Criterion: III – Research Innovation and Extension
3.7 Collaboration. Year 2018-2023

3.7.1 Number of functional MoUs /linkages with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the last five years

- **MoU Activities 2022 - 23**

Year of signing MoU	Name of the organization with whom MOU/Collaboration being signed	Duration	Purpose of MOU/Collaboration	List the actual activities under each MOU year-wise	Date of the activity conducted
2012	VOC Port Trust, Thoothukudi	Lifetime	Cultural Programme	Observance of Vigilance Awareness Week, 2022	09.11.2022
2016	Tamilnadu Mercantile Bank	Lifetime	Cultural Programme	Tamilnad Mercantile Bank 101st Foundation Day Competition	11.11.2022
2019	Government Museum, Thirunelveli	3	Academic Collaboration	Special lecture on Museum – A Repository of Historical Research	03.02.2023
2019	Government Museum, Thirunelveli	3	Academic Collaboration	Spot Study –Kanniyakumari	15.4.2023

2020	Annammal College of Education for Women, Thoothukudi	5 years	Academic Collaboration	Dr. S. Jeya Bharathi, Assistant Professor of Psychology, PSYS001- Acted as a resource person 'Emotional Wellbeing: An important pre requuisite for effective teacher	19-05-2023
2020	Annammal College of Education for Women, Thoothukudi	5 years	Academic Collaboration	Dr. S. Jeya Bharathi, Assistant Professor of Psychology, PSYS001-Judge for Street Play Competition	29-11-2022
2020	Annammal College of Education for Women, Thoothukudi	5years	Academic Collaboration	Sharing of Lab Equipment	27.01.2023
2021	Holy Cross College (Autonomous), Nagercoil	3years	Academic Collaboration	Dr.B.Serena Margaret, Associate Professor of English, ENGR008 - Evaluation of Academic activities of the institution on 04.05.2023	04.05.2023
2021	Holy Cross College (Autonomous), Nagercoil	3years	Academic Collaboration	International Webinar on Comprehend the Cultural Differences: Indai and France	17.12.2022
2021	Million Hopes Academy, Thoothukudi	3years	Academic Collaboration	Certificate Course on English Proficiency for Competitive Exams	01.08.2022 to 29.09.2022
2021	Holy Cross Home Science College, Thoothukudi	3years	Academic Collaboration	Dr. S. Gayathri, Assistant Professor of Business Administration, BBAS005-Guest Lecture on Cultural and Traditional Arts on 14.03.2023	14.03.2023
2021	Postulate Infotech, New Colony, Thoothukudi	3 years	Internship	Ms. M. Kathija Apsana,Website Development Duration:19.01.2023 to 02.02.2023	19.01.2023 to 02.02.2023

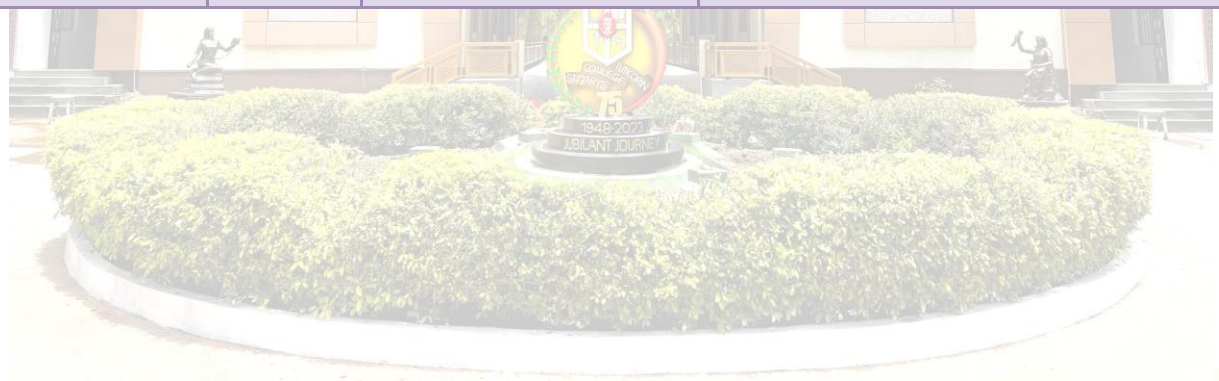
2021	Postulate Infotech, New Colony, Thoothukudi	3years	Internship	Ms. B. Maha Lakshmi, Department of Computer Science, ID:18AUCS20-Website Development Duration:19.01.2023 to 02.02.2023	19.01.2023 to 02.02.2023
2021	Postulate Infotech, New Colony, Thoothukudi	3 years	Internship	Ms. P. Nisha Rani, Department of Computer Science, -Website Development Duration:19.01.2023 to 02.02.2023	19.01.2023 to 02.02.2023
2021	Postulate Infotech, New Colony, Thoothukudi	3 years	Internship	Ms. U. Parameshwari Bharathi, Website Development Duration:19.01.2023 to 02.02.2023	19.01.2023 to 02.02.2023
2021	Postulate Infotech, New Colony, Thoothukudi	3 years	Internship	Ms. R. Reshma, Website Development Duration:19.01.2023 to 02.02.2023	19.01.2023 to 02.02.2023
2021	Sadakkathullah Appa College, Palayamkottai	5 years	Academic Collaboration	Dr. B. Serena Margaret, Associate of English ID: ENGR011-BOS Subject Expert In Swayam - NPTEL Online certificate course 22.10.2022	22.10.2022
2021	Sadakkathullah Appa College, Palayamkottai	5 years	Research	Dr. S. Sudha Rani, Assistant Professor of English, ENGR010 - DC Member	09.12.2022
2021	Sadakathullah Appa College(Autonomous), Tirunelveli	5 years	Academic Collaboration	Dr. S. Jeya Bharathi, HoD and Assistant Professor of Psychology, ID: PSYS002-External Examiner-Evaluation of Practical examination on 17.06.2022	17.06.2022
2021	Sadakathullah Appa College (Autonomous), Tirunelveli	5 years	Academic Collaboration	Dr. R. Mary Santhi, Assistant Professor of Botany, BOTRO14-Additional Examiner	29.05.2023 to 31.05.2023

2021	Sadakathullah Appa College (Autonomous), Tirunelveli	5 years	Academic Collaboration	Ms. R. Rohini, Counsellor and Assistant Professor of Psychology, COUS002-External Examiner for the Psychology practical examination on 26.04.2023	26.04.2023
2021	The Institutes of Chartered Public Auditors of India	Lifetime	Training Programme	Career Oriented Course on Chartered Public Auditor - Level 1	10.08.2022 to 19.10.2022
2019	Government Musemum, Thirunelveli	3 years	Academic Collaboration	Histo Expo 2023 - Antique, Numismatic and Philatelic Exhibition	06.03.2023
2021	Holy Cross Home Science College, Thoothukudi	3 years	Academic Collaboration	Dr. B. Geetha Maheswari, Assistant Professor of Commerce (SSC) ID: COMS006, Guest Lecture on "Revoltion of Digital Banking"in the seminar on 19.10.2022	19.10.2022
2021	Sadakathullah Appa College (Autonomous), Tirunelveli	5 years	Academic Collaboration	Dr. J. Arul Jesti, Assistant Professor of Mathematics, MATR006-Question Paper Setter for B.Sc Mathematics (Linear Algebra) for November 2023 Semester Examination	28.11.2022
2021	Sadakathullah Appa College (Autonomous), Tirunelveli	5 years	Academic Collaboration	Dr. J. Arul Jesti, Assistant Professor of Mathematics, MATR006-Question Paer Setter for B.Sc Mathematics (Complex Analysis) for April 2023 Semester Examination	15.06.2023

2021	Sadakathullah Appa College (Autonomous), Tirunelveli	5 years	Research	Dr. P.J. Joslin, Associate Professor of Zoology, ZOOR006-DC Memberfor the thesis title "Study on Clinical Microbiological and Epidemiological aspects of Leptospirosis in Tertiary Care Hospital" on	22-05-2023
2021	Sadakathullah Appa College (Autonomous), Tirunelveli	5 years	Research	Dr. P.J. Joslin, Associate Professor of Zoology, ZOOR006-DC Member for the thesis title "Nanoparticles in Active and Smart Packaging of Food" on 22-05-2023	22-05-2023
2021	Sadakathullah Appa College (Autonomous), Tirunelveli	5 years	Research	Dr. G. Sumathi, Assistant Professor of Economics ID: ECOS011-NIU International Journal of Human Rights, UGC Care Listed Journal Group - 1 Volk.9 (1) 2022 ISSN: 2394-0298 entitled: Mahatma Gandhi National Rural Employment Guarantee Scheme in Thoothukudi District	14-07-1905
2021	Zion Auditor College, Tirunelveli	3 years	Academic Collaboration	Preethi Paikarai (Reg.No.20SUCA42) Registered for CA, Professional Course	2023-24
2021	Coro Techno Students	3 years	Internship	Internship programme on e-mapping	13.12.2021 to 22.12.2021
2021	Coro Techno Students	3 years	Internship	Internship programme on Solar Project	13.12.2021 to 22.12.2021

2021	FLORANIX	3 years	Project	Automatic Wind Shield Wiper Using Servomotor and Embedded Microcontroller ATMEGA328 - J. Diana Rosary Reg. No: 20SPPH03	20.05.2022
2021	Nehru Institute of Engineering and Technology	3 years	Academic Collaboration	Emerging trends in power electronics applications	04-03-2023
2021	Nehru Institute of Engineering and Technology	3 years	Indusrtial Visit and Academic Collaboration	Emerging trends in power electronics applications	04-03-2023
2022	Confederation of Indian Industry	Lifetime	Academic Collaboration	Meeting attended by Faculty and Students	2021-22
2017	ICT Academy	10 years	Academic Collaboration	Webinar on Prototype/ Process Design and Development	13-03-2021
2017	ICT Academy	10 years	Academic Collaboration	Webinar on Get Set Go Student Induction Programme	23-02-2021
2022	Holy cross Home Science College, Thoothukudi	3 years	Academic Collaboration	Workshop on Baking for Beginners	21.12.2021 & 22.12.2021
2022	ICT Academy	5 years	Academic Collaboration	FDP- Python Programming	06 Jun 2022 to 10 Jun 2022
2022	ICT Academy	5 years	Academic Collaboration	How to Plan for Start-up and Legal & Ethical Steps	02-09-2022
2022	ICT Academy	5 years	Academic Collaboration	FDP - Presentation Skills in a Class Room Development Program on Presentation Skills in a Class Room	17 Nov 2022 to 19 Nov 2022

2022	ICT Academy	5 years	Academic Collaboration	Certificate Course on Digital Teaching Techniques	02-02-2023 to 17-20-2023
2022	ICT Academy	5 years	Academic Collaboration	Robatic Process Automation	2022-23
2022	ICT Academy	5 years	Academic Collaboration	Fundamentals of AI & ML (Online Live FDP) Duration: 10-14 May 2021	10-14 May 2021
2022	ICT Academy	5 years	Academic Collaboration	Ms. C. Nayanthra Mascarenhas, HoD and Assistant Professor of Computer Science(SSC), ID: CPSS003 - Faculty Development Programme	07-03-2022
2021	Shakespeare Talent Examination	3 years	Academic Collaboration	174 students from the Department of English appeared for the Shakespeare Talent Examinations	08.10.2022
2021	Aadhi Foundation	3 years	Training Programme	Hands on training on professional skill development	01.05.2022 & 02.05.2022



Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

1.3.1

St. Mary's College (Autonomous)-Thoothukudi

Department of History

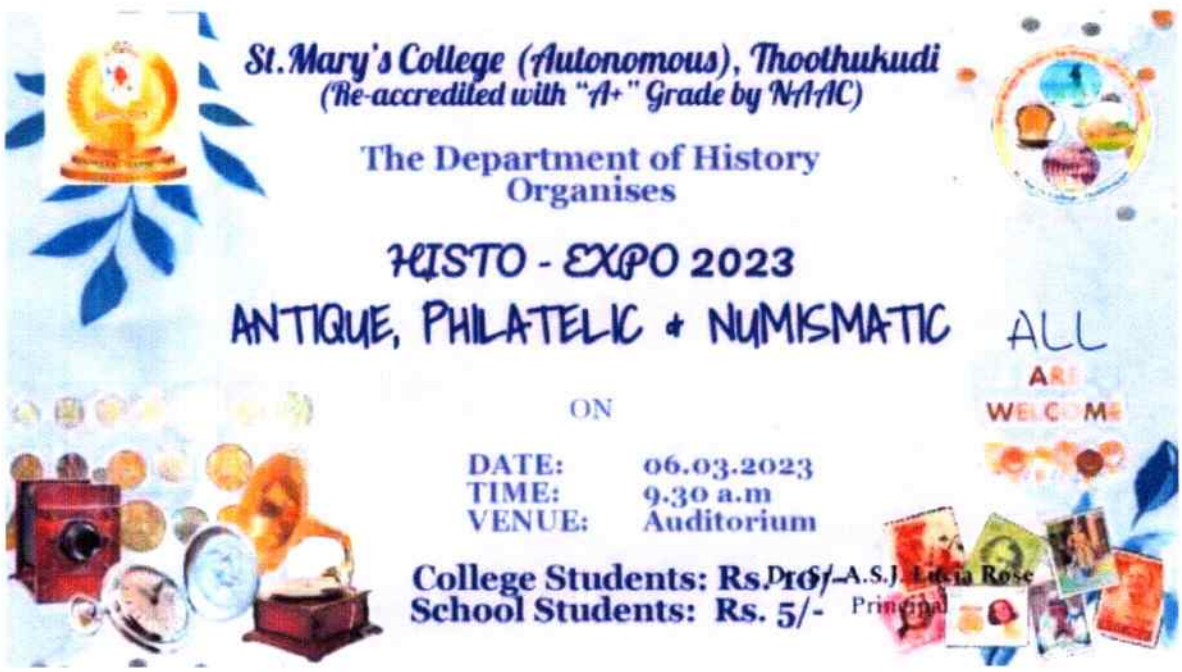
MOU ACTIVITY

Histo Expo 2023 - Antique, Numismatic and Philatelic Exhibition

06.03.2023

2022-23

Invitation:



Screenshot:

தூத்துக்குடி தூய மரியன்னைக் கல்லூரியில் (தன்னாட்சி)
வரலாற்றுத்துறை சார்பாக HISTO EXPO 2023 மாபெரும்
பழங்கால பொருட்கள் கண்காட்சி நடைபெற்றது


தூத்துக்குடியில் HISTO EXPO 2023. பழங்கால பொருட்கள் கண்காட்சி
தூத்துக்குடி தூய மரியன்னைக் கல்லூரியில் (தன்னாட்சி) வரலாற்றுத்துறை சார்பாக HISTO EXPO 2023 பழங்கால பொருட்கள் கண்காட்சி நடைபெற்றது
தேனீ
KAG TILES
76394 62999


தூத்துக்குடி தூய மரியன்னைக் கல்லூரியில் (தன்னாட்சி) வரலாற்றுத்துறை சார்பாக HISTO EXPO 2023 முதலாம் பழங்கால பொருட்கள் கண்காட்சி நடைபெற்றது

Photos:


GPS Map Camera
Thoothukudi, Tamil Nadu, India
R566+FJ3, Cruz Puram, Thoothukudi, Tamil Nadu 628001, India
Lat 8.81135°
Long 78.161366°
06/03/23 09:54 AM GMT +05:30


Thoothukudi, Tamil Nadu, India
R566+FJ3, Cruz Puram, Thoothukudi, Tamil Nadu 628001, India
Lat 8.81135°
Long 78.161366°
06/03/23 10:15 AM GMT +05:30


Thoothukudi, Tamil Nadu, India
R566+FJ3, Cruz Puram, Thoothukudi, Tamil Nadu 628001, India
Lat 8.81135°
Long 78.161366°
06/03/23 10:11 AM GMT +05:30


GPS Map Camera
Thoothukudi, Tamil Nadu, India
R566+FJ3, Cruz Puram, Thoothukudi, Tamil Nadu 628001, India
Lat 8.81135°
Long 78.161366°
06/03/23 02:30 PM GMT +05:30


GPS Map Camera
Thoothukudi, Tamil Nadu, India
R566+FJ3, Cruz Puram, Thoothukudi, Tamil Nadu 628001, India
Lat 8.81135°
Long 78.161366°
06/03/23 02:32 PM GMT +05:30

Report:

Histo Expo 2023, an Antique, Numismatic and Philatelic Exhibition was organized by the Department of History, St. Mary's College (Autonomous), Thoothukudi on 6th March 2023 at Star Hall and Fatima Hall. Varieties of collections in stamps, ancient coins and paper currency and rare antique collections from 1947 to the contemporary period were displayed. Antique, Numismatic and Philatelic collectors Mr.P. Radha Krishnan, Mr.J.Jebin, Mr. S.Selvam, Mr.Senthilnathan, Mr.Shanmuga Sundararaj and Mr.R.Kalaiventhan also exhibited their rich collections. Dr.A.S.J. Lucia Rose, Principal inaugurated the exhibition. Students from Arts and Humanities, Annamal College of Education for Women, Thoothukudi visited the exhibition. All the arrangements were made by the faculty of the Department of History.

Link: https://amravi2011.blogspot.com/2023/03/histo-expo-2023.html

https://thoothukudileaks.blogspot.com/2023/03/histo-expo-2023.html

https://tutynigalvu.com/HISTO-EXPO-2023.-An-exhibition-of-antiques-was-held-on-behalf-of-the-Department-of-History-at-Thoothukudi-Tuya-Mayannai-College-Autonomous.-263

Head of the Department

Dr. A.Malini Apsala
Head & Assistant Professor
Research Department of History
St. Mary's College (Autonomous)
Thoothukudi

B. Serena Margaret
IQAC Co-ordinator

IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Lucia Rose
Principal

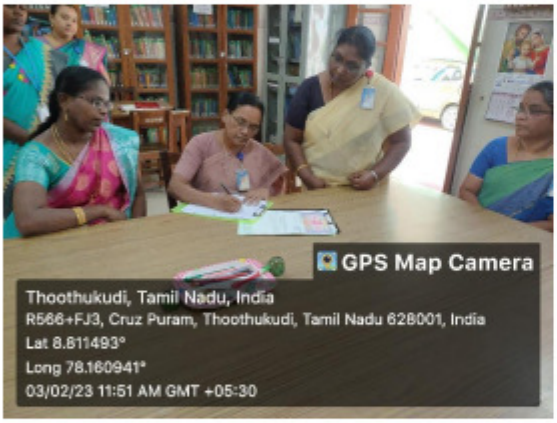
St. Mary's College (Autonomous)
Thoothukudi-628 001.

St. Mary's College (Autonomous) - Thoothukudi

Department of History

Pearl Research Centre for History, Culture and Tourism

MOU and Special Lecture Report – 03.02.2023



As part of Memorandum of Understanding signed between Department of History, St. Mary's College (Autonomous), Thoothukudi and Government Museum, Tirunelveli, Department of History organized a special lecture on Museum – A Repository of Historical Research" on

03.02.2023. Ms. S. Sathiyavalli, District Curator, Government Museum, Tirunelvli highlighted the primary functions of museum, types of museum and the preservation of artifacts with a special reference to Tirunelveli Museum. Both UG and PG students of History were the beneficiaries.

B. Serena Margaret
IQAC Coordinator
IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

St. Mary's College (Autonomous)-Thoothukudi

Department of History

MoU Activity - Spot Study –Kanniyakumari

15.4.2023

Department of History went to historical spot study on 15.4.2023 to Kanniyakumari III UG and I PG students were accompanied by Dr. D.Vinobha Gladis and Ms. S.S. Anuja. They visited Padmanabhapuram Palace and Museum to view the wooden architecture and varieties of stylus, antiques at Government Museum, Kanniyakumari respectively. This spot study enhanced the historicity of various historical various spots in Kanniyakumari.

போலீசார் அவரை மீட்டு தொடர்ந்து அங்கு பொதுக் டில் ஆஜர்படுத்த நடவ

வரலாற்று சிறப்புமிக்க இடங்களுக்கு மரபு நடை பயணம் சென்ற கல்லூரி மாணவிகள் எழுத்தாணி கண்காட்சியை பார்வையிட்டபோது எடுத்த படம்.

கன்னியாகுமரியில்

வரலாற்று சிறப்பு மிக்க இடங்களுக்கு கல்லூரி மாணவிகள் மரபு நடை பயணம்

எழுத்தாணி கண்காட்சியையும் பார்வையிட்டனர்

கன்னியாகுமரி, ஏப்.16—

தூத்துக்குடி மாவட்டத்தில் உள்ள தூய மரியன்னை கல்லூரியின் வரலாற்று துறை மாணவிகள் நேற்று கன்னியாகுமரி மாவட்டத்தில் உள்ள வரலாற்று சிறப்புமிக்க இடங்களுக்கு மரபு நடை பயணம் மேற்கொண்டனர்.

பத்மநாபபுரம் அரண்மனை, வட்டக்கோட்டை மற்றும் கன்னியாகுமரி அரசு அருங்காட்சியகம் ஆகிய இடங்களை சுற்றி பார்த்து அவற்றின் வரலாற்று சிறப்புகளை அறிந்து கொண்டனர். கன்னியாகுமரி அரசு அருங்காட்சியகத்தில் இம்மாத சிறப்பு காட்சிபொருளாக காட்சிப்படுத்தப்பட்டுள்ள எழுத்தாணி கண்காட்சியை மாணவிகள் மிகவும் ஆர்வத்துடன் கண்டு ரசித்தனர்.

மேலும் கன்னியாகுமரி அரசு அருங்காட்சியகத்தில் உள்ள அரும்பொருள்கள் பற்றிய வரலாற்று தகவல்களையும், சிற்பங்களை பற்றியும் விவரமாக அறிந்து குறிப்பு எடுத்துக்கொண்டனர். அப்போது தூய மரியன்னை கல்லூரியின் வரலாற்று துறை பேராசிரியை வினோபா கிளாடியஸ், அனுஜா ஆகியோர் உடன் இருந்தனர்.

பதிகாக 21 பேருக்கு தொற்றோனை

B. Serena Margaret
IQAC Coordinator
IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

Annammal College of Education for Women

Tiruchendur Road, Thoothukudi - 628 003. Tamil Nadu, India
Tel Office : 0461-2375601 Hostel : 0461-2377105
Email annammals@yahoo.com Website : www.annammal.org

Estd. in 1962

Recognised by National Council Teacher Education, New Delhi
affiliated to Tamil Nadu Teachers Education University, Chennai & Approved under Section 2 (f) and 12 (B) of UGC Act

SDN Subbiah Dharmanidhi Institution, Thoothukudi

Dr. (Ms.) A. Joycilin Shermila
Principal

Mr. S. Muralidharan
Secretary

Mr. S. Gauthaman
Managing Trustee, Subbiah Dharmanidhi

29th November 2022

Dr. S. Jeya Bharathi
Assistant Professor and Head
Department of Psychology
St. Mary's College (Autonomous)
Thoothukudi

Dear Mam,

Greetings from Annammals! We thank you very much for serving as a judge in the ***Street play Competition*** organized by the Women Development Cell of **Annammal College of Education for Women, *Thoothukudi***, on 29th November 2022. You have ably judged the competitors of the event and we wish to have your support in all our future endeavours. I am happy to state that you were a part of the success of this event.

