAPPALLI**

**ANNA UNIVERSITY: CHENNAI 600 025**

**OCTOBER 2019**



ANNA UNIVERSITY: CHENNAI 600 025

**BONAFIDE CERTIFICATE**

Certified that this project report "ANALYSIS AND DESIGN OF STEEL BRIDGE GIRDER" is the bonafide work of "ISHWARYA V (811216103005), KALPANA K (811216103007), PREETHA S (811216103010), SRINANDHINI VP (811216103011), who carried out the project work under my supervision.

  
SIGNATURE

Ms.G.BHARANI

HEAD OF THE DEPARTMENT

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Indra Ganesan College of Engineering

Tiruchirappalli – 12

  
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Mr.K.SARAVANAN

SUPERVISOR

Assistant Professor

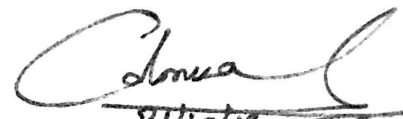
Department of civil Engineering

Indra Ganesan College of Engineering

Tiruchirappalli – 12

This project work is submitted for Viva-voce examination held on

31/10/19 AN

  
INTERNAL EXAMINER

  
EXTERNAL EXAMINER

**PLANNING AND DESIGNING OF OUTDOOR  
STADIUM**

**A PROJECT REPORT**

*Submitted by*

**JAMES ALPHONES RAJ A**

**811216103006**

**SYED JAMIRDEEN S**

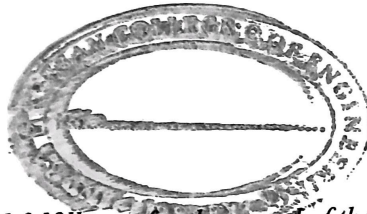
**811216103012**

**PRASANTH N R**

**811216103302**

**RAJ GOKUL A B**

**811216103303**



*in partial fulfillment for the award of the degree of*

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**IN**

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**INDRA GANESAN COLLEGE OF ENGINEERING**

**ANNA UNIVERSITY: CHENNAI 600 025**

**OCTOBER 2019**

**PLANNING AND DESIGNING OF OUTDOOR  
STADIUM**

**A PROJECT REPORT**

*Submitted by*

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<b>SYED JAMIRDEEN S</b>	<b>811216103012</b>
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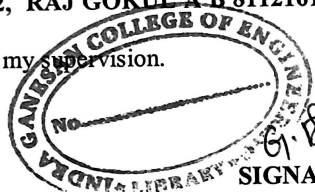
**OCTOBER 2019**

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report "PLANNING AND DESIGNING OF OUTDOOR STADIUM" is the bonafide work of "JAMES ALPHONES RAJ A 811216103006, SYED JAMIRDEEN S 811216103012, PRASANTH N R 811216103302, RAJ GOKUL A B 811216103303" who carried out the project work under my supervision.

*G. Bharani*  
SIGNATURE



*G. Bharani*  
SIGNATURE

Ms.G.BHARANI B.E., M.Tech  
Head of the Department  
Department of Civil Engineering  
Indra Ganesan College of Engineering  
Tiruchirapalli - 12

Ms.G.BHARANI B.E., M.Tech  
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Indra Ganesan College of Engineering  
Tiruchirapalli - 12

This project book is submitted for CE6712 DESIGN PROJECT viva-voce examination is held on 31-10-19

*[Signature]*  
INTERNAL EXAMINER

*[Signature]*  
EXTERNAL EXAMINER

**AN EXPERIMENTAL INVESTIGATION ON  
STRENGTH AND DURABILITY OF CONCRETE  
PROPERTIES BY PARTIAL REPLACEMENT OF  
FOUNDRY SAND AS A FINE AGGREGATE.**

**A PROJECT REPORT**

*Submitted by*

<b>BALASUBRAMANI R</b>	<b>811217103006</b>
<b>ARUN PRASATH R</b>	<b>811217103301</b>
<b>JOEL FERNANDEZ R</b>	<b>811217103302</b>
<b>THIRUPATHI RAJA G</b>	<b>811217103304</b>

*in partial fulfillment for the award of the degree*

*of*

**BACHELOR OF ENGINEERING**

**In**

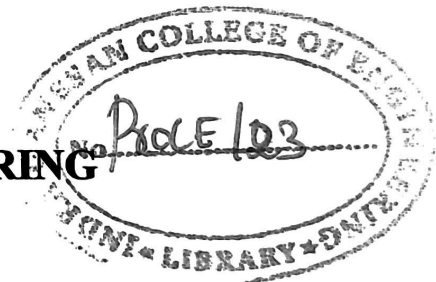
**CIVIL ENGINEERING**

**INDRA GANESAN COLLEGE OF ENGINEERING**

**TIRUCHIRAPPALLI**

**ANNA UNIVERSITY: CHENNAI 600 025**

**MARCH 2021**



**AN EXPERIMENTAL INVESTIGATION ON  
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PROPERTIES BY PARTIAL REPLACEMENT OF  
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**A PROJECT REPORT**

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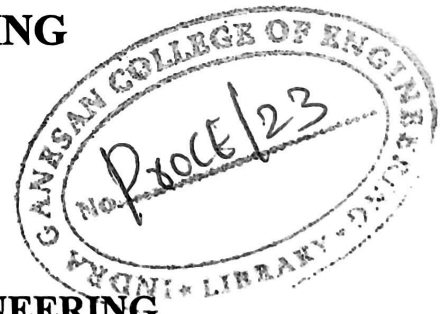
**In**