Best Regards,

PRINCIPAL

Certific

DEPARTMENT OF BUSINESS ADMINISTRATION

REPORT OF HANDS ON TRAINING CONDUCTED ON 1ST MAY – 2ND MAY 2022


GPS Map Camera
Kattabettu, Tamil Nadu, India
CR67+VG8, Kattabettu, Tamil Nadu 643214, India
Lat 11.412354°
Long 76.813978°
01/05/22 11:54 AM
Google


GPS Map Camera
kotagiri, Tamil Nadu, India
CVJ8+RG2, kotagiri, Tamil Nadu 643217, India
Lat 11.430648°
Long 76.866596°
01/05/22 10:49 AM
Google

Aadhi Foundation

CERTIFICATE

of

PARTICIPATION

We thank

Ms. Egmina. P. BBA. II year.

for active participation in our

Professional Development programs conducted in Kattabettu Indl. Co-op. Tea Factory Ltd., Kotagiri, On 01st & 02nd May 2022

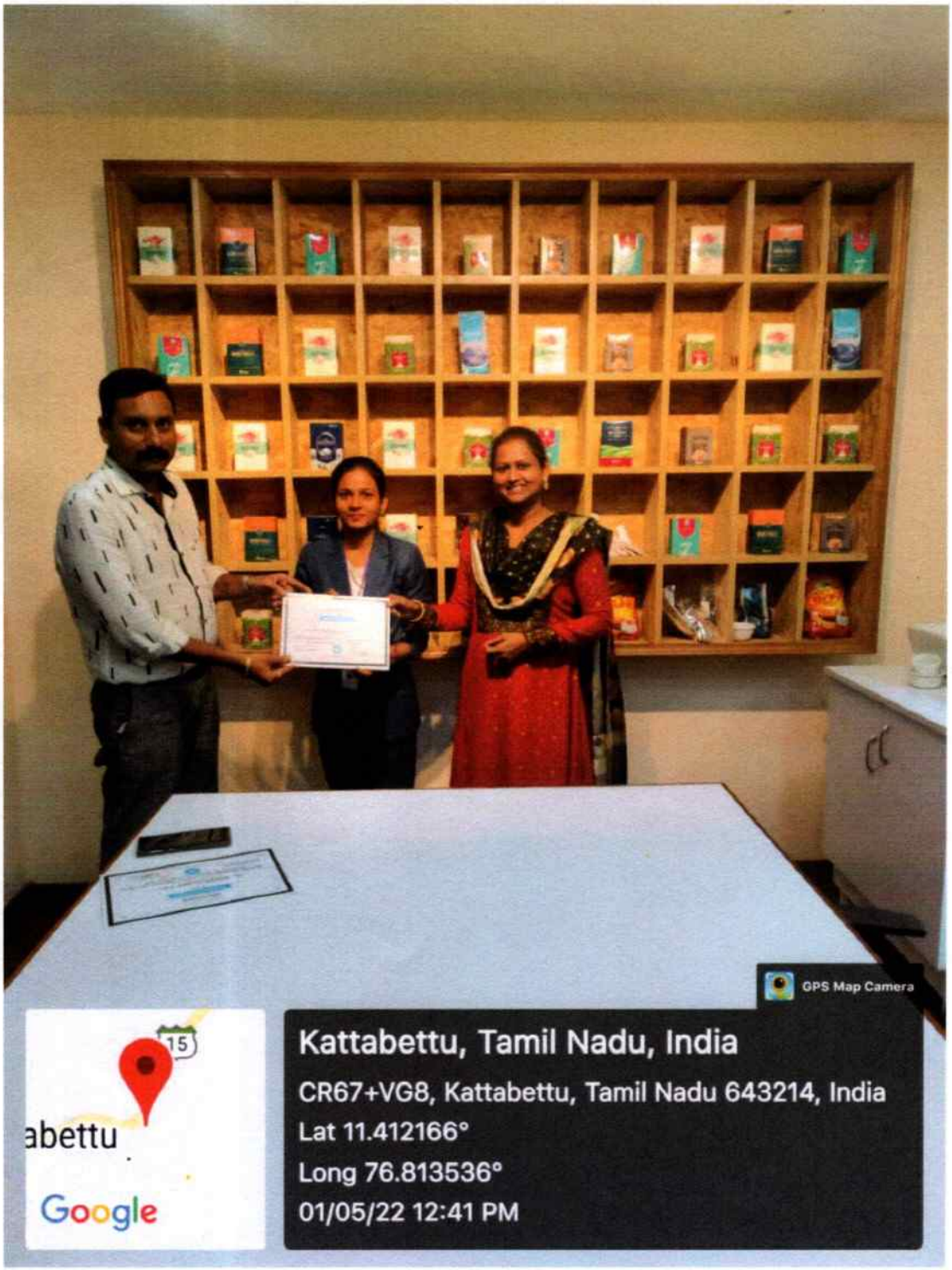
A good athlete never wins,
A good trained athlete wins

AF

AADHI FOUNDATION AF

Sujatha Bhaskaran
Managing Director

www.aadhifoundation.org



Department of Business Administration conducted two days hands on training for Professional development from 1st May 2022 to 2nd May 2022 in Kotagiri & Ooty. The students of II BBA, III BBA were attended the training. The students had a theoretical and practical session on

manufacturing process. An orientation programme was held and the students were taken to visit "Celebrating Small Tea Growers" and Government tea and chocolate factory.

Head of the Department

The Head
Department of Business Administration
St.Mary's College (Autonomous)
Thoothukudi - 628 001, Tamilnadu.

B. Serena Margaret
IQAC Coordinator

IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Principal

St. Mary's College (Autonomo
Thoothukudi-628 001.

Estd. in 1962

ANNAMMAL COLLEGE OF EDUCATION FOR WOMEN
THOOTHUKUDI

IQAC organizes a Special Address on

Emotional Wellbeing- An Important Prerequisite for Efficient Teachers

Date: 19-05-2023

Time: 2 p.m.

Resource Person

Dr. S.Jeyabharathi

Head of the Department of Psychology

St.Mary's College (Autonomous)

Thoothukudi

Mr. S. Muralidharan	Dr. A. Joycilin Shermila	Dr. R. Suryakala
SECRETARY	PRINCIPAL	IQAC COORDINATOR

Annammal College of Education for Women

Tiruchendur Road, Thoothukudi - 628 003. Tamil Nadu, India.

Tel : Office : 0461-2375601 Hostel : 0461-2377105

Email : annammals@yahoo.com Website : www.annammal.org

Estd. in 1962

Re-accredited by NAAC (3rd cycle) A++ Grade with 3.61 CGPA

Recognised by National Council Teacher Education, New Delhi

Affiliated to Tamil Nadu Teachers Education University, Chennai & Approved under Section 2 (f) and 12 (B) of UGC Act

SDN Subbiah Dharmanidhi Institution, Thoothukudi

Dr. (Ms.) A. Joycilin Shermila
Principal

Mr. S. Muralidharan
Secretary

Mr. S. Gauthaman
Managing Trustee, Subbiah Dharmanidhi

27-01-2023

Dr. S. Jeyabharathi

Head of the Department of Psychology

St. Mary's College (Autonomous)

Thoothukudi

Respected Madam,

Warm greetings! We are organizing Psychology Practical for our B.Ed. students in the first week of February. As in the previous year, we request you to lend the following apparatus for three days:

- Tachistoscope – 1
- Muller Lyer Illusion Apparatus- 1

We will make arrangements for collecting and returning them back safely after three days.

Thanking you

Yours sincerely,

PRINCIPAL

PRINCIPAL
ANNAMMAL COLLEGE
OF EDUCATION FOR WOMEN
THOOTHUKUDI-628 003

Annammal College of Education for Women

Tiruchendur Road, Thoothukudi - 628 003. Tamil Nadu, India

Tel : Office : 0461-2375601 Hostel : 0461-2377105

Email : annammals@yahoo.com Website : www.annammal.org

Re-accredited by NAAC (3rd cycle) 'A' Grade with 3.61 CGPA

Recognised by National Council Teacher Education, New Delhi

Affiliated to Tamil Nadu Teachers Education University, Chennai & Approved under Section 2 (f) and 12 (B) of UGC Act

Estd. in 1962

Dr. (Ms.) A. Joycilin Shermila
Principal

Mr. S. Muralidharan
Secretary

Mr. S. Gauthaman
Managing Trustee, Subbiah Dharmanidhi

06-02-2023

Dr. S. Jeyabharathi

Head of the Department of Psychology

St. Mary's College (Autonomous)

Thoothukudi

Respected Madam,

We are thankful to you for lending us a Tachistoscope and a Muller Lyer Illusion Apparatus for the conduct of Psychology Practical for our B.Ed. students. We have conducted the practical and we are returning the apparatus. Please collect the same from the person bearing this letter and acknowledge the receipt of the apparatus.

Thanking you

Yours sincerely,

PRINCIPAL

PRINCIPAL
ANNAMMAL COLLEGE
OF EDUCATION FOR WOMEN
THOOTHUKUDI-628 003

St. Mary's College (Autonomous)

Department of Physics

INTERNSHIP ON E – MAPPING – (13.12.2021 – 22.12.2021)

- **Invitation**

INTERNSHIP ON E-MAPPING
UNDER STAR SCHEME
2021 – 2022
Sponsored by

DEPARTMENT OF BIOTECHNOLOGY

Organised by
MARIAN STAR CENTRE
Department of Physics
St. Mary's College (Autonomous)
(Re-accredited by NAAC with 'A+' Grade)
Thoothukudi – 628 001

INTERNSHIP ON E-MAPPING
AT
DIGISAILOR COMPANY

Date: 13.12.2021 – 22.12.2021

ORGANISING COMMITTEE

Patron
Dr. Sr. C. Stelmes
Secretary, St. Mary's College (Autonomous), Thoothukudi
Chairman
Dr. Sr. A. S. J. Lucia Rose
Principal, St. Mary's College (Autonomous), Thoothukudi
Convenor
Dr. Sr. Jessie Fernando
Head and Associate Professor
Department of Physics, St. Mary's College (Autonomous), Thoothukudi
Overall Coordinator & Member Secretary
Dr. Sr. Jancika Tamilsai Alphonse
Assistant Professor of Botany, St. Mary's College (Autonomous), Thoothukudi
Executive Members
Dr. I. Rathnam Immaculate Sylvia, Associate Professor of Physics
Mr. A. Lourdu Rayappan, Assistant Professor of Physics
Dr. M. Bhavitha, Assistant Professor of Physics
Mr. P. Dhanakkodi, Assistant Professor of Physics
Mr. A. Yakkesan, Assistant Professor of Physics

For any queries
Mail id: stmphy2012@gmail.com
smcstrodhi2021@gmail.com

- **Photos**

- **Certificate**

digisailor

Date: 22-12-2021

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. DHIVYA DHARSHINI D**, Department of Physics, St. Mary's College (Autonomous), Thoothukudi, Tamil Nadu has successfully completed 10 days (from 13th December 2021 to 22nd December 2021) **Geographic Information System Internship** at **DIGISAILOR**.

During the above mentioned period she has worked on Coastline Mapping Project and we found her cooperative, hardworking and diligent.

We wish all the very best for her future endeavors.

For **DIGISAILOR**

Authorised Signatory

digisailor

- **Report**

The department of Physics organised an internship on e-mapping in our college premises from 13.12.2021 – 22.12.2021 under the star college scheme sponsored by the Department of Biotechnology, New Delhi. The internship was headed by a proficient guide from Digisailor

company. Eleven students of III B.Sc. Physics attended the internship and gained knowledge on the following

- GIS, digitization etc.
- Various types of data
- Digitize maps using the software QGIS.
- Creating layers and adding layers.
- Exporting a file and uploading it in the web page created by them.

It was such a prodigious experience for the students to create a map by themselves and uploading it in web. We hope that our students would use this training as a stepping stone for their career.

Head of the Department

HEAD
Department of Physics,
St. Mary's College (Autonomous),
Thoothukudi - 628 001.

B. Serena Margaret
IQAC Coordinator

IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Principal

St. Mary's College (Autonomous)
Thoothukudi-628 001.

St. Mary's College (Autonomous)

Department of Physics

INTERNSHIP PROGRAMME AT CORE TECHNO SOLUTIONS

13.12.2021– 23.12.2021

- **Invitation**

INTERNSHIP PROGRAMME
ON
SOLAR BASED PROJECT
UNDER STAR SCHEME
2022 – 2023

DEPARTMENT OF BIOTECHNOLOGY

Sponsored by

Organized by

MARIAN STAR CENTRE
Department of Physics
St. Mary's College (Autonomous)
(Re-accredited by NAAC with 'A+' Grade)
Thoothukudi – 628001

INTERSHIP VENUE
AT
CORE TECHO SOLUTIONS
THOOTHUKUDI

Date: 13.12.2021 – 23.12.2021

ORGANISING COMMITTEE

Patron
Dr Sr C Shibana
Secretary, St. Mary's College (Autonomous), Thoothukudi
Chairman
Dr Sr A. S. J. Lucia Rose
Principal, St. Mary's College (Autonomous), Thoothukudi
Convener
Dr Sr Jessie Fernando
Head and Associate Professor
Department of Physics, St. Mary's College (Autonomous), Thoothukudi
Overall Coordinator & Member Secretary
Dr Sr Arockia Issacias Alphonse
Assistant Professor of Botany, St. Mary's College (Autonomous), Thoothukudi
Executive Members
Dr S. Esthakiya Immaculate Sylvia, Associate Professor of Physics
Ms A. Lucas Rexceline, Associate Professor of Physics
Dr M. Sheeba, Assistant Professor of Physics
Ms P. Dhanalakshmi, Assistant Professor of Physics
Ms A. Valentina Assistant Professor of Physics

- **photo**

- **Certificate**

Certificate of Participation

This is certify that Mr./Ms. **Abinaya.M**, has participated in the internship on "*Solar Based Project*" on 13th December 2021.

Topics Covered:
1. Sun tracking solar panel
2. Solar powered auto irrigation system
3. Solar energy measurement system

Authorized Signature

CORE TECHNO SOLUTIONS

REF. No: WS14033

- **Report**

The department of Physics arranged an internship on 'Solar Based Projects' at Core Techno Solutions from 13.12.2021 – 23.12.2021 under the star college scheme sponsored by the Department of Biotechnology, New Delhi. The internship was headed by a proficient guide from Core Techno Solutions. Twelve students of III B.Sc. Physics attended the internship and carried out the following activities

- Solar radiation readings were recorded.
- Various applications of solar energy and types of solar panel were discussed.
- Basics of the project were explained.
- Various components required for the project was searched.
- A detailed study of the components were done.
- Circuit was sketched and checked for stimulation.
- The PCB layout and 3D view were arranged.
- Soldering work was carried out.
- Project was documented.

Head of the Department
Department of Physics,
St. Mary's College (Autonomous),
Thoothukudi - 628 001.

IQAC Coordinator
IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

AUTOMATIC WIND SHIELD WIPER USING SERVOMOTOR AND EMBEDDED MICROCONTROLLER ATMEGA328

A project work report submitted to

DEPARTMENT OF PHYSICS

ST.MARY'S COLLEGE (AUTONOMOUS), THOOTHUKUDI

Affiliated to

MANONMANIAM SUNDARANAR UNIVERSITY, TIRUNELVELI

In partial fulfilment of the requirements for the award of

MASTER OF SCIENCE IN PHYSICS

Submitted by

J. DIANA ROSARY

Reg. No: 20SPPH03

Under the supervision and guidance of

Dr. A. NIRMALA SHIRLEY M.Sc., M.Phil., Ph.D.,

DEPARTMENT OF PHYSICS

ST.MARY'S COLLEGE (AUTONOMOUS), THOOTHUKUDI.

(Re-accredited with 'A+' Grade by NAAC)

2021 – 2022

CERTIFICATE

This is to verify that this project report entitled **"AUTOMATIC WINDSHIELD WIPER USING SERVOMOTOR AND EMBEDDEDMICROCONTROLLER ATMEGA 328"** is submitted to **ST.MARY'S COLLEGE (AUTONOMOUS), THOOTHUKUDI** in partial fulfilment of requirementsfor theawardof MASTER **OF SCIENCE IN PHYSICS** and is a record of work done during the academic year **2021 -2022** by **J. DIANA ROSARY** (Register No: 20SPPH03).

A. Nirmala Shirley
Signature of the Guide

Signature of the Co-Ordinator

Signature of the Director
Director
Self Supporting Courses
St. Mary's College (Autonomous)
Thoothukudi - 628 001.

Lucia Rose
Signature of the Principal
Principal
St. Mary's College (Autonomous)
Thoothukudi - 628 001.

Signature of the Examiner
20/5/22

CERTIFICATE

This is to certify that the project work entitled **"AUTOMATIC WIND SHIELD WIPER USING SERVO MOTOT AND EMBEDDED MICROCONTROLLER ATMEGA328"** submitted to **St. Mary's College (Autonomous), Thoothukudi** for the award of the **Degree of Master of Science in Physics** is a bonafide record of project work done by the candidate **J. DIANA ROSARY (REG: 20SPPH03)** during the period **2021-2022** at Floranix, Chennai.

A. Nirmala Shirley

INTERNAL GUIDE
Dr. A. NIRMALA SHIRLEY
ASSISTANT PROFESSOR
DEPARTMENT OF PHYSICS
ST. MARYS COLLEGE (Autonomous)
THOOTHUKUDI

G. Kumar Sathian

EXTERNAL GUIDE
DR.G. KUMAR SATHIAN
FORMER ACADEMIC DEAN
MADRAS CHRISTIAN COLLEGE
CHENNAI-59

FLORANIX
No. 9, Ninth Lane,
Shastri Nagar, Adyar,
Chennai - 600 020.

Date: 20/05/22

DECLARATION

I hereby declare that the project report entitled **"AUTOMATIC WINDSHIELD WIPER USING SERVOMOTOR AND EMBEDDEDMICROCONTROLLER ATMEGA328"** is submitted to **ST.MARY'S COLLEGE (AUTONOMOUS), THOOTHUKUDI** affiliated to **MANONMANIAM SUNDARANAR UNIVERSITY, TIRUNELVELI** for the award of the Degree of Master of Science in Physics is my unique work and no part of this project report has been submitted for any Degree, Diploma or other similar titles.

J. Diana Rosary

Station: Thoothukudi

Signature of the Student

Date: 20-05-2022

(J. DIANA ROSARY)

ACKNOWLEGEMENT

First of all, I thank God of all creations, for showering his divine mercy and grace in completing this project work successfully.

I wish to place on record my sincere thanks to our Principal **Rev. Dr. Sr. A. S. J. LUCIA ROSE M.Sc., PGDCA, M.Phil., Ph.D.,** for granting me permission to explore my practical skills in doing this project.

I am grateful to our Director of SSC **Rev. Sr. JOSEPHINE JEYARANI MA., M.Phil.** for her encouragement and moral support to complete my project work.

I wish to thank **Rev. Dr. Sr. JESSIE FERNANDO M.Sc., M.Phil., Ph.D.,** HOD & Associate Professor for her inspirational work to complete this work.

I would like to express my hearty thanks to my Guide **Dr. A. NIRMALA SHIRLEY, M.SC., M.Phil., Ph.D.,** for providing me the support and the permission to do my project at Floranix, Chennai.

I pay my humble thanks to **Dr. G.KUMAR SATHIAN,** Former Academic Dean, Madras Christian College and presently the Proprietor of FLORANIX, for his guidance and immense help extended to me while doing the project.

I would also like to express my gratefulness to all my **Professors** for their support and encouragement.

I wish to extend mysincere gratitude to the **non-teaching staff** who has helped me in the completion of my project work.

I acknowledge my deep sense of gratitude to my loving **parents and friends** for being a constant source of motivation.

ABSTRACT

In today's automotive industry driver's safety is must important so that accident can be reduced. In many cases,lack of proper vision due to rainfall and manual errors like not increasing the speed of the wiper leads to accident. In this project an automatic rain sensing wiper system has proposed that detects rain and starts automatically and stops when the rain stops.When the droplets of rainfall on the sensor, the sensor detects the intensity of the rain and increases the speed of the wiper automatically. The higher speed of rotation indicates the higher rainfall. Fluodino (Arduino) is used along with a rain sensor, an LCD 16x2 module, and a servo motor. The moisture is measured via analog output pins which are present in the rain sensor, the wiper starts rotating when a threshold of moisture is exceeded. The collected information from the rain sensor is processed and analyzed by Fluodino and it further controls the servo motor based on the processed information. The information about the intensity of the rainfall and speed of the wiper is informed to the driver by means of a 4-bit LCD module. All the devices are connected to Floduino which is connected to the power source inside the car.

CONTENTS

Chapter	Title	Page No.
	3.6 Software section embedded C Program	31
	3.6.1 Structure	31
	3.6.1.1 Control Structure	31
	3.6.1.2 Operators	32
	3.6.2 Variables	33
	3.6.2.1 Constants	33
	3.6.2.2 Data types	33
	3.6.3 Syntax	34
	3.6.4 Serial Communication	35
	3.6.4.1 Serial.printIn(data)	36
	3.7 Function	37
	3.7.1 Setup Function	37
	3.7.2 Loop Function	37
	3.8 Digital I/O	37
	3.8.1 Pinmode(pin,mode)	37
	3.8.2 Digital Write(pin,value)	37
	3.8.3 DigitalRead(pin)	38
	3.8.4 Analog write (pin, value) – PWM	38
	3.9 Time	38
	3.10 Defining pin level “High” and “ Low ”	39
	3.11 Defining digital pins, input and output	40

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION

LCD	Liquid Crystal Display
PWM	Pulse Width Modulation
SCR	Silicon Controlled Rectifier
PIC	Peripheral Interface Controller
CAN	Controlled Area Network
AVR	Aortic Valve Replacement
ALU	Arithmetic and Logic Unit
EEROM	Electrically Erasable Programmable Read-Only Memory
USART	Universal Synchronous Asynchronous Receiver Transmitter
FTDI	Future Technology Devices International Limited
AC	Alternating Current
DC	Direct Current
LED	Light Emitting Diode
ADC	Analog To Digital Converter
CMOS	Complementary Metal Oxide Semiconductor
CPU	Central Processing Unit
TQFP	Quad Flat No-Lead Packages
IC	Integrated Chip
SRAM	Static Random Access Memory
MLF	Micro Lead Frame
TQFP	Quad Flat Pack
USB	Universal Serial Bus
MLF	Micro Lead Frame
SRAM	Static Random Access Memory

IC	Integrated Chip
ISP	Internet Service Provider

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

A windscreen wiper is an essential device that comes pre-installed in almost all motor vehicles including trains, cars, buses, some aircrafts, watercrafts etc. In the past, automakers have tried to either eliminate the wipers or to control their speed automatically. Some of the schemes involved detecting the vibrations caused by individual raindrops hitting the windshield, applying special coatings that did not allow drops to form, or even ultrasonically vibrating the windshield to break up the droplets so they don't need to be wiped at all.

Operation of these wipers in the existing models is yet manual. The physical model of the operation includes two arms twirling at one end back and forth over the glass. The arms have long rubber blade attached. While one end of the arms is attached, the other end pivots. The blade when swung back and forth over the glass pushes water from its surface providing good visibility to driver. The speed of the central shaft is adjustable. A range of several speeds and at least one or more settings that let you set the speed in between are provided. These settings are commonly labeled as "intermittent" settings. To generate the force to accelerate the wiper blades a worm gear is used. The implementation of new technology in the current scenario can help to tackle the issue at hand. Using automation and IOT technologies to automate the working of the wipers using specific sensing devices can help reduce the risk of accidents and offer comfort to the people. These implementations that we aim to offer through this project has high flexibility, is quite reliable and accurate. The main theme in this project is to develop an automatic rain sensing car wiper to automatically detect precipitation. The system has

been designed in a way which ignites the wiper blades to push off the water falling over the glass in the event of rainfall. This system aims to give better visualization to driver without involving the efforts of driver. Thus, limiting the distraction Floduino board, a rain sensing module, a servo motor and an LCD are the main set of requirements used in the construction of the said system. In this setup, the microcontroller adjusts the speed of the servo motor according to the signal given by the rain sensing module.

The data is transmitted through signals, the intensity of the rain or snowfall serves as the input. Pulse width modulation (PWM) controls the servo motor at its signal line. PWM is the representation of intensity of rain. [3]

1.2 PROBLEM DEFINITION

Modern cars come equipped with a variety of facilities. While these facilities are incorporated in the four wheelers for entertainment and recreational purposes and aim to enhance the overall travelling experience, these features also serve as a means of intrusion and causes confusion and hysteria. In monsoon, rainfall adds to the list of distractions and makes driving a tedious task. As mentioned earlier, these distractions often become a source and cause of severe accidents that are sometimes unfortunately catastrophic. Various services are being actively included in the automobiles to ensure safety along with comfort of the driver. Several automobile companies have looked at the prospect of making the working of wipers automatic. Even today, only luxury cars come equipped with automatic rain sensing wipers, major reason being the cost. To make economical and reliable automatic rain sensing wipers and their installation has been a challenge that the automobile sector hasn’t been able to tackle. [3]

1.3 OBJECTIVE

The following are the objectives of the project

1. To reduce the risk of accidents
2. To automate the wiper mechanism and working in automobiles.
3. To reduce the driver's tasks and allow driver to concentrate on driving.
4. To reduce the operations of the wiper, in manual mode.[4]

1.4 CURRENT RAIN SENSOR TECHNOLOGIES

A rain sensor is used to detect the intensity of the rain and to provide different signals for different rain intensities to the controller. The ADC in the controller detects the sensor input and gives the signal to the driver circuit. The motor driver actuates the motor to run at high speed or low speed based on the amount of the rain intensity detected, and thus, the speed of the wiper is controlled. Currently, there are many types of rain sensors are proposed for use in automotive industry. To illustrate the predominance of these sensors, some types are described briefly below:

1.4.1 Image array sensor

An image array sensor, a CMOS active pixel sensor, is used to detect the intensity of the rain in patent. When a raindrop is present in pixels of the sensor, the voltage of those pixels creates an illumination level, which is converted to grey scale values and stored in memory. Then, the frequency pattern of those grey scale values is analyzed to determine the amount of rain present. The problem with such a sensor is that once the pixels are wet, they become less sensitive to the next raindrop, for the previous raindrop layer hinders the direct contact between the pixels and the new raindrops. Besides, the optical sensor covers only a partial section of the windshield. Thus, it does not provide results based on the overall condition. Moreover, the sensor fails to

differentiate any unwanted objects, such as dusts or leaves, from raindrops, and thus can be very ineffective at times [4].

1.4.2 Audio Sensor

The condition of rain can be detected using a microphone by listening to the sound created by falling raindrops on a metallic panel such as the roof of the vehicle. However, this system will require the use of a frequency selective filter to eliminate ambient noises [5].

1.4.3 Capacitive Sensor

A film of capacitive sensors is embedded within the laminated layer of the front windscreen, and the sensors detects the intensity of the rain based on the fluctuation of the capacitive signals and resistance due to the connection of the electrodes of the sensor via raindrops. The manufacturing procedure is a limitation to implementing this system, as many car windows are not laminated. Plus, the electrodes of the sensors require electric connections, which is difficult and costly. Plus, once the sensing electrodes are wet, they become less sensitive to the next raindrop.

1.4.4 Optical rain sensor

The optical rain sensor is built on the theory of reflection of light. Infrared light is projected on the windshield from a source, which is collected by a photo detector. And, based on the change in the amount of deflection of light, the system recognizes the presence of raindrop in the windshield and moves wiper automatically. However, unwanted objects like darts and leaves lying on the windshield can easily disrupt the reflection path of the light. Besides, the sensor becomes sensitive to external lights such as underground parking lights, lights inside tunnels, and starts to move the wiper regardless of clean weather condition. Also, due to using infrared lights, the sensor suffers from small sensing area. [9]

1.4.5 Omni-directional rain sensor

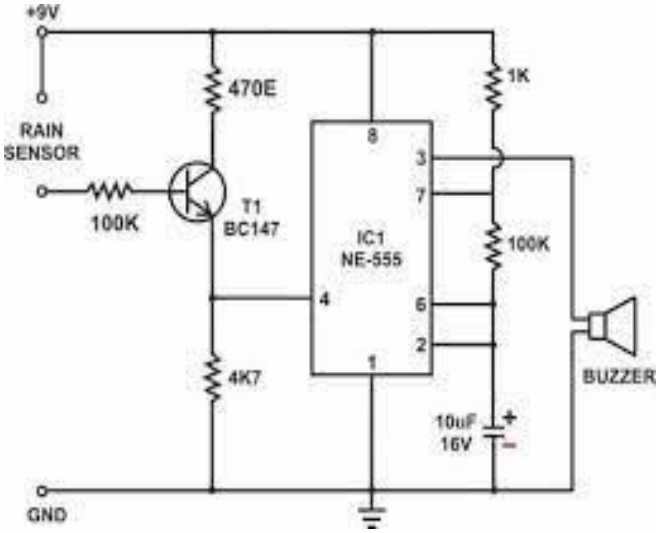
In this method, similar approach as the optical sensor is used. However, instead of throwing lights at a certain angle like traditional methods, this system scatters the inputted light source in many directions. Then, the photodiode receives the scattered light reflected by the raindrop and calculates mathematically the intensity of the received light. This approach helps to use bigger surface area of the windscreen. However, this system is still not efficient in cases of differentiating the unwanted objects from raindrops. As described above, all of the proposed methods are somewhat costly and ineffective. This paper discusses a cost effective and highly performing windshield wiper system. A rain intensity detection sensor is used to receive an analog data about the intensity of the rain. Different weather conditions are assigned to different sets of data using fuzzy logic. A control device transmits the data from the sensor to the wiper motor. Then based on different weather conditions detected by analyzing the transmitted data, the windshield wiper rotates automatically [9].

1.5 TYPES OF RAIN SENSING WIPERS

Varieties of rain sensing wipers have been constructed over the years. The various types are discussed in brief below.

1.5.1 Rain Detector Using 555-Timer

Rain Detector using 555 Timer is a simple alarm that can be used to find out if it was raining. In principle, Rain Detector using 555 Timer is a stable multi vibrator which is prepared by IC555 with installed sensor that can detect water. A stable multi vibrator with the 555 timer is set in the audio frequency with a frequency of 1 KHz. The series of using Rain Detector 555 Timer can be supplied with a voltage source that is free enough from 5-15V DC.

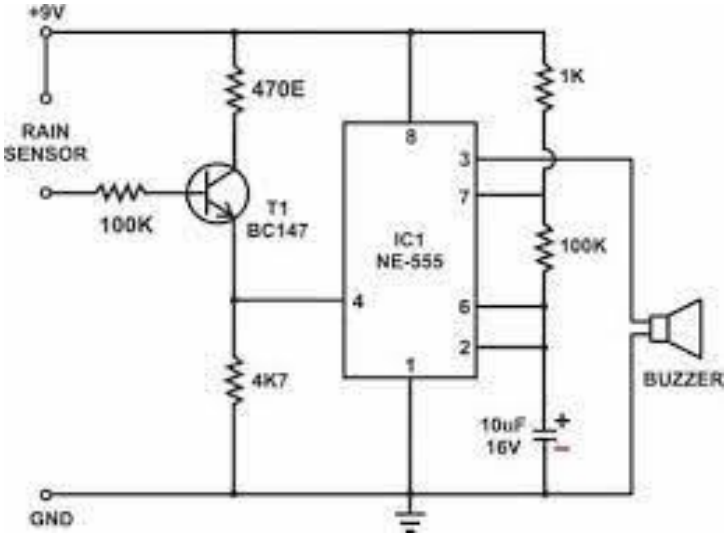


1.1 Rain Detector Using 555-Timer

In application, Rain Detector using this 555 Timer can be mounted in a motor, car or other object that we want to protect from rain water sensors that are used in circuit 555 Rain Detector using this can be designed with a PCB that one can make the path as shown in the image above or as disclosed from the image above is by using aluminum foil taped to a board or boards that are plastic insulator . The important principle of the sensor is to conduct electrical current very well when the surface is exposed to water even a little [21].

1.5.2 Rain Detector Using the Combination of 555-Timer and Darlington-Pair

The simple rain alarm circuit which produces an audible alarm whenever rain fall. The rain detector circuit is based on two transistors (Q1 & Q2) and a NE555IC (IC1). The two transistors are wired as a switch which goes on when the base of Q1 is shorted to the positive of the supply by the rainwater falling on the sensor. When the transistors are ON power supply is available to the IC1 which is wired as a stable multi vibrator.

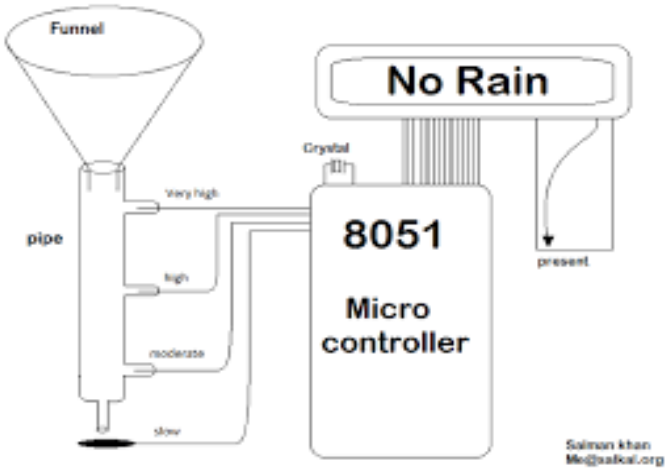


1.2 Combination of 555-Timer and Darlington-Pair

The output of IC1 drives the speaker to produce an alarm. It uses a 9V battery or a 9V regulated DC supply for powering the circuit and hence has a stable power supply. However, connecting any speaker less than 8 ohms impedance as load can damage the IC. Comparatively, most of the rain detectors as shown above are not easy to design and are expensive to construct, but the two- transistor rain detector is very easy to design and requires fewer components for its construction. Its sensing element can be locally constructed instead of importing, and it can be made from two separate transistors connected in parallel. This makes it less expensive and affordable [22].

1.5.3 Rain Detector Using 8051 Microcontroller

It works in the principle of water conducting electricity. This rain detector is working in very simple process of water conducting electricity. The wire which is connected to Vcc and the other four wires are made to be inside the pipe whose image is given below. It has different levels namely slow, moderate, high, and very high via BC547 transistor. Port P2 is connected to data pins of LCD and P1.0, P1.1, P1.2, are connected to RS, RW, and EN pins of LCD respectively.

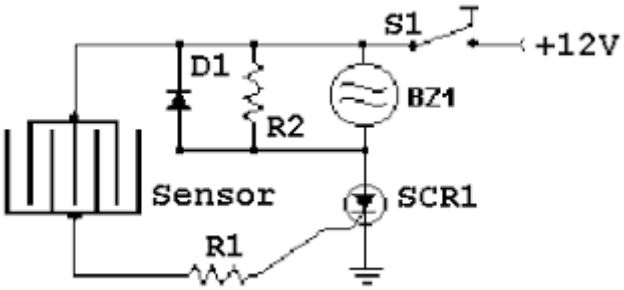


1.3 Rain Detector Using 8051 Microcontroller

When there is no rain, it will show No Rain. As the rain starts the pipe gets filled slowly wire at different levels get some positive voltage, due to conducting nature of the water. Due to this voltage is sent to their respective pins on controller. When first drop falls in that pipe, LCD displays the message slow. When the speed of rain increases the water get touched the wire and show different message like slow, moderate, high, very high [23].

1.5.4 Rain Detector Using Silicon Controlled Rectifier (SCR)

This circuit uses a sensor made of a small piece of etched PC board and a simple SCR circuit to detect rain and sound a buzzer. The SCR could also be used to activate a relay, turn on a lamp, or send a signal to

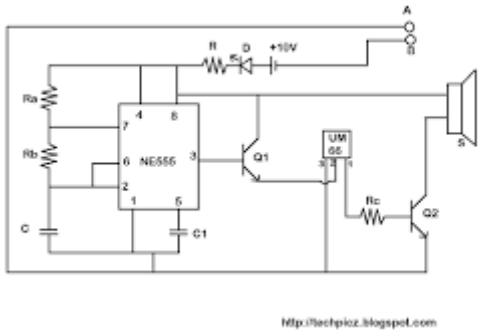


1.4 Silicon Controlled Rectifier (SCR)

a security system. Also, because the SCR power controller is a solid-state device, it provides virtually limitless, trouble-free operation with a

minimum of maintenance and so it is highly reliable. One limitation of using the SCR is that there will be high current surge and high voltages effect which can damage the device. There is a need to protect the device against damages by using snubber circuits [24].

1.5.5 Rain Detector Using NE555 and UM66



1.5 Rain Detector Using NE555 and UM66

This rain detector has two parts, astable using NE555 and simple continuity tester. The input to the astable is given through a continuity circuit. It has two wires A and B which are placed just near each other. But both have no connection. The continuity circuit is closed when it begins to rain and as water particles fall on the two wires A and B. Thus, the circuit is closed and the 10V is fed into the astable multi-vibrator. The astable multi-vibrator can produce square waves when input is given to it. In this circuit we use a melody sound generator IC UM66. It is used to produce sound when rainfall occurs. It has 3 pins used as input, output ground. The output from the astable multi-vibrator is given to the input of the IC UM66. First the output is given to the BC548 transistor to amplify it. After it is given to the input to UM66, the output from the UM66 is again given to the BC548 for amplification and then given to the speaker, and the speaker produce the sound. If the rain continues, the sound is also continuously produced. Fix the circuit except wires A and B and speaker. Place the speaker at the place where it can be heard, and place the wires

A and B in the open and close to each other for rainfall to occur. The IC UM66 helps to prolong the sound of the buzzer as long as the rain continues but consumes more power during this period [25].

CHAPTER 2

LITERATURE REVIEW

Abhishek Das et al., (2021) has proposed a model for an automatic car wiper system that had been operated on sensing rain and snow on the windshield of a car. They developed a prototype for this system by integrating a servo motor and raindrop sensor with an AT89C51 Microcontroller. [1]

Shivani Yadav et al., (2021) has proposed a paper in the topic of "Automatic Rain Sensing Wiper using Arduino." The usual wiper system required driver's attention to switch on the wiper system during rainfall. Whereas in traffic condition, driver should not be unfocused by manual adjustment of switching the wiper system which might lead to accident. They used a weather recognized method to construction an automatic rain sensing wiper on the wind screen during rain so as to avoid frenzy of driver. They used Arduino along with a rain sensor, an LCD 16x2 module, and a servo motor. the rainfalls were measured via water rain sensor was present in automatic wiper system to collect information via sensor the wiper would start rotating then dispatched to Arduino. This method exhibited good identification ability of raindrops and encouraging results for rainfall discernment. In order to keep away from condemning situation this automatic wiper system provided changeable wiping speed formed on precipitation intensity. The state of the art in this paper was not only money-making but also highly dispatch and more accurate and economically inexpensive which could be implemented in all low and middle intensity vehicles. [2]

Ayush Kalra et al., (2020) has proposed another such model in market that limits the cost while maintaining the efficacy. A rain sensor, a microcontroller and a driver integrated circuit (IC) were the major

components used in the construction and seamless working of the proposed device. Falling water has been quickly and precisely detected by the rain sensor which then transmitting the signal to the second component i.e., microcontroller which in turn energized the driver IC to switch the required motion of the wipers on using servo motor. This device converted a cumbersome manual operation to a smooth automatic one. [3]

K. Evangili Supriya et al., (2020) has developed a real time rain sensing and wind shield wiper control system with cloud computing and geotagging application. Many traditional systems used windshield wipers which worked intermittently and with variable speeds during rain. In majority of the vehicles an adjustable lever near the steering of the driver had to be operated by the driver to control the windshield wiper. This change of lever position would distract the driver's attention, more so during poor visibility that might lead to untoward incidents. To overcome the above problem, fully automatic windshield wiper system using Texas instruments CC3200 XL-Launchpad, Rain sensor YL-63, GSM SIM900A Module and Thing speak cloud. Further, the internet connectivity in the developed hardware would send messages to the connected cars/mobiles about the rain and the location of the vehicle could easily be tracked using Geotagging. [4]

Moni Sree et al., (2020) has proposed a paper on the topic automatic wiper system. In this system, a rain sensor, microcontroller and a driver integrated circuit was used to convert manual operation into automatic operation. When water falls on the rain sensor, the signal is been sent to the microcontroller but the sensor and then the microcontroller processed the data and energized the driver IC to turn on the wiper. With these modifications automatic cleaning of the glass could be done without the involvement of the driver. [5]

Andreas Reiner et al., (2019) has proposed the paper which investigated the image quality and the correctness of object detection within one wiping action under rainy weather conditions. The results suggested that the image quality and the object detection performance decreased as the raindrops accumulated on the windshield. Further, it had been shown that there was a trade-off between performance and time. Therefore, adaptive weighting data fusion should be implemented so that decisions were made based on the frames in which the sensors' data was the most reliable. The object detection with in-vehicle cameras which was affected by raindrops on the windshield since the outside view was disturbed. To counteract, windshield wipers were installed to improve visual information for human drivers but also benefit image sensors. [6]

Kumar Anshumali et al., (2019) has proposed an automatic windshield wiper. The existing automatic wiper system had false wiping just after the rainfall stoped which could be overcome by using proposed wiper system. The advantage of proposed automatic wiper system was compared with the water sensor of existing automatic wiper system after rainfall. The proposed system in this paper was more accurate and economically cheap which could be implemented in all low and middle level vehicles. In order to avoid critical situation this automatic wiper system provided variable wiping speed based on precipitation level. This automatic wiper system had low cost water sensor, Atmega8 microcontroller, Arduino Uno, LCD module and wiper motor, power cable. [7]

Praveen Kiran Mali et al., (2019) has proposed a paper for rain sensitive windscreen wiper system using a rain sensor. Rain sensor attached with a device called infrared (IR) light detectors attached. A device based on an optical sensor which emitted the IR light to the windshield. When it’s raining, the amount of reflected IR light would

decrease because there was a disturbance on the windscreen. The sensor would send this message to the PIC16F84A. The PIC sent the message to the wiper motor and move it. The system worked by using optical sensors to detect the amount of water on the windshield and controlling the wipers. The sensor was mounted in contact with the inside of the windshield, near the rear mirror. The sensor projected infrared (IR) light into the windshield at a 45-degree angle. If the glass was dry, most of the light was reflected back into the sensor by the front of the windshield. If rain drops on the windshield, they reflected the IR light in different direction because the wetter the glass, the less light took it back into the sensor. The electronic and software inside the sensor would turn on the wipers when the amount of light reflected onto the sensor decreases to a present level. The software set the speed of the wipers based on how much the IR was reflected back into the sensor. [8]

Sakshi Karande et al., (2019) has proposed an automatic wiper system that automatically switches ON detecting rain and stops when rain stops. This paper brought forward this system to automate the wiper system having no need for manual intervention. Rain sensor along with microcontroller and driver IC to drive the wiper motor were used. This system used rain sensor to detect rain, this signal was then processed by microcontroller to take the desired action. The rain sensor worked on the principle of using water for completing its circuit, so when rain falls on its circuit got completed and sent out a signal to the microcontroller. The microcontroller then processed this data and drove the motor IC to perform required action. The motor driver IC then drove a servomotor to simulate as a car wiper. [9]

Sourish Mitra et al., (2017) has proposed a paper on Arduino based Bluetooth car wiper system. The wiper starts to wipe when it captures any wireless Bluetooth signal from any mobile. They introduced

an innovative way to wipe the windshield. Although it was a Bluetooth based car wiper, there was a need for human intervention. For the wiper to start, it needs to detect Bluetooth signals and those should be sent by the driver to start the wiper. The Bluetooth car wiper was constructed using HC05 Bluetooth, Arduino, and servo motor. It could control the movement of the car wiper by sending low range Bluetooth signals. [10]

Bhagyashri U. Wani et al., (2016) has proposed paper for the efficient data communication media as CAN. This system consisted of different application in Vehicle automation using CAN. SAM3X8E cortex M3 processor as Master & slave processor. This system was applied for Rain detection module & LDR input for automatic Fog light ON-OFF & wiper movement, direction change of front light using different velocity input. [11]

Jee-Hun Park et al., (2016) has presented the paper in the topic the development of vision-based smart windshield wiper system that could automatically adjust its speed and intermittent interval according to the amount of water drops on the windshield. The system employed various image processing algorithms to detect water drops and fuzzy logic to determine the speed and the interval of the wiper. [12]