**CIVIL ENGINEERING**

**INDRA GANESAN COLLEGE OF ENGINEERING  
TIRUCHIRAPPALLI**

**ANNA UNIVERSITY: CHENNAI 600 025**

**MARCH 2021**



**ANNA UNIVERSITY: CHENNAI 600 025**

**BONAFIDE CERTIFICATE**

Certified that this project report “ AN EXPERIMENTAL INVESTIGATION ON STRENGTH AND IN DURABILITY OF CONCRETE PROPERTIES BY PARTIAL REPLACEMENT OF FOUNDRY SAND AS A FINE AGGREGATE” is the confide work of“ BALASUBRAMANI R (811217103006), ARUN PRASATH R (81121710301), JOEL FERNANDEZ R (811217103302), THIRUPATHI RAJA G (811217103304).who carried out the project work under my supervision.



**Mr. K. SARAVANAN**

**HEAD OF THE DEPARTMENT**

Department of Civil Engineering

Indra Ganesan College of Engineering

Tiruchirappalli – 12

This project work is submitted for Viva-voce examination held on 05/08/2021 (FN)

**INTERNAL EXAMINER**



**Mr.K.SARAVANAN**

**SUPERVISIOR**

Assistant Professor

Department of Civil Engineering

Indra Ganesan College of Engg

Tiruchirappalli – 12

**EXTERNAL EXAMINER**

**EXPERIMENTAL STUDY ON TREATMENT OF  
HOUSEHOLD WASTE WATER BY USING  
NATURAL COAGULANT**

**A PROJECT REPORT**

*Submitted by*

**KOKILA P**

**811217103009**

**MONIKA M**

**811217103011**

**THAMARAI SELVI K**

**811217103016**

*In partial fulfilment for the award of the degree*

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**BACHELOR OF ENGINEERING**

*IN*

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**INDRA GANESAN COLLEGE OF ENGINEERING**

**TIRUCHIRAPPALLI**

**ANNA UNIVERSITY: CHENNAI 600 025**

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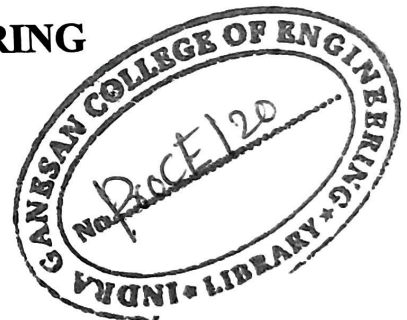
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**HEAD OF THE DEPARTMENT**

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Indra Ganesan College of Engineering

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Engineering

Tiruchirappalli - 12

This Project work is submitted for Viva-voce examination held on 05/08/2021 (FN)

**INTERNAL EXAMINER**

**EXTERNAL EXAMINER**

**A COMPARITIVE STUDY ON CONCRETE  
PROPERTIES BY USING RED SOIL AS A PARTIAL  
REPLACEMENT OF FINE AGGREGATES**

**A PROJECT REPORT**

*Submitted by*

<b>AKASH S</b>	<b>811217103002</b>
<b>DEEPAN K S</b>	<b>811217103007</b>
<b>SALEEM KHAN S</b>	<b>811217103014</b>
<b>SATHISH KUMAR S</b>	<b>811217103015</b>

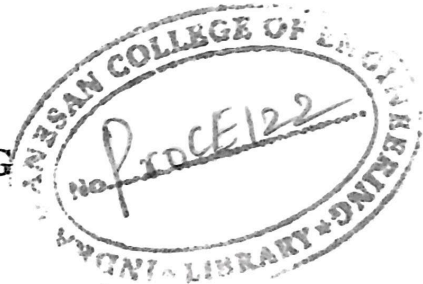
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**INDRA GANESAN COLLEGE OF ENGINEERING, TRICHY**

**ANNA UNIVERSITY: CHENNAI 600 025**

**MARCH 2021**

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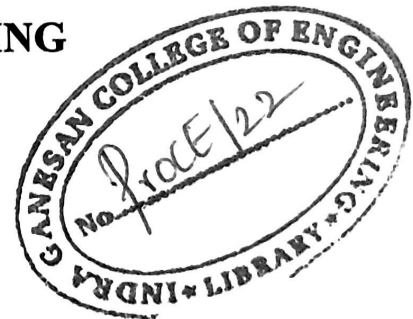
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**ANNA UNIVERSITY: CHENNAI 600 025**

**MARCH 2021**

**ANNA UNIVERSITY: CHENNAI 600 025**

**BONAFIDE CERTIFICATE**

Certified that this project report 'A COMPARITIVE STUDY ON CONCRETE PROPERTIES BY USING RED SOIL AS A PARTIAL REPLACEMENT OF FINE AGGREGATES "" is the bonafide work of "" AKASH S (811217103002), DEEPAN K S (811217103007), SALEEM KHAN S (811217103014), SATHISH KUMAR S (811217103015)'' who carried out the project work under my supervision.



**SIGNATURE**

**K. SARAVANAN, M.E.,**

**HEAD OF THE DEPARTMENT**

Department of Civil Engineering

Indra ganesan college of engineering

Trichy-12



**SIGNATURE**

**D. SHEEBA, M.E.,**

**SUPERVISOR**

Assistant professor

Department of Civil Engineering

Indra ganesan college of engineering

Trichy-12

This Project Work Is Submitted for Viva Voce Examination Held On 05/08/2021 (FN)

**INTERNAL EXAMINER**

**EXTERNAL EXAMINER**