P.K. Otchere et al., (2016) has proposed that the automated rain wiper system was developed to mitigate driving distractions and allow drivers to focus on their primary task of driving. The system uses a combination of impedance and rain sensor to detect rain and its intensity. The system contains a controller that takes in the input signals from the sensors and controls the operation of the windshield wipers based on those input signals. The aim of this project was to help reduce accidents that happen as a result of the driver intending to clean the windscreen when rain is falling thereby taking the attention of the driver off the road when he or she is switching on and off the wiper. In rainy days we suffer

from act of sprinkling of water on front glass of our wheeler. While driving car, driver cannot see on road vehicles. So, he tries operating wiper on glass, for that he should often switch on for operating wiper and because of this it might cause vehicle accident. If we apply any kind of sensor on glass which senses the act of sprinkling water, by automation the wiper will be operating automatically. When the water hit the sensor, it would send signal to the system thus moving the wiper motor. Once the sensor did not detect any water, the wiper would stop. This would reduce the weaknesses which have been stated at beginning. Additional plan to this invention was to make the wiper automatically push up from the windscreen when the engine shut off. [13]

S. B. Patil et al., (2016) has proposed a paper on "Rain sensing automatic wiper and secure access system" which was used to detect rainfall and activate automobile windshield wipers without driver interaction. This system was developed to reduce driving distractions and allowed drivers to focus on main task of driving. The distraction eliminated with the development of this system was the manual adjustment of wipers when driving in precipitation. The few seconds that a driver would take their attention off the road to adjust a knob while driving in poor weather conditions could potentially lead to car accidents. The system used a combination of impedance and piezo-electric sensors to detect rain and its intensity. The system contained a microcontroller that takes in the input signals from the sensors and controls the operation of the windshield wipers based on those input signals. [14]

K. V. Viswanadh et al., (2016) has proposed the project in the title Design & Fabrication of Rain Operated Wiper Mechanism using Conductive Sensor Circuit which was designed for automobile vehicles and was fully equipped by sensor circuit and wiper motor. It included design and development of a control system based on electronically

controlled automotive rain operated motor called automated rain operated system. [15]

Lubna Alazzawi et al., (2015) highlighted fuzzy logic to operate the collected analog data from the rain sensor. The program was programmed to use fuzzy logic in collecting data. The wiper motor was controlled by the microcontroller which uses pulse width modulation. The reason for the fuzzy logic can be easily rearrange able. They were used to redesign things. It could be used to construct different wipers for different vehicles without changing any hardware configuration. Then it would be placed in a vehicle and used. [16]

Naresh et al., (2015) has proposed paper for automatic wiper in various method and explain the basic skeleton for adjust speed of wiper automatically according to the amount of water on the windshield and in addition with also in advance removal of moisture inside the car while raining. The system activates the wiper to operate in fully automatic mode and detect moister using CAN technology. [17]

Prajapati Vijay et al., (2015) the automated rain wiper system is used to detect rainfall and activate automobile automatic rain wipers without driver interaction. The system was developed to mitigate driving distractions and allow drivers to focus on their primary task of driving. The distraction eliminated with the development of this product is the manual adjustment of windshield wipers when driving in precipitation. The few seconds that a driver takes their attention off the road to adjust a knob while driving in poor weather conditions could potentially lead to car accidents. The system uses a combination of impedance and Impedance sensor to detect rain and its intensity. The system contains a controller that takes in the input signals from the sensors and controls the operation of the windshield wipers based on those input signals. The prototype demonstration shows the basic operation of the system in

standard conditions. The system responded successfully to rain simulations within the specified amount of time. [18]

Mukul Joshi et al., (2013) has proposed a paper named "A novel and cost-effective resistive rain sensor for automatic wiper control" which is economical, efficient and has a good output. This paper used a resistive rain sensor. They developed a wiper which was practically verified, and a sensor was developed an equivalent mathematical model. The rain sensor generally has a predetermined rotational geometry. When the droplets of the rainfall on the sensor, the droplets form a layer on the surface of the sensor causing non-linearity to its resistance. To decrease the non-linearity and to increase the efficiency of the system, the response from the sensor was to be linearized. The response could be linearized by using the linearization circuit with the equivalent electrical model of the sensor. To achieve the changes in the speed based on the output provided by the rain sensor, customized PIC micro-controller was used in the system. [19]

Anil G. Bansode et al., (2012) has proposed an effective design and development of an automatic windshield wiper system, based on intensity of rain. The system comprised of PIC (Peripheral Interface Controller), grid sensor and a D.C. motor to actuate the windshield wiper. The grid sensor was used to detect the rain intensity which was based on the simple principle that, as wetness increased sensor output voltage decreased, when the sensor was a part of voltage divider circuit. It had an ability to change the wiper speed automatically with the change in rain intensity. To measure the rain intensity Matlab 7.0 fuzzy logic toolbox was used to predict the intensity of rain (High rain, Medium rain, Drizzle).[20]

CHAPTER 3

METHODOLOGY

3.1 HARDWARE SECTION

3.1.1 ATmega328

ATmega328 is a high-performance Atmel 8-bit AVR RISC-based micro controller. By executed powerful instruction in a single clock cycle, the device achieves throughputs approaching 1MIPS per MHz, balancing power consumption and processing speed. The AVR core combines a rich instruction set with 32 general purpose working registers. All the 32 registers are directly connected to the Arithmetic and Logic Unit (ALU) allowing two independent registers to be accessed in one single instruction executed in one single clock cycle.

3.1 ATmega328

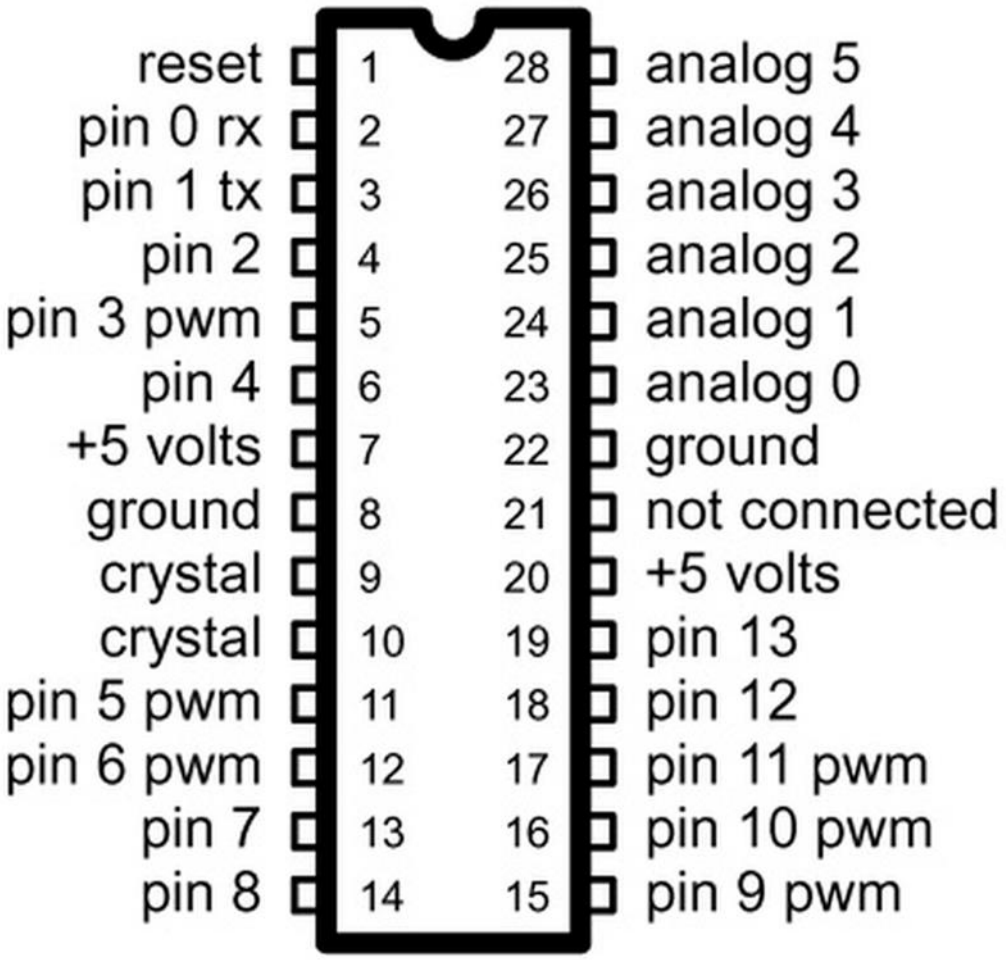
3.1.2 ATmega328 Features

32KB ISP flash memory with read-while-write capabilities, 1KB EEPROM, 2KB SRAM, 23 general purpose I/O lines, 32 general purpose working registers, three flexible timer/counters with compare modes, internal and external interrupts, serial programmable USART, a byte-oriented 2- wire serial interface, SPI serial port, 6-channel 10-bit A/D

converter (8-channels in TQFP and QFN/MLF packages), Programmable Watchdog Timer with internal oscillator, and five software selectable power saving modes. The idle mode stops the CPU while allowing the SRAM, Timers/Counter functioning. This allows very fast start-up combined with low power consumption.

The device is manufactured using Atmel's high density non-volatile memory technology. The on-chip ISP Flash allows the program memory to be reprogrammed In-system through an SPI serial interface, by a conventional non-volatile memory programmer or by an on-chip Boot program running on the AVR core. The boot program can use any interface to download the application program in the Application Flash memory. Software in the Boot Flash section will continue to run while the Application Flash section is updated, providing true Read-While-Write operation. By combination an 8-bit RISC CPU with In-system self-programmable Flash on monolithic chip, Atmega328 is a powerful microcontroller that provides a highly flexible and cost-effective solution to many embedded control applications.

3.1.3 Pin Configuration



3.2 Pin configuration for ATmega328

3.1.4 Pin Description

3.1.4.1 Digital pins

The digital pins on the Floduino board can be used for general input and output through the flowing commands.

pin mode ()

digital read ()

digital write ()

Each pin has an internal pull-up resister. When the pin is configured as an input the digital write () command is used.

Serial 0(RX) and 1(TX)

Serial data is divided into two signals namely,

1. Transmitter (TX)-When the signal is low it transmits serial data
2. Receiver (RX)- when the signal is high it receives serial data

External interrupts 2 and 3

These pins can be configured to trigger an interrupt on a low value, a rising or falling edge, or a change in value.

PWM: 3, 5, 6,9,10 AND 11

These pins provide an 8-bit PWM output with the analog on a low value, a rising or falling edge, or a change in value.

BT Reset: 7

(Floduino BT-only) connected to the reset line of the Bluetooth module.

LED: 13

When the pin is HIGH value, the LED is on, when the pin is LOW, it's off.

3.1.4.2 Analog pins

The analog input pins support (ADC) using the analog Read () function. Most of the analog inputs can also be used as digital pins: analog input 0 as digital pin 14 through analog input 5 as digital pin 19. Analog inputs 6 and 7 cannot be used as digital pins.

3.1.4.3 Power pins

V IN

It is an input voltage given to the Floduino board using an external power source. Voltage is supplied through this pin or a power jack can be accessed through this pin. The input voltage varies according to the board.

5 V

It is a regulated power supply used to power the microcontroller and other components on the board. This can come either from input voltage through an on-board regulator, or can be supplied by USB or another regulated 5V supply.

3.3 V

A 3.3 Volt supply generated by the on-board FTDI chip.

GND - Ground pins.

3.1.4.4 Other pins

AREF

The reference voltage for the analog inputs is given through AREF.

Reset

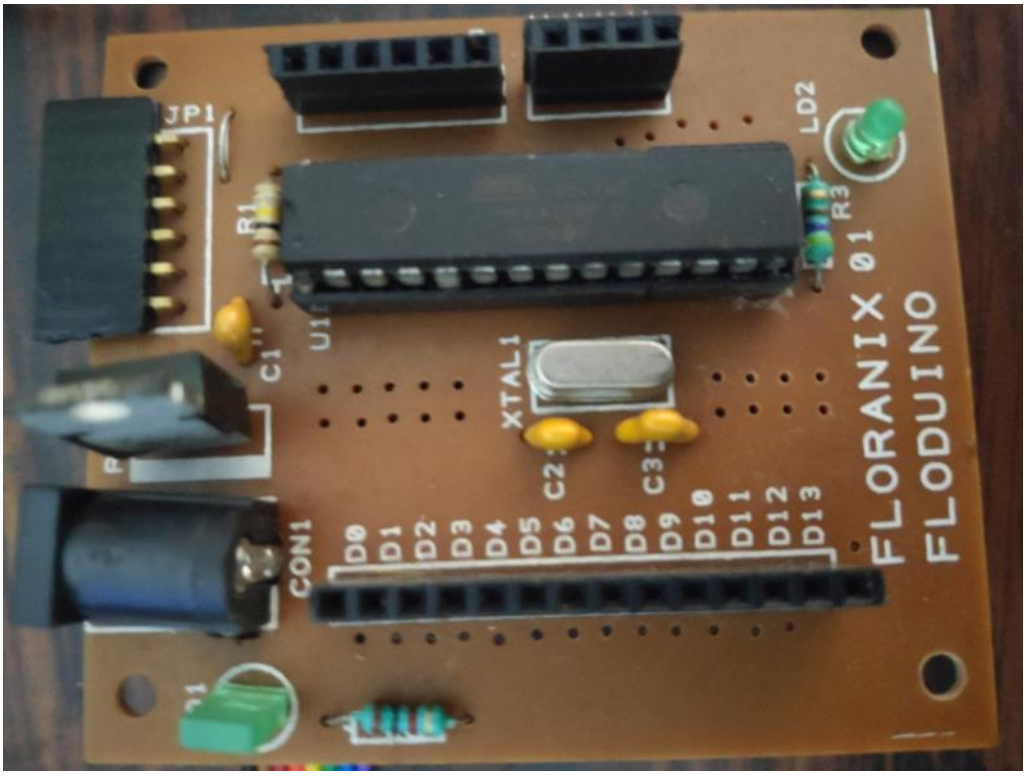
It resets the microcontroller chip.

3.2 INTORDUCTION OF FLODUINO

Floduino uses an embedded micro controller ATmega328. It is a 28-pin microchip with 32k FLASH memory.

Embedded C program downloaded from the computer into the flash memory empowers AT MEGA 328 chip to program different specified application. Erasing and reprogramming can be accomplished at ease through the EPROM available inside AT MEGA 328 chip.

The software embedded powers the chip by controlling the 14 numbers of digital I/O pins and 4 numbers of analog input pins. AT MEGA 328 houses a rich set of macros in its LIBRARY and makes programming simpler and enjoyable. The chip is an open platform exposed for multiple applications expanding its adaptability to empower its versatility through various transducer modulus available.



3.3 Floduino

3.2.1 Features of Floduino

Microcontroller	ATmega328
Operating voltage	5V
Input voltage(recommended)	7-12V
Input voltage(limits)	6-20V
Digital I/O Pins	14(of which 6 provide PWM output)
Analog Input pins	6
DC current per I/O pin	40 Ma
DC current for 3.3V pin	50 Ma
Flash memory	32KB (AT mega328) of which 0.5 KB used by boot loader
SRAM	2 KB(ATmega328)
EEPROM	1KB(ATmega328)

Clock speed	16MHz

The Floduino can be powered via the USB connection or with an external power supply. The power source is selected automatically. External (non-USB) power can come either from an AC-to-DC adapter (wall-wart) or battery. The adapter can be connected by plugging a 2.1mm center-positive plug into the board power jack. Leads from a battery can be inserted in the Gnd and Vin pin headers of the POWER connector.

The board can operate on an external power supply of 6 to 20 volts. If using more than 12V, the voltage regulator may overheat and damage the board. The recommended range is 7 to 12 volts.

3.3 SERVO MOTOR

A servo motor is an electrical device which can push or rotate an object with great precision. If you want to rotate and object at some specific angles or distance, then you use servo motor. It is just made up of simple motor which run through servo mechanism.

3.4 Servo Motor

If motor is DC powered then it is called DC servo motor, and if it is AC powered motor then it is called AC servo motor. We can get a very high torque servo motor in a small and light weight package. The position of a servo motor is decided by electrical pulse and its circuitry is placed beside the motor.

3.3.1 Working principle of Servo Motors

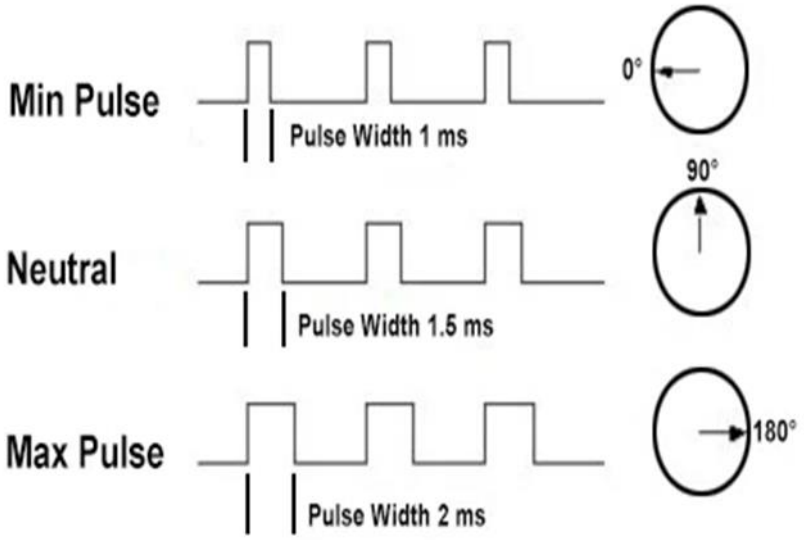
A servo consists of a Motor (DC or AC), a potentiometer, gear assembly and a controlling circuit. Gear assembly is used to reduce RPM and to increase torque of motor. At initial position of servo motor shaft, the position of the potentiometer knob is such that there is no electrical signal generated at the output port of the potentiometer. Now an electrical signal is given to another input terminal of the error detector amplifier. Now difference between these two signals, one comes from potentiometer and another comes from other source, will be processed in feedback mechanism and output will be provided in term of error signal. This error signal acts as the input for motor and motor starts rotating. Now motor shaft is connected with potentiometer and as motor rotates so the potentiometer and it will generate a signal. So as the potentiometer's angular position changes, its output feedback signal also changes.

After sometime the position of potentiometer reaches at a position that the output of potentiometer is same as external signal provided. At this condition, there will be no output signal from the amplifier to the motor input as there is no difference between external applied signal and the signal generated at potentiometer, and in this situation motor stops rotating.

3.3.2 Controlling of Servo Motor

Servo motor is controlled by PWM (Pulse with Modulation) which is provided by the control wires. There is a minimum pulse, a maximum pulse and a repetition rate. Servo motor can turn 90° degrees from either

direction form its neutral position. The servo motor expects to see a pulse every 20 milliseconds and the length of the pulse will determine how far the motor turns. For example, a 1.5ms pulse will make the motor turn to the 90° position, such as if pulse is shorter than 1.5ms shaft moves to 0° and if it is longer than 1.5ms than it will turn the servo to 180°.



3.5 Controlling of Servo motor

Servo motor works on PWM (Pulse width modulation) principle means its angle of rotation is controlled by the duration of applied pulse to its Control PIN. Basically, servo motor is made up of DC motor which is controlled by a variable resistor (potentiometer) and some gears. High speed force of DC motor is converted into torque by Gears.

WORK = FORCE X DISTANCE

DC motor Force is less and distance (speed) is high and in Servo, force is high and distance is less. Potentiometer is connected to the output shaft of the Servo, to calculate the angle and stop the DC motor on required angle.

Servo motor can be rotated from 0° to 180° degree, but it can go up to 210° degrees, depending on the manufacturing. This degree of rotation

can be controlled by applying the Electrical Pulse of proper width, to its Control pin. Servo checks the pulse in every 20 milliseconds. Pulse of 1 ms (1 millisecond) width can rotate servo to 0 degree, 1.5 ms can rotate to 90° degree (neutral position) and 2 ms pulse can rotate it to 180° degrees.

A servomotor is a rotary actuator or linear actuator that allows for precise control of angular or linear position, velocity and acceleration.it consists of a suitable motor coupled to a sensor for position feedback. It also requires a relatively sophisticated controller, often a dedicated module designed specifically for use with servomotors. Servomotors are not a specific class of motor although the term servomotor is often used to refer to a motor suitable for use in a closed-loop control system.

3.4 CIRCUIT

3.4.1 Circuit explanation

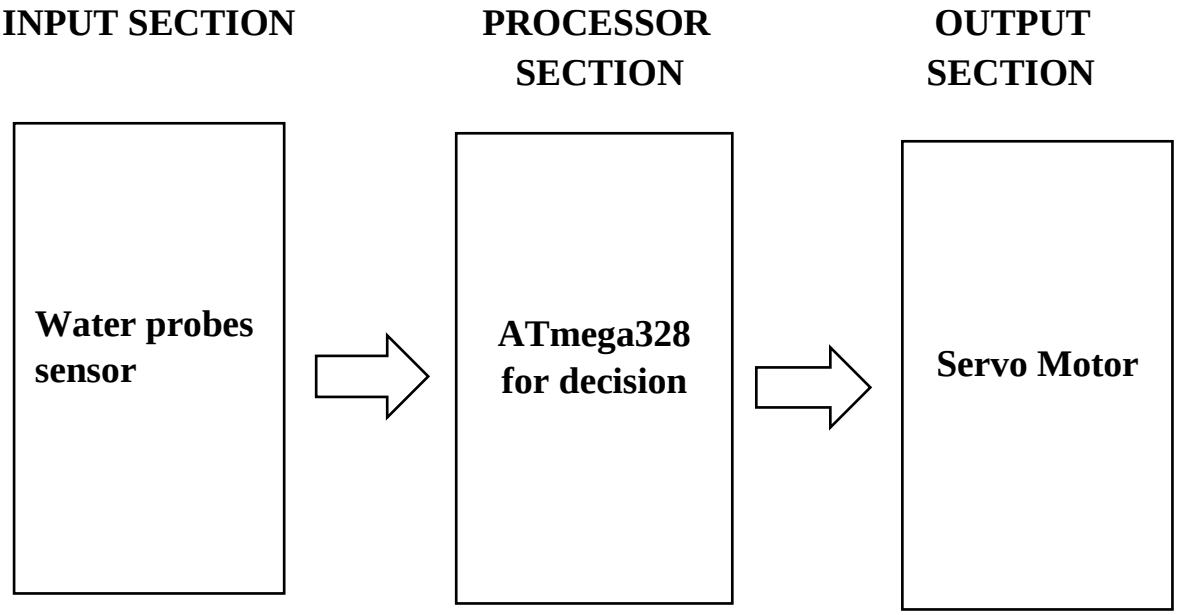
Water level indicator probe consist of 4 pins. They are trigger pin, echo pin, ground and vcc. The trigger pin is connected to D4 (digital pin) of ATmega328. The echo pin of the sensor is connected to D5 of ATmega328. Servo motor has three pins vcc, ground and pulse pin. The pulse pin connected to the digital pin D9 of ATmega328.

3.5 WORKING PRINCIPAL OF THE PROJECT

The project consists of three sections.

1. Water level indicating input section using water level indicator probe.
2. Processor section using ATmega328 embedded microcontroller to decide action.
3. The servomotor attached to the wiper blade clearing and providing a clear view of the road forming the output section.

3.5.1 Block diagram



3.5.2 Processor Section - The Speed of the Wiper Action decide

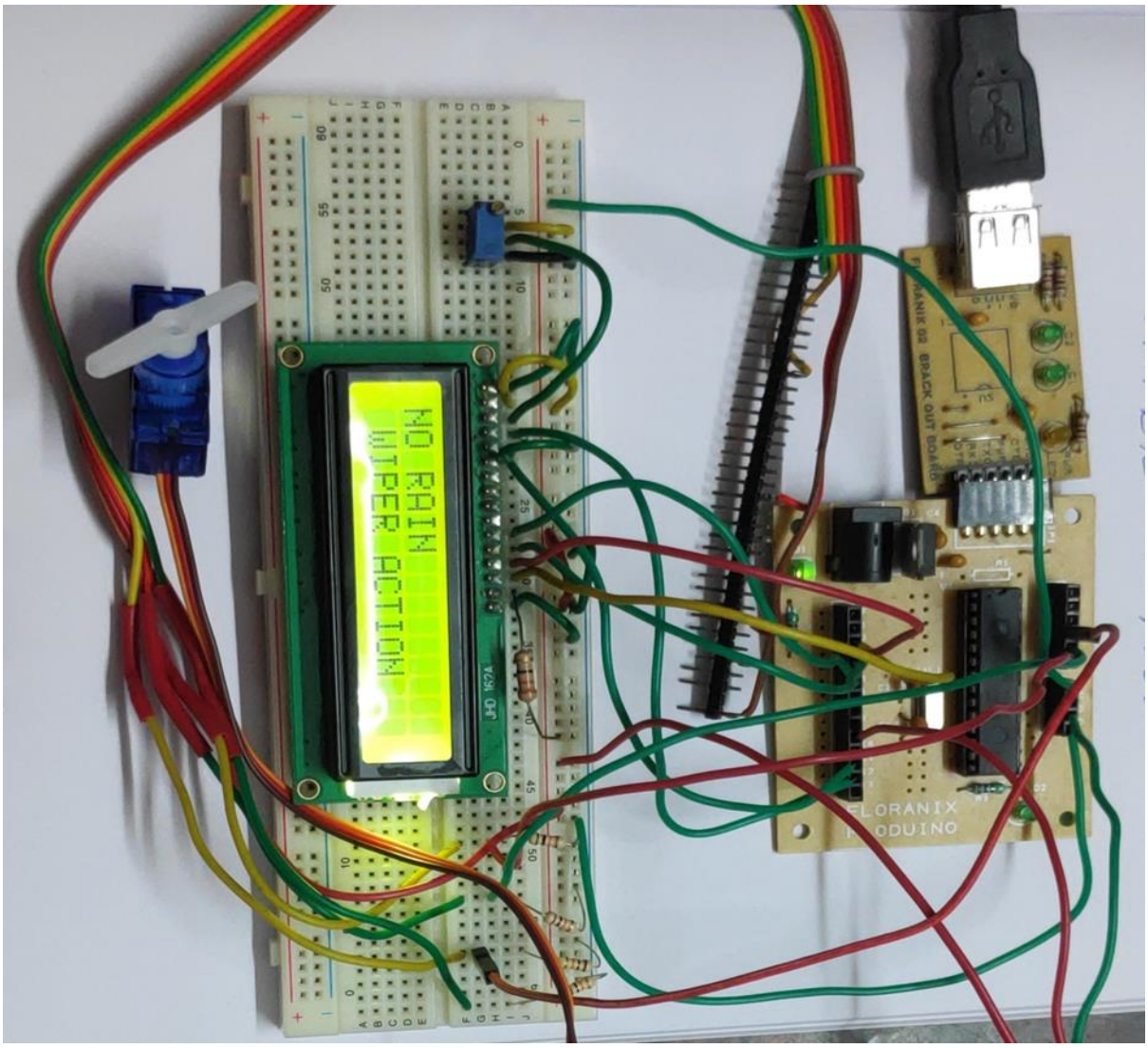
The processor sends a start trigger pulse to initiate water level probe and reads the count N of the counter when the reflected signal is received. Comparing N with a pre fixed number 'N', a decision is made to reduce or decrease the speed of the wiper action.

The servo motor is capable of rotating continuously from 0˚ to 180˚ clockwise or from 180˚ to 0˚ anticlockwise in steps of 1˚ or in steps of 10˚ depending upon the PWM signal sent by the microcontroller to the enable pin of the servomotor. If the pulse width is less the servo rotates by 1˚ only taken more time while for a bigger pulse width the servo rotates in steps of 10˚ cover the angular distance is a short time. This action is controlled by the library function stored inside the controller. Thus, the instructions are given to the servo motor to rotate clockwise or anticlockwise either in steps of 1˚ or in steps of 10˚ depending upon the value of N received from the ultrasonic sensor section. The PWM command to alter the speed of the wiper accordance with the intensity of rain is given to the enable pin of the servo motor so as to rotate if faster or slower by the controller.

3.5.3 Output Section - Variation of Speed

The servo motor standing from 0˚ is made to rotate clockwise up to 180˚ in steps of 1˚ and back from 180˚ to 0˚ for less rain and the same ‘to and fro’ operation in steps of 10˚ heavy rains by the PWM signals from the processor section at it enable pin.

If the shaft rotates through 1˚ only for every ms, it takes more from to cover 180˚ and so rotates slowly on the other hand of the shaft jump through 10˚ for every ms, it can cover 180˚ rotation in a shorter time and works faster.



3.7 Bread board connection for “Automatic windshield wiper”

Thus, the speed of the wiper action is controlled by the servo motor depending on the intensity of rain.

3.6 SOFTWARE SECTION EMBEDDED C PROGRAM

Floduino programs can be divided into three main parts.

1. Structure
2. Value (variables and constants)
3. Function

3.6.1 Structure

Floduino program runs in two parts

Void setup ()

Void loop ()

Setup () is preparation and loop () are execution. In the setup section, always at the top of your program, you would set Pin Modes, initialize serial communications, etc. The loop section is the code to be executed – reading inputs, triggering outputs, etc.

Variable declaration

Function declaration

3.6.1.1 Control structures

- if
- if...else
- for
- switch case
- while
- do...while
- break
- continue
- return
- go to

3.6.1.2 Operators

1. Arithmetic operators
2. Comparison operators
3. Boolean operators
4. Compound operators

Arithmetic operators

- = (assignment operators)
- +(addition)
- -(subtraction)
- *(multiplication)
- /(division)
- %(modulo)

Comparison operators

- = (equal to)
- ! = (not equal to)
- < (less than)
- > (greater than)
- <= (less than or equal to)
- >= (greater than or equal to)

Boolean operators

- &&(and)
- ‖(or)
- ! (not)

Compound operators

- ++(increment)
- --(decrement)
- += (compound addition)
- -= (compound subtraction)

- *= (compound multiplication)
- /= (compound division)
- &= (compound bitwise and)
- = (compound bitwise or)

3.6.2 Variables

Variables are expressions that are used in programs to store values, such as sensor reading from an analog pin. Variables are classified into

- Constants
- Data type

3.6.2.1 Constants

Constants are particular values with specific meaning.

- HIGH │ LOW
- INPUT │OUTPUT
- True │false
- Integer constants

3.6.2.2 Data types

Variables can have various types, which are described below.

- Void
- Boolean
- Char
- Unsigned char
- Byte
- int
- Unsigned int
- Word
- Long
- Unsigned long
- Short

- Float
- Double
- String – object
- Array

3.6.3 Syntax

- ; (semicolon)
- {} (curly braces)
- // (single line comment)
- /**/ (multi-line comment) or block comment

; Semicolon

A semicolon must be used to end a statement and separate elements of the program. A semicolon is also used to separate elements in a loop.

Int x=13; //declares variable ‘’x’’ as the integer 13

{} curly braces

Curly braces define the beginning and end of function blocks and statement blocks such as the void loop () function and for and is statement.

```
Type function ()
{
Statements;
}
```

The opening curly braces {must always be followed by a closing curly brace}. This often referred to the braces being balanced.

Unbalanced braces can often lead to cryptic, impenetrable compile errors that can sometime too hard to track down in a large program.

// single line comment

Single line comment begins with // and end with the next line of code. Link block comments, they are ignored by the program and take no memory space.

// this is a single line comment

Single line comment is often used after a valid statement to provide more information about what the statement accomplishes or provide a future remainder.

/*/* multi – line comment

Block comments or multi line comments, are areas of text ignored by the program and are used for large text descriptions of code or comments that help others understand part of the program.

They begin with /* and end with*/. When experimenting with code, ‘’commenting out’’ parts of the program is a convenient way to remove lines that may be buggy. This leaves the lines is the code, but turns them into comments, so the compiler just ignores them. This can be especially useful when trying to locate a problem, or when a program refuses to compile and the compiler error is cryptic or unhelpful.

3.6.4 Serial communication

Serial communication is used for communication between the Floduino board and a computer. This communication happens via the Floduino board’s serial or USB connection and on digital. When using serial communication, digital pins 0(RX) and 1(TX) cannot be used at the same time.

- Pins 0(RX) and 1(TX)
- Serial. Begin(speed)
- Int. serial. read ()
- Serial. flush()
- Serial. print(data)

- Serial. printIn(data)
- Serial. begin(rate)

Open serial port sets the baud rate for serial data transmission. The typical baud rate for communicating with the computer is 9600 although other speed is supported.

```
Void setup ()
{
Serial. Begin (9600); // opens serial port
}
// sets the data to 9600 bps
```

3.6.4.1 Serial. printIn (data)

Print data to the serial port, followed by an automatic carriage return and line feed. This command takes the same from a serial. Print (), but is easier for reading data on the serial monitor.

```
Serial. printIn (analog value); // sends the value of
                                //*analog value'
```

The following examples takes a reading from analog pin () and sends data to the computer every 1 seconds.

```
Void setup ()
{
Serial. Begin (9600); // sets serial to 9600 bps
}
Void loop ()
{
Serial.printIn (analog read (00; // sends analog values
                                 // pauses for 1 seconds
}
```

3.7 FUNCTIONS

A function is a block of code that has a name and a block of statements that are executed when the function is called.

3.7.1 Setup function

This function should follow the declaration of any variable at the variable at the very beginning of the program. It's the first function to run in the program, is run only once and used to set pin mode or initialize serial communication.

3.7.2 Loop function

The loop function follows next and include the code to be executed continuously reading inputs, triggering outputs, etc.

3.8 DIGITAL I/O

3.8.1 Pin mode (pin, mode)

Used in void setup () to configure a specified pin to behave as INPUT or an OUTPUT.

Pin mode (pin, OUTPUT); // sets 'pin' to the output

Floduino digital pins default to inputs, so they don't need to be explicitly declared as inputs with pin mode (). There is also convenient pull –up resistor builds into ATmega chip that can access from software. These build-in pull up resistors are accessed in the following manner.

pin Mode (pin, INPUT); // Set 'pin' to input

digital Write (pin, HIGH); //turn on pull-up resistors

3.8.2 Digital Write (pin, value)

The outputs either logical level HIGH or LOW at (turn on or off) a specified digital pin. The pin can be specified as either a variable or constant (0-13).

digital Write (pin, HIGH); // set 'pin' to HIGH

3.8.3 Digital Read (pin)

Read the value from specified digital pin with the result either HIGH or LOW. The pin can be specified as either a variable or constant (0-13).

Value=analog read (pin); //sets ‘values’ equal to pin

3.8.4 Analog write (pin, value) – PWM

Write the analog value using hardware enabled pulse width modulation (PWM) to an output pin marked PWM. Floduino with the ATmega328 chip, this function works on pins 3,5,9,10,11.The value can be specified as a variable or constant with a values from 0 – 255.

Analog write (pin, Value); //writes ‘values’ to the analog ‘pin’

A value of 0 generates a steady 0 volts output at the specified pin. A value of 255 generates steady 5 volts output at the specified pin.

For values in between 0 and 255, the pin rapidly alternates between 0 to 5 volts the higher the value, the more often the pin is HIGH (5 volts). Because of this is a hardware function, the pin will generate a steady wave after a call to analog write (or a call to digital read or digital write on the same pin).

3.9 TIME

Delay (MS)

Pauses the program for an amount of time as specified in milliseconds, where 1000 equals to 1 second.

Delay (1000); // wait for one second

MILLISECOND

Returns the number of millisecond since to FLODUINO board began running the current program as an unsigned long value.

Value=Millis (); //sets ‘value’ equal to ‘mills’

There are two required functions in an FLODUINO sketch, setup () and loop (). Other functions must be created outside the brackets of those two functions. As an example, we will create a simple function to multiply two numbers.

3.10 DEFINING PIN LEVEL "HIGH" AND "LOW"

When reading or writing to a digital pin there are only two possible values a pin can take / be – set – to: HIGH and LOW.

HIGH

The meaning of HIGH (in reference to a pin) is somewhat different depending on whether a pin is set to an INPUT and OUTPUT. When the pin is configured as an INPUT with pin mode, and read with digital is present at the pin. When a pin is configured to OUTPUT with pin mode, and set to HIGH with digital write, the pin is at 5 volts. In this state it vans source current e.g., Light an LED that is connected through a series resistor to ground, or to another pin configured as an output, and set to LOW.

LOW

The meaning of LOW also has a different meaning depending on whether a pin is set to INPUT and OUTPUT. When a pin is configured as an INPUT with pin mode, and read with digital read, the microcontroller will report LOW if a voltage of 2 volts or less is present at the pin. When a pin is configured to OUTPUT with pin mode and set to LOW with digital write, pin is at 0 votls.in the sate it can sink current, i.e., light an LED that is connected through a series resistor to +5volts or to another pin configured as an OUTPUT and set to HIGH.

3.11 DEFINING DIGITAL PINS, INPUT AND OUTPUT

Digital pins can be either INPUT or OUTPUT. Changing a pin INPUT to OUTPUT with pin mode () drastically changes the electrical behavior of the pin.

Pins configured as inputs

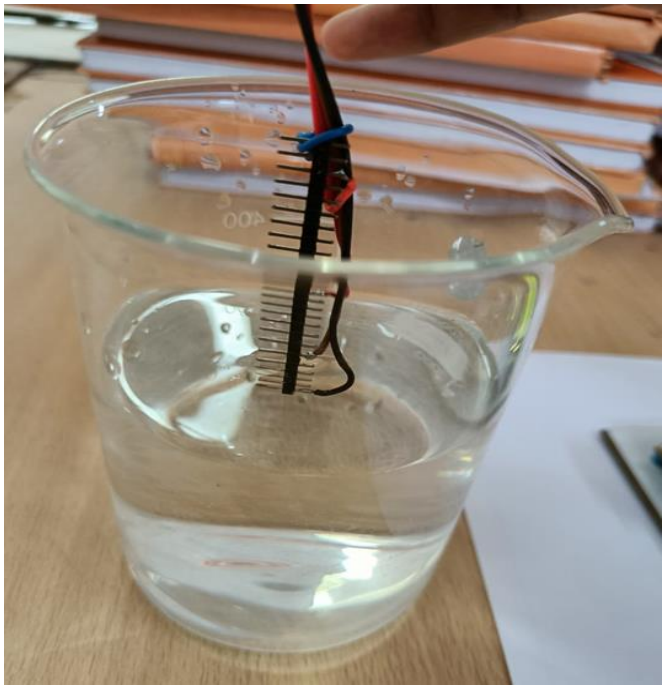
Floduino (ATmega328) pins configured as INPUT with pin mode () are said to be in a high-impedance state. One way of explaining this is that pins configured as input make extremely small demands on the circuit that they are sampling, say equivalent to a series resistor of 100 mega ohms in front of the pin. This makes them useful for reading a sensor, but not powering an LED's but useless for reading sensors. Pins configured as output can also damage or destroyed if short circuited to either ground or 5 volts power rails. The amount current provided by an ATmega328 pin is also not enough to power most relays or motors and some interface circuitry will be required.

Water level indicator sensor

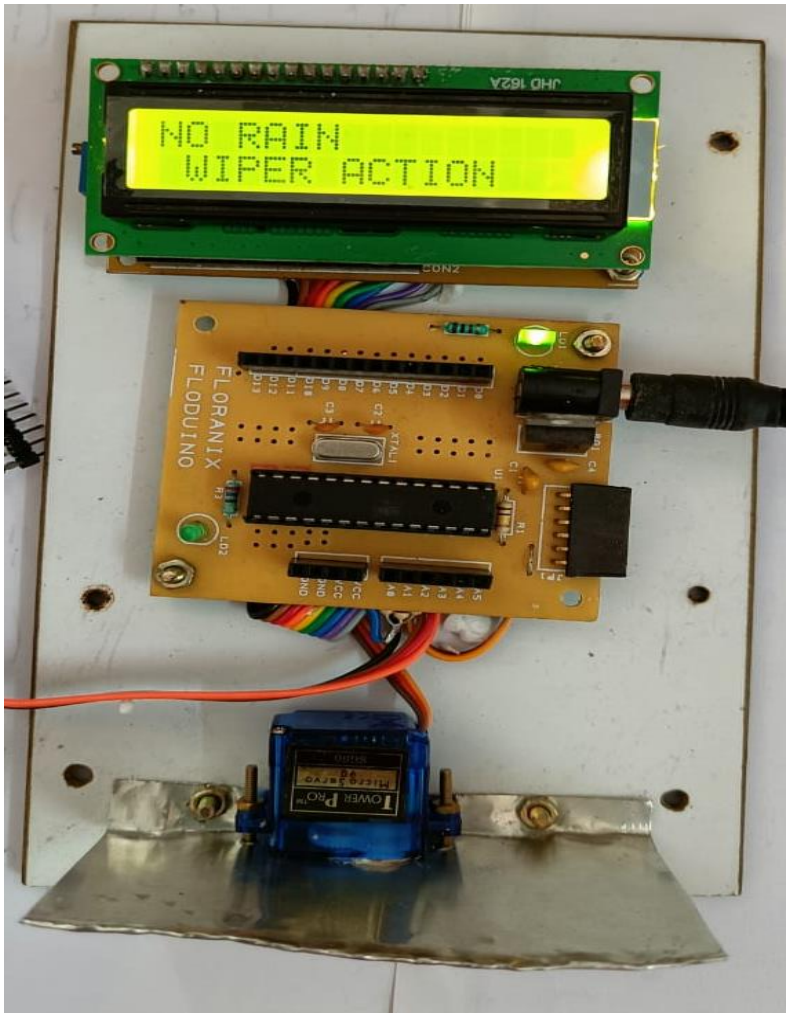
A water level indicator sensor is also known as a probe sensor. It detects the intensity of the rain and increases the speed of the wiper. The moisture is measured via analog output pins which are present in the rain sensor, the wiper starts rotating when a threshold of moisture is exceeded.

NO RAIN

If no rain is collected, the probe will touch the bottom of the beaker. +5V at reference probe will not be linked to probe 1 which is placed nearer to reference point connected to A0 will be at logic '0'. The probe 2, probe 3 and probe 4 placed at ¼, ½, ¾ level of the beaker are connected to A1 and A2 of ATmega328. A0 is at logic'0' as scanned by multiplexer circuit, the decision leads to "NO RAIN" in the display.



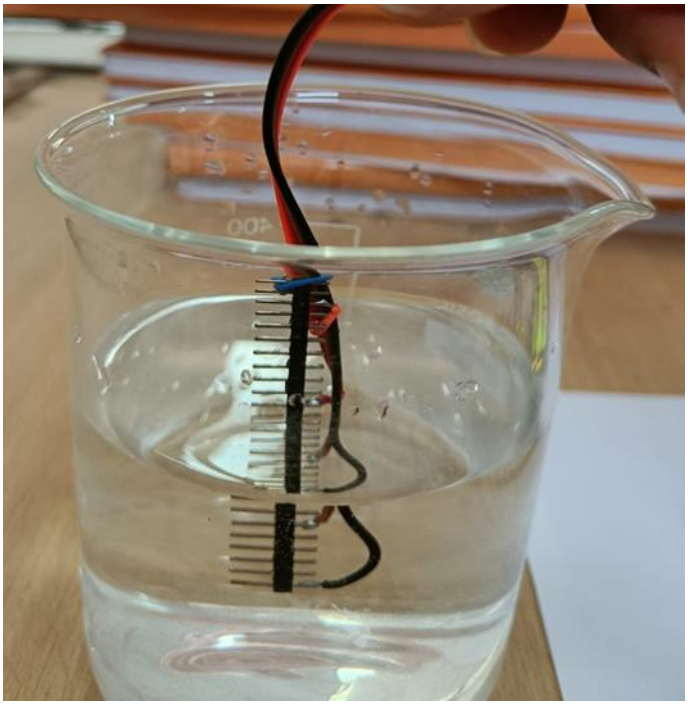
3.8 Reference probe



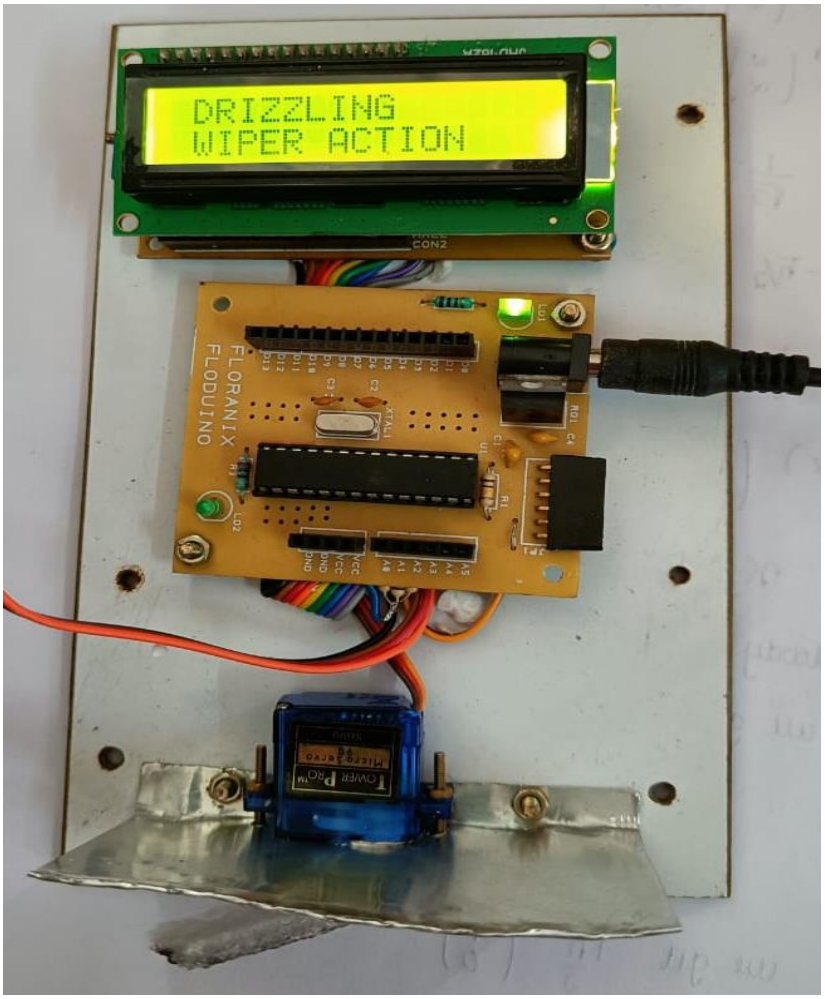
3.9 LCD- NO RAIN

DRIZZLING

As water rises the reference point is connected to probe 1 through water. A0 becomes +5V. The N value will be above 900. The decision is taken to have slow wiper action with a time delay of 4T sec. The LCD display will show “DRIZZLING”.



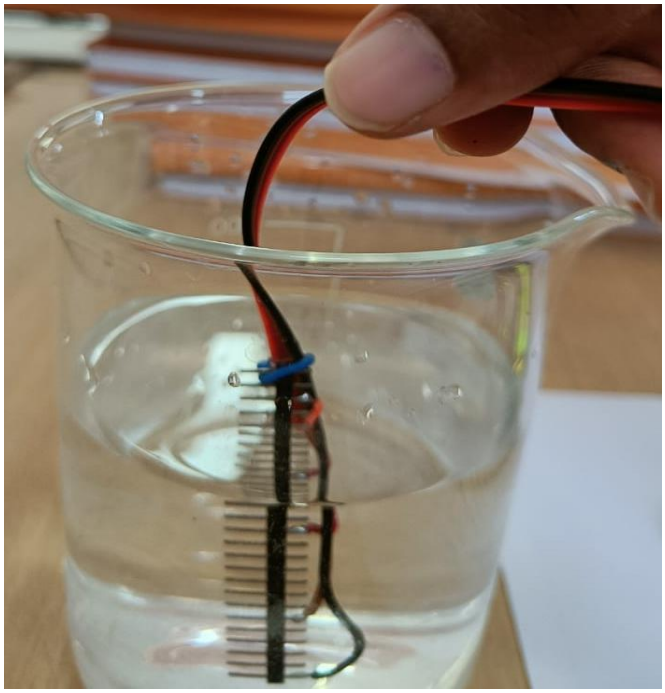
3.10 Probe 1



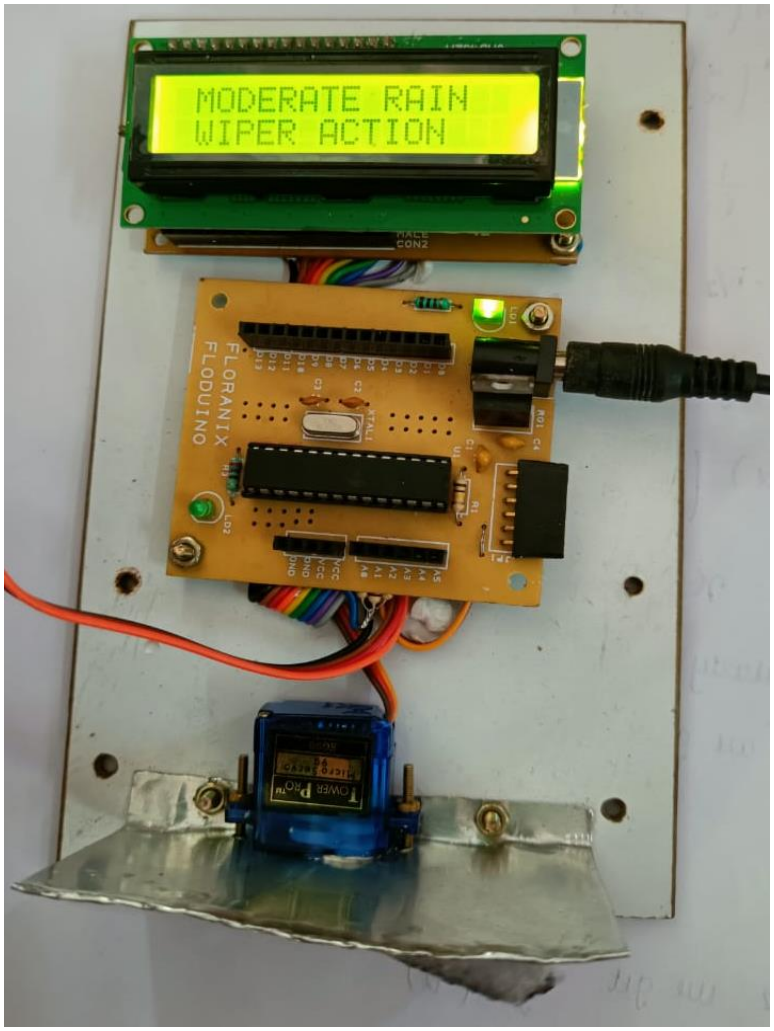
3.11 LCD- DRIZZLING

MEDIUM RAIN

For medium rain, water level in the beaker rises connecting references probe with probe 1 and probe 2. This makes A0 and A1 to be placed at 2.5 V sharing +5V each so the decimals equivalent number N value becomes 500. Accordingly, when 900 < N > 500, the wiper action will be medium fast with 2T sec delay. The display shows “MEDIUM RAIN”.



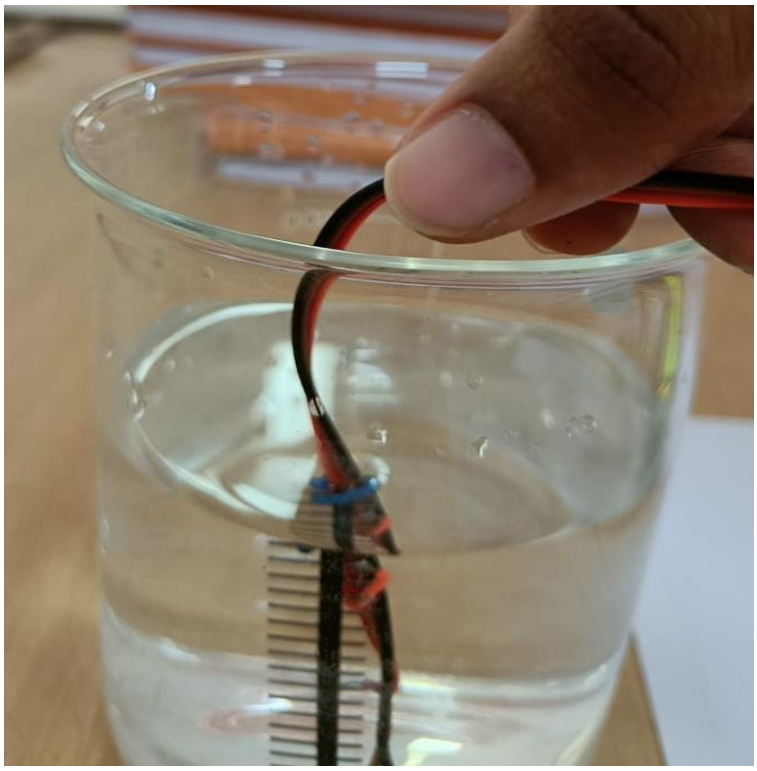
3.12 Probe 2



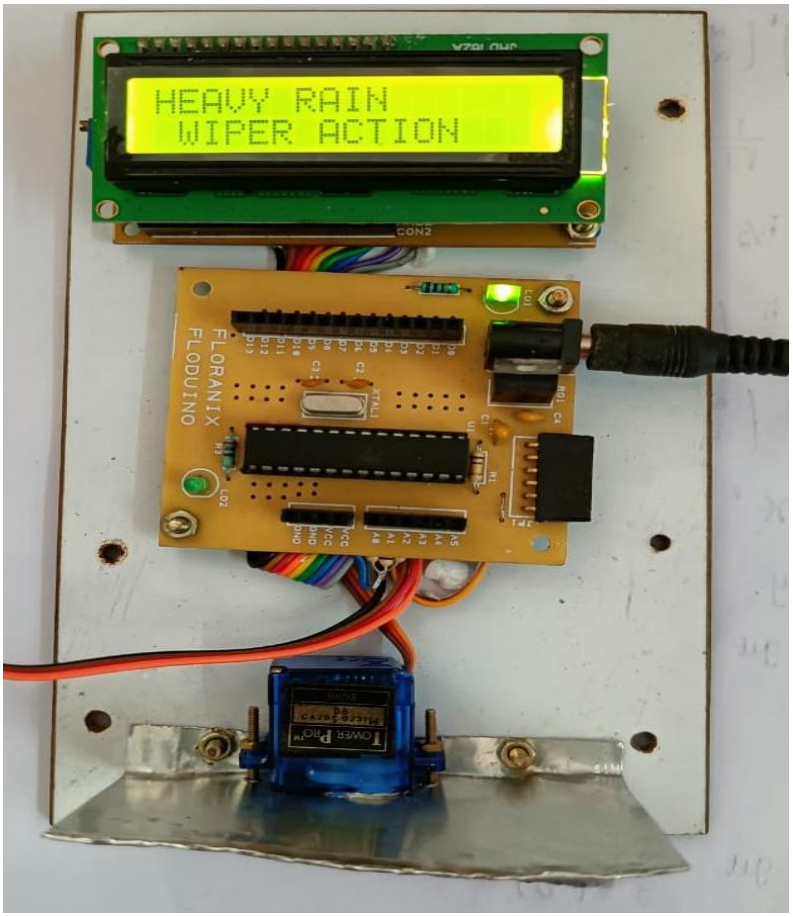
3.13 LCD- MODERATE RAIN

HEAVY RAIN

For heavy rain water level in the beaker rises still further, connecting reference probe with probe 1, probe 2 and probe 3. This makes A0, A1, and A2 to be placed at 1.6V (all the three sharing 5V). Hence, the decimal equivalent number N produced will be 320. According to this 500 < N > 300 condition will make fast wiper action with 1T sec delay. The LCD display action will show the message “HEAVY RAIN”.



3.14 Probe 3



3.15 LCD-HEAVY RAIN

Thus, the servo motor controlling the wiper action on the shield provides No action, slow action, medium action and fast action depending upon the amount of water rising in the beaker according to the variable intensity.

The to and fro wiper action is producing 0˚ to 180˚followed by 180˚ to 0˚ anticlockwise is taken by the software

3.12 PROGRAMMING FOR WIND WIPER ACTION

```
#include<Servo.h>

#include<LiquidCrystal.h>

Servo myservo;

LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
```

```
int pos = 0;
int LEVEL;
void setup()
{
myservo.attach(9);
Serial.begin(9600);
lcd.begin(16, 2);
lcd.setCursor(0,0);
lcd.print("WIND SHIELD ");
lcd.setCursor(0,1);
lcd.print(" WIPER ACTION");
pinMode(6,OUTPUT);
pinMode(7,OUTPUT);
pinMode(8,OUTPUT);
}
void loop()
{
int LEVEL1=analogRead(A0);
int LEVEL2=analogRead(A1);
int LEVEL3=analogRead(A2);
int v=100;
Serial.println(analogRead(A0));
```

```
if(LEVEL3>v && LEVEL2>v && LEVEL1>v )
{
digitalWrite(8,HIGH);
lcd.setCursor(0,0);
lcd.print("HEAVY RAIN    ");
for(pos=0;pos<=180;pos+=1)
{
 myservo.write(pos);
 delay(5);
 }
 for(pos=180;pos>=0;pos-=1)
{
 myservo.write(pos);
 delay(5);
}
digitalWrite(8,LOW);
}
else if(LEVEL3<v && LEVEL2>v && LEVEL1>v )
{
digitalWrite(7,HIGH);lcd.setCursor(0,0);
lcd.print(" MODERATE RAIN ");
for(pos=0;pos<=180;pos+=1) {
```

```
myservo.write(pos);
delay(10);
}
for(pos=180;pos>=0;pos-=1)
{
myservo.write(pos);
delay(10);
}
digitalWrite(7,LOW);
}
else if(LEVEL3<v && LEVEL2<v && LEVEL1>v )
{
digitalWrite(6,HIGH);lcd.setCursor(0,0);
lcd.print(" DRIZZLING    ");
for(pos=0;pos<=180;pos+=1)
{
myservo.write(pos);
delay(20);
}
for(pos=180;pos>=0;pos-=1)
{
myservo.write(pos);
```

```
delay(20);
}
digitalWrite(6,LOW);
}
else if(LEVEL3<v && LEVEL2<v && LEVEL1<v )
{
myservo.write(0);
lcd.setCursor(0,0);
lcd.print("NO RAIN     ");
}
}
```

CHAPTER- 4

RESULT AND DISCUSSION

4.1 RESULT

Servo motor applications are also commonly seen in remote controlled toys cars for controlling direction of motor which moves the tray of a CD or DVD player. Today's cars are manual systems that work on the principle of manual switching. So here we propose an automatic wiper system that automatically switches ON detecting rain and stops when rain stops when rain stops. This project brings forward this system to automate the wiper system having no need for manual intervention. The motor IC now drives a servomotor to stimulate car wiper.

In the past automakers have tried to eliminate the wiper or to control automatically. Some of the schemes involved detecting vibration caused by individuals rain drops hitting the wind shield applying special coating that did not allow the drops to form, or even ultrasonically vibrating the wind shield to break up the droplet so they do not need to be wiped at all. But these systems were plagued by problems and either never made it to production or quickly accessed because they annoyed more drivers than they pleased.

CHAPTER 5

CONCLUSION

5.1 CONCLUSION

The aim of thesis is to provide simple guidelines to the new students and beginners who are interested in this type of project. This project makes the new students familiar with the floduino. The working mechanism of it and future aspects of it in a simple and understandable way, although the thesis project is very little about the motor's use in the real world, with the help of guidelines and the abundance of resources the outcome, it could be very beneficial for many people and different sectors of the world depending on the sensors and features required as per necessity. During this period, we learned about floduino, ultrasonic sensor, motor drive, servo motors and how to program them using floduino. This project gives idea to the new students on different criteria of understanding, knowledge skill.

5.2 ADVANTAGES

1. A low cost and easily maintainable system are grouped together.
2. Windshield wipers have a definition life cycle.
3. Depending on frequency of use this can be as much an annual need for changes.
4. Windshield wipers are reading available in most stores and have a few common locking mechanisms that are robust and easy to use.
5. The need to changes wipers also cost down.

5.2 DISADVANTAGES

1. If the windshield wipers are not functioning properly then if creates a dangerous driving condition.
2. If is necessary to have a system that which users can maintain themselves**.**

REFERENCES

[1]. Abhishek Das, Aditya Desai Vivek Dhuri "Rain Sensing Automatic Car Wiper Using AT89C51 Microcontroller" Jan 2021.

[2]. Shivani Yadav, Anshika Rai, Deepika Gupta Sonam Kushwaha, Dharmesh Kumar "Automatic Rain Sensing Wiper using Arduino," International Journal for Research in Applied Science & Engineering Technology (IJRASET), Volume 9, Issue 6, June 2021.

[3]. Ayush Kalra, Sudhanshu Srivastava, Shivam Pratap Singh, Prof. Sagar G. Mohite "Automatic rain sensing wiper," International Journal of Creative Research Thoughts (IJCRT), Vol 8, Issue 5, May 2020.

[4]. Evangili Supriya, Raghavendra Rao Kanchi "Real time rain sensing and wind shield wiper control system with cloud computing and geotagging application," International Journal of Information Technology (IJIT), Vol. 12, Issue 1, May 2020.

[5]. Moni Sree H, Dharshana N, Dheetchithaa S, Archana A "Rain sensing automatic car wiper using IC 555 timer," International Journal Technical Research and Science (IJTRS), Vol 5, Issue 8, Aug 2020.

[6]. Andreas Riener, Sinan Hasirlioglu,Fabio Reway,Tim Klingenberg, "Raindrops on the Windshield: Performance Assessment of Camera-based Object Detection," International Conference on Vehicular Electronics and Safety (IEEE), 2019.

[7]. Kumar Anushmali, Saswati Bhattacharya "Automatic Rain Sensing Vehicle Wiper," International Journal of Advanced Research in Computer Science & Technology (IJARCST), Volume 7, Issue 2, June 2019.

[8]. Praveen Kiran Mali, Devendra Odal Rapelli, Revan B. Kakade, Sagar S. Chavan, “Design and development of automatic rain operated system using synthesis of mechanism,” International Journal of Advanced Research (IJAR), Volume 4, Issue 1, 2016.

[9]. Sakshi karande, Vaishnavi Shrikhande, Renuka Joshi, Prof. Halcherikar R.R. “Rain Sensing Automatic Car Wiper System,” (IJARIIE), Vol-5, Issue-2, 2019.

[9]. Sourish Mitra, Soham Biswas, Mrinmoy Aus “Arduino based Bluetooth operated car wiping technique using android mobile phone,” International Research Journal of Engineering and Technology (IRJET), Volume 04 Issue 12, 2017

[12]. Bhagyashri U. Wani, Sunita P. Ugale “CAN based Automatic Fog Light and Wiper Controller for Vehicle,” International Journal of Computer Applications (IJCA), Volume 150, Issue 4, September 2016.

[13]. Jee-Hun Park, Man ho Kim, Hong-Jun Im, Kyung-Chang Lee “Development of Vision Based Control Smart Windshield Wiper System for Intelligent Vehicle,” **“**International Conference on Vehicular Electronics and Safety (ICVES),” 2016.

[14]. P.K. Othcere, D. K. Owusu, A.A. Otchere, “Design and implementation of of automatic rain sensing car wiper,” International Journal of Emerging Technology and Innovative Engineering (IJETIE), Volume 2, Issue 11, 2016.

[15]. S.P. Patil, Suraj J. Patange, Akshay R Mahajan, Balaji V. Shinde “Rain and dust sensing automatic car wiper and secure access system,” International Journal of Informative and Futuristic Research (IJIFT), Volume 3, Issue 7, March 2016.

[16]. K. V. Viswanadh, Siva Sankara Babu, J. Leela Krishna, A. Lala Bahadur “Design and fabrication of rain operated wiper mechanism using conductive sensor circuit,” International Journal Of Engineering Research & Technology (IJERT), Volume 4 Issue 01, January-2015.

[17]. Lubna Alazzawi, Avik Chakravarty “Design and Implementation of a reconfigurable automatic rain sensitive windshield wiper” International Journal of Advances in Engineering & Technology (IJAET), Vol. 8, Issue 2, pp. 73-82, 2015.

[18] P. Naresh, A.V. Hari Babu “Automatic Rain-Sensing Wiper System for 4-Wheeler Vehicles,” Journal of advancement in Engineering technology (2015)

[19]. Prajapati Vijay, Bhavin Khatri “Rain Operated Automatic Wiper in Automobile Vehicle,” International Journal of Engineering Innovation and Scientific Research (IJEISR), Vol.1 Issue 1(P.P-36-39), 2015.

[20]. Mukul J., Kautubh J., Dr. D.N. Sonawane, Vinayak S., M.A. Joshi, “A novel and cost-effective resistive rain sensor for automatic wiper control: circuit modelling and implementation”, Seventh international conference on sensing technology (ICST), pp. 40-45, 2013.

[21]. M. Jarajreh, A.L. Nortcliffe, R. Green, “Fuzzy logic and equivalent circuit approach to rain measurement”, Electronic letters, vol. 40, no. 24, pp. 1533 – 1534, 2004.

[22]. Kyoo N.C., “Omni-directional rain sensor utilizing scattered light reflection by water particle on automotive windshield glass”, IEEE sensors, pp. 1728-1731, 1811.

[23]. P. Abhilash Reddy, P J Surya Sankar Reddy, G. Sai Prudhvi, Dr. S. S. Subashka Ramesh “Automatic rain sensing car wiper,” International

Journal of Advance Research, Ideas, and Innovations in Technology (IJARIIT), Vol. 4, Issue 5,2018.

[24]. Anil G. Bansode, S.O.Rajankar, M.G.Ghatule, “Design and development of smart automatic windshield wiper system: fuzzy logic approach” International Journal of Engineering and Science (IJES), Vol. 1, Issue 1 (Aug2012), PP 14-20.

[25]. Essaml Esmail, Anahed H. Juber, Haider A. Hussap, “Reconfigurable four-bar linkages for mechanism design laboratory,” International Journal of Mechanical Engineering and Technology (IJMET), Volume 9, Issue 12, PP.897-907, December 2018.

St. Mary's College (Autonomous) – Thoothukudi
Internal Quality Assurance Cell (IQAC)
Collaborative Activities 2022 – 2023
Academic & Research

Publication Period: January to December **Academic Activities Period: June to July**

1	**Name of the Faculty with Designation, Staff ID**	Dr.B.Serena Margaret ENGR008
2	**Name of the Collaborating Faculty with Designation**	Principal Holy Cross College (Autonomous), Nagercoil
3	**Name of the Collaborating Organisation**	Holy Cross College (Autonomous), Nagercoil
4	**Nature of Collaboration** (Academic / Research / Faculty Exchange / BOS/ Examiner / Student Exchange / Project / Internship / On-the Job Training)	Academic – External Expert - External Academic Audit on 04.05.2023
5	**Nature / Details of Outcome** [Guest Lecture / DC member / Guide / Co-guide / Project Reports / Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Others]	Evaluation of Academic activities of the institution
6	**Financial Involvement (if any)**	Yes
7	**Proof Attached**	Yes

B.Serena Margaret

Signature of Faculty

Signature of the Collaborating Faculty

B.Serena Margaret

Signature of IQAC Coordinator

IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Lucia Rose

Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

Internal Quality Assurance Cell (IQAC)
Holy Cross College (Autonomous)

Affiliated to Manonmaniam Sundaranar University
Accredited with 'A+' Grade (CGPA- 3.35) by NAAC (IV Cycle)
Nagercoil - 629004, Tamil Nadu, India
E-mail: iqac@holycrossngl.edu.in

Date: 20.04.2023

Academic Audit Schedule - 2022-2023

As per UGC Guidelines 2018 & recommendation of NAAC the External Academic Audit is to be conducted on 04-05-2023. The External Academic Audit Committee members are:

Dr. A. Lourdu Samy, Associate Professor of Mathematics, St. Xavier's College (Autonomous), Palayamkottai.

Dr. A. Rose Venis, IQAC Co-ordinator, St. Joseph's College (Autonomous), Tiruchirapplli.

Dr. B. Serena Margaret, IQAC Co-ordinator, St. Mary's College (Autonomous), Tuticorin.

Schedule:

1. Department files verification
2. Presentation of Action Plan for the next Academic Year – Departments and Clubs andCommittees
3. Exit Meet

You are cordially invited to be a resource person for the Academic Audit on 04-05-2023

IQAC Director

IQAC Co-ordinator
Holy Cross College (Autonomous)
Nagercoil - 629 004

Principal

PRINCIPAL
Holy Cross College
(Autonomous)
Nagercoil - 629 004.

St. Mary's College (Autonomous),Thoothukudi

Reaccredited with A+ Grade by NAAC (4th Cycle)

Internal Quality Assurance Cell (IQAC)

Collaborative Activities 2021-2022

Academic & Research

Publication Period:January to December Academic Activities Period: June to July

1	**Name of the Faculty with Designation, Staff ID**	Dr.B.Geetha Maheswari Assistant Professor of Commerce(SSC) St.Mary's College(Autonomous), Thoothukudi. COMS006
2	**Name of the Collaborating Faculty with Designation**	Principal Holy Cross Home Science College Thoothukudi
3	**Name of the Collaborating Organisation**	Holy Cross Home Science College Thoothukudi
4	**Nature of Collaboration** (Academic/Research/Faculty Exchange/BOS/Examiner/Student Exchange/Project/Internship/On-the Job Training)	Guest Lecture in the Seminar on 19.10.2022
5	**Nature/ Details of Outcome** [Guest Lecture/DC member/Guide/Co-Guide/Project Reports/Publications (Research Papers)/Sharing of Research Resources(Lab Library/Industry)/Others]	"Revolution of Digital Banking"
6	**Financial Involvement** (if any)	-
7	**Proof Attached**	Yes

Dr. Sr. M.S. Rubha
PRINCIPAL
HOLY CROSS HOME SCIENCE COLLEGE
52, NEW COLONY,
THOOTHUKUDI - 628 002.

B. Serena Margaret

Signature of the Faculty | **Signature of the Collaborating Faculty** | **Signature of the IQAC Coordinator**

Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

IQAC, SMC 2021-2022

HOLY CROSS HOME SCIENCE COLLEGE

(Re-Accredited with "B" Grade by NAAC)

52, New Colony, THOOTHUKUDI - 628 003.

Phone : 0461 - 2328295, Fax : 0461 - 2328294

Website : www.hchsc.com E-mail : hchomesciencecollege@gmail.com

19.10.2022

To

Dr. B.Geetha Maheshwari,

Assistant Professor of Commerce (SSC).

St.Mary's College(Autonomous),

Thoothukudi

Sub: Letter of Appreciation-Guest Speaker

Dear Dr. B.Geetha Maheshwari,

Greetings from Holy Cross Home Science College

Thank you very much for serving as the resource person for the Guest Lecture on Revolution of Digital Banking and delivering an informative and thought provoking lecture held on 19th October, 2022 in the PG & Research Department of Commerce, Holy Cross Home Science College, Thoothukudi.

It was really a splendid presentation which exposed students to the field practices of digital banking. All the students appreciated and got benefitted from your views on the subject.

Looking forward for your co-operation in future as well.

Yours Sincerely

Rubha

Dr. Sr. M.S. Rubha

PRINCIPAL

HOLY CROSS HOME SCIENCE COLLEGE

52, NEW COLONY,

THOOTHUKUDI - 628 003.

St. Mary's College (Autonomous) – Thoothukudi

Internal Quality Assurance Cell (IQAC)

Collaborative Activities 2022 - 2023

Academic & Research

Publication Period: January to December **Academic Activities Period: June to July**

1	**Name of the Faculty with Designation, Staff ID**	Dr. S. Gayathri, Assistant Professor & Head, Department of Business Administration, Staff Code: BBAS005 14th March, 2023
2	**Name of the Collaborating Faculty with Designation**	Dr. T. Sangeetha Sutha EDII Spoke Coordinator
3	**Name of the Collaborating Organisation**	Holy cross Home science college, Tirunelveli
4	**Nature of Collaboration (Academic / Research / Faculty Exchange / Examiner / Student Exchange / Project / Internship / On-the Job Training)**	Academic
5	**Nature / Details of Outcome [Guest Lecture / DC member / Guide / Co-guide / Project Reports / Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Other**	Guest Lecture
6	**Financial Involvement (if any)**	No
7	**Proof Attached**	Yes

Signature of Faculty

Signature of the Collaborating Faculty

B.Serena Margaret

Signature of IQAC Coordinator

IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Lucia Rose

Principal

St. Mary's College (Autonomous)
Thoothukudi-628 001.

HOLY CROSS HOME SCIENCE COLLEGE

Affiliated to Manonmaniam Sundaranar University - Tirunelveli

(Re-Accredited with 'B' Grade by NAAC)

Thoothukudi

EDII-TN Entrepreneurship DEVELOPMENT AND INNOVATION INSTITUTE GOVERNMENT OF TAMIL NADU

Entrepreneurship Developement Cell

organises

CULTURAL AND TRADITIONAL ARTS

14th March 2023

2 pm Seminar Hall

CONVENOR

Rev. Sr. Dr. M.S. Rubha

Principal & Secretary

ORGANISING SECRETARIES

Dr. T. Sangeetha Sudha

EDII Spoke Coordinator

Mrs. M. Deena

Co-Spoke Coordinator

Assistant Professors,

PG & Research Department of Commerce

CHIEF GUEST

Ms. S. GAYATHRI

Entrepreneurship Educator

Head & Assistant Professor

Department of Business Administration

St. Mary's College(Autonomous), Thoothukud

With the special blessings from

Dr. G. Magesh Kuttalam,
EDII- HUB Coordinator,
Department of Management Studies,
Manonmaniam Sundaranar University

Dr. ST. Suvantharan,
EDII-FIELD Coordinator,
Department of Management Studies,
Manonmaniam Sundaranar University

St. Mary's College (Autonomous)

Re-accredited
with A + Grade by NAAC (4th Cycle)
Thoothukudi, Tamil Nadu

Department of English (SSC)

in Collaboration with

Million Hopes Academy

offers

A Certificate Course on

English Proficiency

For Competitive Exams

For the Academic Year

2022 - 2023

Course Code: 22CSEN51 **Duration: 30 Hours**

St. Mary's College (Autonomous), Thoothukudi

Department of English (SSC)

Certificate Course on English Proficiency for Competitive Exams

Aim

The course aims to help the students to develop their English language skills, particularly those planning to appear for competitive exams

Objective

- To encourage students for placement through better understanding of thelanguage
- To develop students ability to use English in day-to-day life and real lifesituation

Course Outcome

Upon the completion of the course, the students will be able to

- Analyze the rhetoric and aesthetic effects in the use of language in various literaryforms.
  - ♦ Read with interpretive and analytical proficiency
  - ♦ Enlarge their vocabulary by learning new words
  - ♦ Develop their ability as critical readers
  - ♦ Increase confidence in their ability to read, comprehend and interpret the passages
  - ♦ Understand the vocabulary, syntax, structure, style in the language
  - ♦ Develop English language skills for competitive exams
  - ♦ Facilitate the aspects of grammar, writing and vocabulary

Learning Approach

- ♦ Logical Reasoning
- ♦ Intensive Reading Exercises
- ♦ Discussion
- ♦ Practical Comprehensive Sessions
- ♦ Role plays

Take away of the Course

- ♦ Students get employed in different fields as trainers, teachers and editors inpublic relations
- ♦ Soft copy of the PPT and PDF will be shared with the students
- ♦ Worksheets and evaluation sheets used in the training are given to thestudents.

St. Mary's College (Autonomous), Thoothukudi

Department of English (SSC)

Certificate Course on English Proficiency for Competitive Exams

Course Code: 22CSEN51

Duration: 30 Hours

Unit I

Reading Comprehension

Literature and Reading Comprehension

Scientific passages and Reading Comprehension

Unit II

Vocabulary Enrichment

Uncommon words

Synonyms, Antonyms, Homonyms

Unit III

Spotting Errors

Unit IV

Verbal Reasoning

Verbal Analogy

Cause & Effect

Unit V

Test Techniques

St. Mary's College (Autonomous) Thoothukudi
Department of English (SSC)
III B.A. English Literature

Course Schedule

Course Title: English Proficiency for Competitive Exams
Course Instructor: Ms.S.Jebarathinam Nancy Juliet
Course In charge: Ms. A.Priyanka
Department: III BA English Literature (2022- 2023)
Time: 2.00-4.00 pm

S.No	Date
1	01.08.2022
2	02.08.2022
3	08.08.2022
4	10.08.2022
5	29.08.2022
6	05.09.2022
7	06.09.2022
8	07.09.2022
9	12.09.2022
10	13.09.2022
11	14.09.2022
12	16.09.2022
13	27.09.2022
14	28.09.2022
15	29.09.2022

Course Title: Proficiency for Competitive Exams

Course Instructor: Ms. S Jebarathinam Nancy Juliet

Course Incharge: Ms A Priyanka

ST. MARY'S COLLEGE

REGISTER OF ATTENDANCE

(Autonomous) THOOTHUKUDI - 628 001.

FOR THE MONTH OF _____ 2022 - 2023

S. No.	Name of Pupils	1 1/8	2 2/8	3 3/8	4 4/8	5 5/8	6 6/8	7 6/8	8 7/8	9 8/8	10 12/8	11 13/8	12 15/8	13 21/8	14 22/8	15 23/8	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1.	Abisha. A	x	x	x	x	x	x	a	x	x	x	a	x	x	x	x															
2.	Afrin Asha. A	x	x	x	x	a	x	x	x	x	a	x	x	x	x	x															
3.	Anima Bage. V	x	x	x	x	x	x	a	x	x	x	x	a	x	x	x															
4.	Antony Abisha. Y	x	x	x	x	a	x	x	x	x	x	a	x	x	x	x															
5.	Antony Ashila Fernando. A	x	a	x	a	x	x	x	x	x	x	x	x	x	x	x															
6	Arockia Jessy Sephin. S	x	x	x	x	x	x	x	x	a	x	x	x	x	x	x															
7.	Aruna@ Sangeetha. M	x	x	x	x	x	a	x	x	x	x	x	x	x	x	x															
8	Asmi. A	x	x	x	x	x	x	x	x	x	a	x	x	x	x	x															
9.	Bavani. T	x	x	x	x	x	x	x	a	x	x	x	a	x	x	x															
10	Bharanilakshmi. K	x	x	a	x	x	x	x	x	x	x	x	x	x	x	x															
11.	Christy. K	x	x	x	a	x	x	x	x	x	x	x	x	x	x	x															
12.	Devaranjani. M	x	x	x	a	x	x	x	x	x	x	x	x	x	x	x															
13	Helan Mary. S	x	x	x	x	x	x	x	x	x	x	a	x	x	x	x															
14.	Hema. M	x	x	x	x	x	x	a	x	x	x	x	x	x	x	x															
15.	Iswarya S	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x															
16.	Janies. C	x	x	x	x	x	x	x	x	a	x	x	x	x	x	x															
17.	Jesu Juhisha. J	x	x	x	x	x	x	x	x	x	a	x	x	x	x	x															
18.	Karputha Selvi. K	x	x	x	x	a	x	x	x	x	x	a	x	x	x	x															
19.	Madhumitha. R	x	x	x	x	x	x	x	x	a	x	a	x	x	x	x															
20	Mana Virishma. T	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x															
21.	Misha Anne Roselin. C	x	x	x	a	x	x	x	x	x	a	x	x	x	x	x															
22	Muthumalai. M	x	x	x	x	x	x	a	x	x	x	x	a	x	x	x															
23.	Nyils Jerney. J	x	x	x	x	x	x	x	x	x	a	x	x	x	x	x															
24.	Priya Dharshini. M	x	x	a	x	x	x	x	x	x	x	x	x	x	x	x															
25	Raja Pushpa. P	x	x	x	x	x	x	x	x	x	x	a	x	x	x	x															
26.	Roselin Chellammal. J	x	x	x	x	x	x	a	x	x	x	x	x	x	x	x															
27	Santhanamari. M	x	x	x	x	x	a	x	x	x	x	x	x	x	a	x															
28	Serina. K	x	x	x	x	x	x	x	x	x	a	x	x	x	x	x															
29.	Shalini. P	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x															
30.	Sharan Jeya Shekina. T	x	x	x	x	x	a	x	x	x	x	x	x	x	a	x															
31.	Shiyamini. P	x	x	a	x	x	x	x	x	x	x	x	x	x	a	x															
32	Snowshini. M	x	x	x	a	a	x	x	x	x	x	x	x	a	x	x															
33	Subiksha. V	x	a	x	x	x	x	x	x	x	a	x	x	x	x	x															
34	Suganya. T.	x	x	x	x	x	x	x	x	x	x	x	x	a	x	x															
35	Valari Nazrin. S	x	x	x	x	x	x	a	a	x	x	x	x	x	x	x															
36	Vijaya Bala Priyaa. S	x	x	x	a	a	x	x	x	x	x	x	x	x	a	x															
37.	Vinolia. L	x	x	x	x	x	x	x	x	x	x	x	a	a	x	x															
38	Yasmin Fathima. S	x	x	a	x	x	x	x	x	x	x	x	x	x	x	x															
39.	Yuvalakshmi. A	x	x	x	x	x	x	a	a	x	x	x	x	x	a	x															

Course Title: English Proficiency for Competitive Exams
Course Instructor: Ms.S.Jebarathinam Nancy Juliet
Course Incharge: Ms.A.Priyanka
Department: III BA English Literature (2022-2023)

S.No.	Name	Reg No.	Marks Obtained	Grade
1	ABISHA A	20SUEN01	10	A
2	AFRIN ASHA A	20SUEN02	08	A
3	ANIMA BAGE V	20SUEN03	13	A
4	ANTONY ABISHA Y	20SUEN04	18	A+
5	ANTONY ASHILA FERNANDO A	20SUEN05	13	A
6	AROCKIA JESSY SEPHIN S	20SUEN06	16	A
7	ARUNA@SANGEETHA M	20SUEN07	09	B
8	ASMI A	20SUEN08	13	A
9	BAVANI T	20SUEN10	16	A
10	BHARANILAKSHMI K	20SUEN11	13	A
11	CHRISTY K	20SUEN12	15	A
12	DEVARANJANI M	20SUEN13	09	B
13	HELAN MARY S	20SUEN15	15	A
14	HEMA M	20SUEN16	15	A
15	ISWARYA S	20SUEN18	13	A
16	JANIES C	20SUEN19	08	B
17	JESU JULISHA J	20SUEN21	17	A
18	KARPUTHA SELVI K	20SUEN22	17	A
19	MADHUMITHA R	20SUEN24	09	A
20	MARIA VIRISHMA T	20SUEN26	12	A
21	MISHA ANNE ROSELINE C	20SUEN27	12	A
22	MUTHUMALAI M	20SUEN29	15	A
23	NYILS JERNEY J	20SUEN31	19	A+
24	PRIYA DHARSHINI M	20SUEN32	16	A

S.No.	Name	Reg No.	Marks Obtained	Grade
25	RAJAPUSHPA P	20SUEN34	**16**	**A**
26	ROSELIN CHELLAMMAL J	20SUEN36	04	A
27	SANTHANAMARI M	20SUEN37	08	B
28	SERINA K	20SUEN38	18	A+
29	SHALINI P	20SUEN39	15	A
30	SHARAN JEYA SHEKINA T	20SUEN40	16	A+
31	SHIYAMINI P	20SUEN41	17	A
32	SNOWSHINI M	20SUEN42	12	A
33	SUBIKSHA V	20SUEN43	16	A
34	SUGANYA T	20SUEN44	09	B
35	VALAN NAZRIN S	20SUEN45	07	A
36	VIJAYA BALA PRIYAA S	20SUEN46	17	A+
37	VINOLIA L	20SUEN47	12	A
38	YASMIN FATHIMA S	20SUEN49	10	A
39	YUVALAKSHMI A	20SUEN50	09	A

Report of the Certificate Course 2022-2023

Department of English (SSC)

III B.A. English Literature

English Proficiency for Competitive Exams

The English Proficiency for Competitive Exams helps the student to enhancetheir knowledge and skills relevant to their field of studies and it also helps in implementation of their career. The course is scheduled for thirty hours. The syllabus is divided in to five units.

The class commenced on 01 August 2022, there were a total of 39 students from III B.A.English Literature who participated in this programme. The final class was on 29 September 2022.

The class was conducted on working days in the afternoon for two hours. During the classes the instructor (Ms.S.Jebarathinam Nancy Juliet) created awareness to the students about the various career opportunities . The students took part in various activities and they also shared their opinions and discussions were made on their queries.

Various assessments were conducted based upon their syllabus to test the knowledge gained by the students. The students performed well in the exams and certificates were issued according to their Grade levels and percentage oftheir attendance. At the end of the course, we received a positive feedback from the students.

ST. MARY'S COLLEGE (AUTONOMOUS), THOOTHUKUDI
(Re-accredited with 'A+' Grade by NAAC)

CERTIFICATE

This is to certify that

Ms. Y. Antony Abisha – 20SUEN04

III B.A English (SSC)

has successfully completed the Certificate Course on

ENGLISH PROFICIENCY FOR COMPETITIVE EXAMS

conducted during the academic year 2022 - 2023 with A+ Grade.

Instructor

Principal

St. Mary's College (Autonomous) – Thoothukudi

Internal Quality Assurance Cell (IQAC)

Collaborative Activities 2021- 2022

Academic & Research

Publication Period: January to December **Academic Activities Period: June to July**

1	**Name of the Faculty with Designation, Staff ID**	C.Nayanthra Mascarenhas Assistant Professor,CPSS003
2	**Name of the Collaborating Faculty with Designation**	ICT Academy Relationship Manager
3	**Name of the Collaborating Organisation**	ICT Academy
4	**Nature of Collaboration** (Academic / Research / Faculty Exchange / BOS/ Examiner / Student Exchange / Project / Internship / On-the Job Training)	MOU Academic
5	**Nature / Details of Outcome** [Guest Lecture / DC member / Guide / Co-guide / Project Reports /Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Others]	Faculty Development Programme
6	**Financial Involvement (if any)**	No
7	**Proof Attached**	Yes

Signature of Faculty

Signature of the Collaborating Faculty

B. Serena Margaret

Signature of IQAC Coordinator

IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

ICTACADEMY®

CERTIFICATE OF PARTICIPATION

C.No: 022-201063

Date: 07 Mar 2022

NAYANTHRA MASCARENHAS

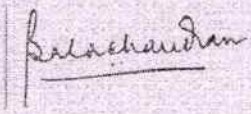
St. Mary's College(Autonomous),Thoothukudi

has participated in 18 Hours of Faculty Development Program on

Microsoft Azure AI Fundamentals (Online FDP)

conducted by ICT Academy on 28 Feb 2022 to 07 Mar 2022

Hari Balachandran
Chief Executive Officer, ICT Academy



ICTACADEMY

CERTIFICATE OF PARTICIPATION

C.No: 022-202861

Date: 30 Jun 2022

NAYANTHRA MASCARENHAS C

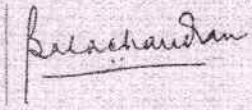
St. Mary's College(Autonomous),Thoothukudi

has participated in 9 Hours of Faculty Development Program on

Microsoft Power BI Data analyst Associate (Online FDP)

conducted by ICT Academy on 28 Jun 2022 to 30 Jun 2022

Hari Balachandran
Chief Executive Officer, ICT Academy



ICTACADEMY®

CERTIFICATE OF PARTICIPATION

C.No: 022-204605

Date: 19 Nov 2022

J. ANILA MAILY

St. Mary's College(Autonomous),Thoothukudi

has participated in 3 Day Faculty Development Program on

Presentation Skills in a Class Room

conducted by ICT Academy on 17 Nov 2022 to 19 Nov 2022 at

St. Mary's College(Autonomous),Thoothukudi

ICT ACADEMY FACULTY DEVELOPMENT PROGRAM

Hari Balachandran
Chief Executive Officer, ICT Academy

ICTACADEMY®

CERTIFICATE OF PARTICIPATION

C.No: 022-202211

Date: 10 Jun 2022

J. ANILA MAILY

St. Mary's College(Autonomous),Thoothukudi

has participated in 12 Hours of Faculty Development Program on

Introduction to Python Programming (Online Live FDP)

conducted by ICT Academy on 06 Jun 2022 to 10 Jun 2022

ICT ACADEMY FACULTY DEVELOPMENT PROGRAM

Hari Balachandran
Chief Executive Officer, ICT Academy

ST. MARY'S COLLEGE (AUTONOMOUS),Thoothukudi

DEPARTMENT OF COMPUTER SCIENCE

IPR Programme on

"How to Plan for Start-up and Legal & Ethical Steps"

Academic year	**: 2022-2023**
Number of Student participants	**: 135**
Number of Faculty participants	**: 8**
Number of External participants	**: 5**
Expenditure amount	**: NIL**
Mode of session delivery	**: Online**

Objective:

To inspire the students to achieve their goals and carry out a tech start-up business plan

Title	**: How to Plan for Start-up and Legal & Ethical Steps**
Date	**: 02-09-2022**
Resource person	**: Mr. K. Arul** **Head, Logistics & Supply Chain** **E-Crusaders, Chennai**

Benefits:

- The students had the opportunity to put their knowledge into practice and create original works.
- The students were able to comprehend how to launch a firm using their own concepts.

Attachments:

Video link:https://www.youtube.com/watch?v=R-d9ojUlY6k

The Department of Computer Science (UG & PG) and the Institution's Innovation Council of St.Mary's College (Autonomous) & ICT Academy jointly organized a webinar on "How to Plan for Start-up and Legal & Ethical Steps" on 02-09-2022 at 10.00 am through Zoom platform. Mr. K. Arul, Head, Logistics & Supply Chain, E-Crusaders, Chennai has delivered the speech. The meeting starts with a prayer song and followed by the welcome address. The speaker gave a great insight on how to pursue one's goals. The session was quite informative and interactive, and the students received numerous ideas that got them thinking.He inspired the students to turn their ideas into successful businesses.Nearly, 8 staff members and about 135 students from our college and 5 research scholars from other institutions have

took part in the webinar, which provided them with creative ideas and thoughts on being an entrepreneur. Finally, the feedback session was held, followed by the vote of thanks. The meeting came to an end with college anthem.

INSTITUTION'S INNOVATION COUNCIL (Ministry of HRD Initiative)

ICTACADEMY

St. Mary's College (Autonomous)

Thoothukudi, Tamil Nadu, India
(Re-accredited with 'A+' Grade by NAAC)

INSTITUTION'S INNOVATION COUNCIL
& ICT ACADEMY &
DEPARTMENT OF COMPUTER SCIENCE (UG & PG)

Jointly Organize a

Webinar
on

How to Plan for Start-up and Legal & Ethical Steps

Resource Person

K. Arul
Head, Logistics & Supply Chain
E-Crusaders
Chennai

Date:
02-09-2022

Time:
10:00 am

Meeting Link: Click Here

Passcode: cs@smc

BEST WISHES FROM

Rev. Dr. Sr. C. Shibana
Secretary & IIC Vice President

Rev. Dr. Sr. A. S. J. Lucia Rose
Principal & IIC President

Rev. Dr. Sr. S. Kulandai Therese
Deputy Principal

Rev. Sr. Josephine Jeyarani
Director, SSC

ORGANIZERS

Ms. A. Amora
IIC Convenor

Ms. S. Gnanathangam
Head, Dept. of Comp. Sci.

Ms. J. Anila Maily
IPR Coordinator

Ms. C. Nayanthra Mascarenhas
Coordinator, PG CS

Dr. A. Vithya Vijayalakshmi
IIC Member, PG CS

INSTITUTION'S INNOVATION COUNCIL (Ministry of HRD Initiative)

ICTACADEMY

St. Mary's College (Autonomous)

(Re-accredited with 'A+' grade by NAAC)
Thoothukudi, Tamil Nadu, India

Institution's Innovation Council
& ICT Academy &
Department of Computer Science (UG & PG)

E-Certificate of Participation

This is to Certify that M. Jothimani,

Associate Professor has participated in the webinar on

How to Plan for Start-up and Legal & Ethical Steps

Organised by Department of Computer Science (UG & PG),
St. Mary's College (Autonomous), Thoothukudi on 02-09-2022.

Ms. S. Gnanathangam **HOD**	Sr. Josephine Jeyarani **Director (SSC)**	Dr.Sr.A.S.J.Lucia Rose **Principal**
Ms.C.Nayanthra Mascarenhas **PG Coordinator**	Ms. J. Anila Maily **IPR Coordinator**	Ms. A. Amora **IIC Convenor**

S. Gnanathangam

"How to plan for Start-up and legal & Ethical Steps"

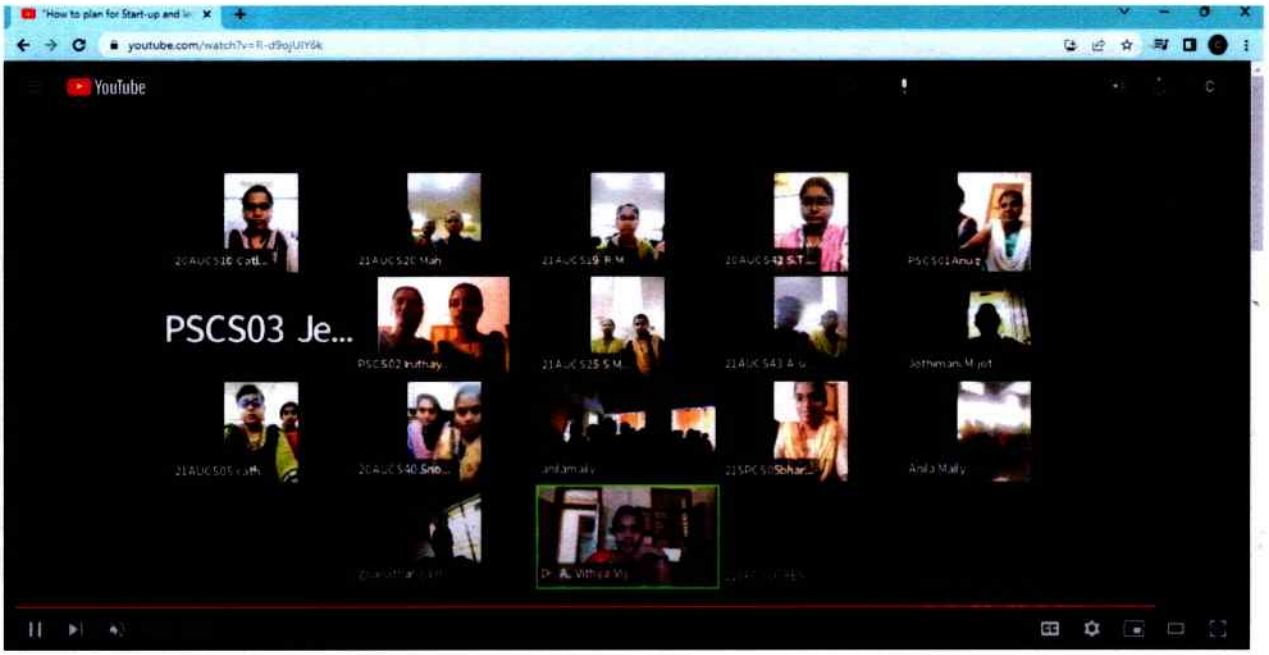
Unlisted

Live chat replay was turned off for this video.

Max Crypto
2.9K subscribers

Subscribed

0 Share Download ...



"How to plan for Start-up and legal & Ethical Steps"

Unlisted

Live chat replay was turned off for this video.

Max Crypto
2.9K subscribers

Subscribed

0 Share Download ...

B. Serena Margaret
IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Lucia Rose
Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

S. Gnanajothi
Head
Department of Computer Science
St. Mary's College (Autonomous)
Thoothukudi.

ICTACADEMY

CERTIFICATE OF PARTICIPATION

C.No: 021-197015

Date: 14 May 2021

REETHA K

St. Mary's College(Autonomous),Thoothukudi

has participated in 15 Hours of Faculty Development Program on

Fundamentals of AI & ML (Online LIVE FDP)

conducted by ICT Academy on 10 May 2021 to 14 May 2021

ICT ACADEMY FACULTY DEVELOPMENT PROGRAM

Dr B Anbuthambi
President, ICT Academy

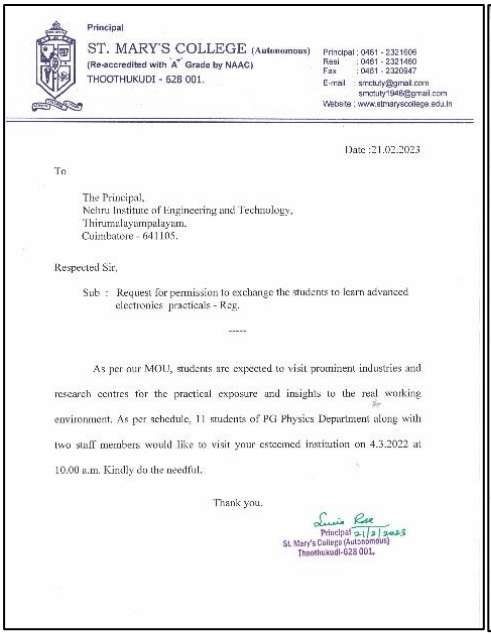
verify.ictacademy.in

St. Mary's College (Autonomous), Thoothukudi

Emerging trends in power electronics applications - 04-03-2023

MoU Activity

On 04-03-2023, "Emerging trends in power electronics applications" students exchange programme was jointly organized by Nehru Institute of Engineering and Technology, Coimbatore & PG Department of Physics. **Dr. Kannan, Head & Associate Professor, Department of Electrical and Electronics Engineering, Nehru Institute of Engineering and Technology, Coimbatore was the resource person**. Nearly 2 staff members and 11 students were the beneficiaries. Students visited the Power Electronics laboratory, Electric Circuit laboratory, NGI-TBI Technology Business Incubator and Electronics laboratory. Students were given hands on training on Electronics practical like differential amplifiers, high pass filter and working of 555 timer IC and Microprocessor and Microcontroller.



Principal

ST. MARY'S COLLEGE (Autonomous)
(Re-accredited with A+ Grade by NAAC)
THOOTHUKUDI - 628 001.

Principal : 0461 - 2321606
Resi : 0461 - 2321460
Fax : 0461 - 2320947
E-mail : smcluty@gmail.com
smcluty1946@gmail.com
Website : www.stmaryscollege.edu.in

Date :21.02.2023

To

The Principal,
Nehru Institute of Engineering and Technology,
Thirumalayampalayam,
Coimbatore - 641105.

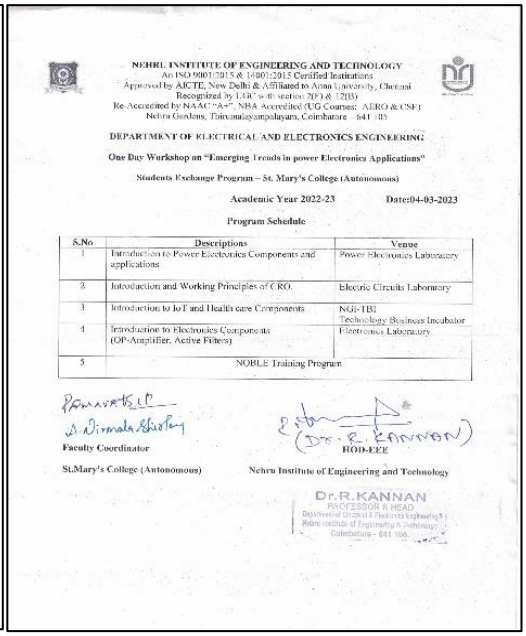
Respected Sir,

Sub : Request for permission to exchange the students to learn advanced electronics practicals - Reg.

As per our MOU, students are expected to visit prominent industries and research centres for the practical exposure and insights to the real working environment. As per schedule, 11 students of PG Physics Department along with two staff members would like to visit your esteemed institution on 4.3.2022 at 10.00 a.m. Kindly do the needful.

Thank you.

Principal 21/2/2023
St. Mary's College (Autonomous)
Thoothukudi-628 001.



NEHRU INSTITUTE OF ENGINEERING AND TECHNOLOGY
An ISO 9001:2015 & 14001:2015 Certified Institutions
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Recognized by UGC u/s 12(B) & 12(B)
Re-Accredited by NAAC "A+", NBA Accredited (UG Courses: AERO & CSE)
Nehru Gardens, Thirumalayampalayam, Coimbatore - 641 105

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

One Day Workshop on "Emerging Trends in power Electronics Applications"

Students Exchange Program – St. Mary's College (Autonomous)

Academic Year 2022-23 Date:04-03-2023

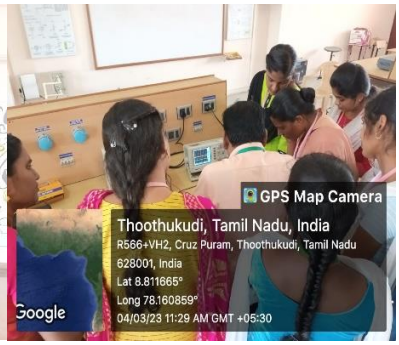
Program Schedule

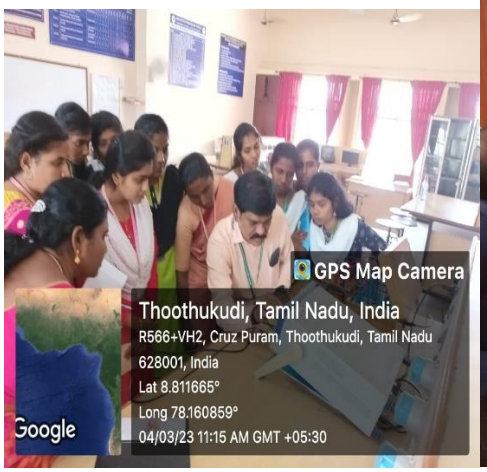
S.No	Descriptions	Venue
1	Introduction to Power Electronics Components and applications	Power Electronics Laboratory
2	Introduction and Working Principles of CRO.	Electric Circuits Laboratory
3	Introduction to IoT and Health care Components	NGI-TBI Technology Business Incubator
4	Introduction to Electronics Components (OP-Amplifier, Active Filters)	Electronics Laboratory
5	NOBLE Training Program	

Faculty Coordinator
St.Mary's College (Autonomous)

HOD-EEE
Nehru Institute of Engineering and Technology

Dr.R.KANNAN
PROFESSOR & HEAD





Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

Principal

ST. MARY'S COLLEGE (Autonomous)
(Re-accredited with 'A+' Grade by NAAC)
THOOTHUKUDI - 628 001.

Principal : 0461 - 2321606
Resi : 0461 - 2321460
Fax : 0461 - 2320947
E-mail : smctuty@gmail.com
smctuty1948@gmail.com
Website : www.stmaryscollege.edu.in

Date :21.02.2023

To

The Principal,
Nehru Institute of Engineering and Technology,
Thirumalayampalayam,
Coimbatore - 641105.

Respected Sir,

Sub : Request for permission to exchange the students to learn advanced electronics practicals - Reg.

As per our MOU, students are expected to visit prominent industries and research centres for the practical exposure and insights to the real working environment. As per schedule, 11 students of PG Physics Department along with two staff members would like to visit your esteemed institution on 4.3.2022 at 10.00 a.m. Kindly do the needful.

Thank you.

Lucia Rose
Principal 21/2/2023
St. Mary's College (Autonomous)
Thoothukudi-628 001.

NEHRU INSTITUTE OF ENGINEERING AND TECHNOLOGY
An ISO 9001:2015 & 14001:2015 Certified Institutions
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Recognized by UGC with section 2(F) & 12(B)
Re-Accredited by NAAC "A+", NBA Accredited (UG Courses: AERO & CSE)
Nehru Gardens, Thirumalayampalayam, Coimbatore – 641 105

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

One Day Workshop on "Emerging Trends in power Electronics Applications"

Students Exchange Program – St. Mary's College (Autonomous)

Academic Year 2022-23 **Date:04-03-2023**

Program Schedule

S.No	Descriptions	Venue
1	Introduction to Power Electronics Components and applications	Power Electronics Laboratory
2	Introduction and Working Principles of CRO.	Electric Circuits Laboratory
3	Introduction to IoT and Health care Components	NGI-TBI Technology Business Incubator
4	Introduction to Electronics Components (OP-Amplifier, Active Filters)	Electronics Laboratory
5	NOBLE Training Program	

Faculty Coordinator

St.Mary's College (Autonomous)

(Dr. R. KANNAN)
HOD-EEE

Nehru Institute of Engineering and Technology

Dr.R.KANNAN
PROFESSOR & HEAD
Department of Electrical & Electronics Engineering
Nehru Institute of Engineering & Technology
Coimbatore - 641 105.

Tamilnad Mercantile Bank

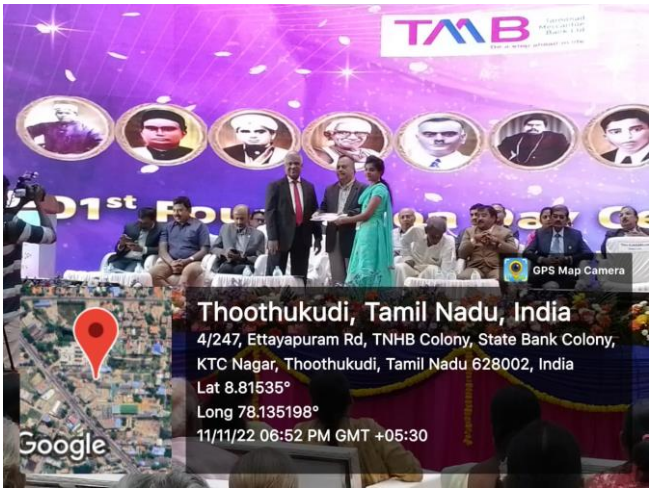
101st Foundation Day Competition

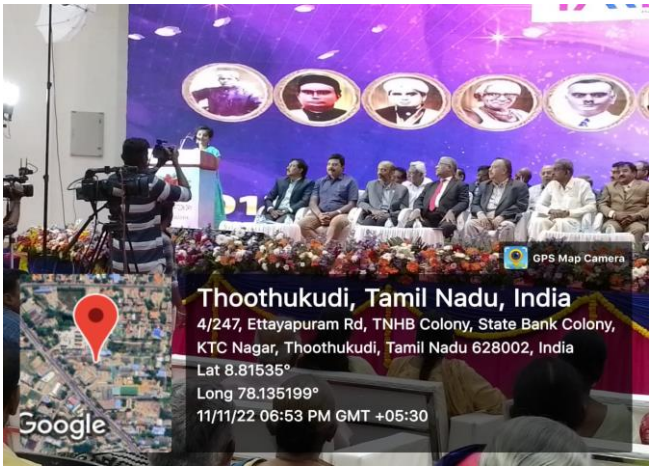
11.11.2022

Report: Achievement Recognition for Vesta Serapha

Recipient: Selvi F. Vesta Serapha
Institution: St. Mary's College

Award: Certificate of Appreciation
Occasion: 101st Foundation Day of Tamilnad Mercantile Bank Ltd (TMB)
Achievement: First Prize in the Elocution Competition
Date of Celebration: November 11, 2022
Location: Thoothukudi

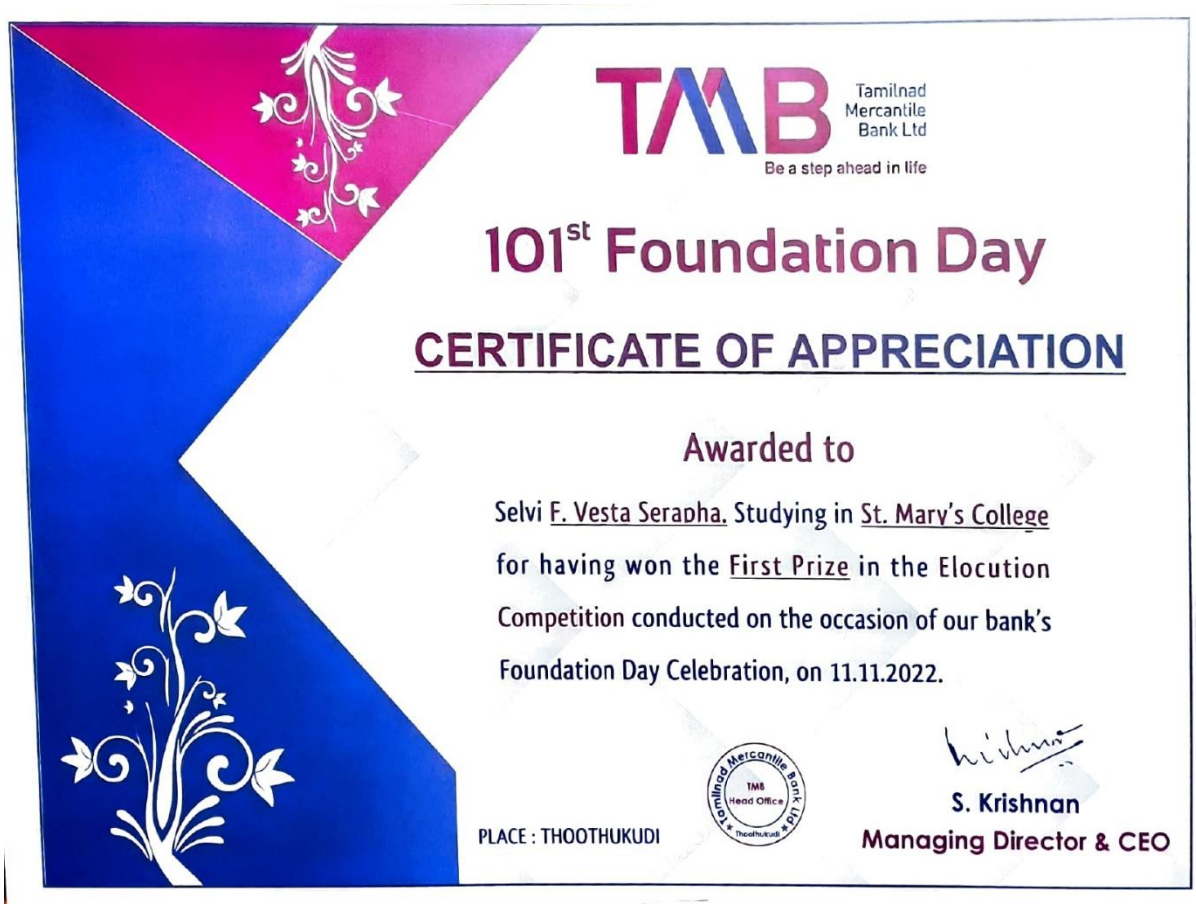




Report

Selvi F. Vesta Serapha of II MA English Literature has been recognized with a Certificate of Appreciation for her outstanding performance in the Elocution Competition with a cash prize of Rs. 5000. The award was presented during the celebration of the 101st Foundation Day of Tamilnad Mercantile Bank Ltd. The event took place in Thoothukudi on November 11, 2022, and was officiated by S. Krishnan, the Managing Director & CEO of the bank.

This accomplishment highlights Vesta Serapha's excellent communication and public speaking skills, as she secured the First Prize among participants.



A Social Initiative by

Implemented by

WOMEN EDUCATORS EMPOWERMENT PROGRAM

Certificate of Completion

THIS IS TO CERTIFY THAT

Anila Maily J

ST.MARY'S COLLEGE,TUTICORIN.

has successfully completed the **Certificate course on Digital Teaching Techniques** under **R Systems Women Educators Empowerment Program** held from 02 February 2023 to 17 February 2023.

C. No: G-2023-G2994-0067 | Date: 22 Feb 2023

Dr Satinder Singh Rekhi
CEO & MD
R Systems International Ltd.

Hari Balachandran
Chief Executive Officer
ICT Academy

PG AND RESEARCH DEPARTMENT OF COMMERCE

ST. MARY'S COLLEGE (AUTONOMOUS)

(Re – accredited with 'A+ ' Grade by NAAC)

THOOTHUKUDI-628001

2022 -2023

CAREER ORIENTED COURSE
ON
CHARTERED PUBLIC AUDITOR - Level 1

Duration: 30 hours	**Days:** 15
Session: 2p.m. – 4p.m.	**Mode:** Offline
Teaching Methodology: Hands on Training	

MoU Activity

Course Instructor: Advocate. Mr. Muthu Kumar Raja, Founder, The Institutes of Chartered Public Auditors, Thoothukudi

ST. MARY'S COLLEGE (AUTONOMOUS), THOOTHUKUDI

PG & Research Department of Commerce

CHARTERED PUBLIC AUDITOR –LEVEL 1 –III B.Com

2022-2023

Duration: 40 hours **Course Code: 22CACO51**

Aim

1. To understand the concept of public auditor.
2. To help the students to became a chartered public auditor.

Objectives

Learning Objectives	
1	To provide conceptual exposure to students on direct and indirect taxes
2	To understand the scope of auditing in key areas.
3	To make students understand the rules of IT and GST
4	To identify significant changes in various IT laws
5	To enable students to explore the knowledge of taxation

Course Outcome

CO. No	Upon completion of this course, students will be able to	Knowledge Level
1	remember and recall the direct and indirect tax applied for various types of business organization	K 1
2	Identify the key areas relating to IT, GST, EPF, ESI Laws	K 2
3	apply the rules of IT and GST in various forms of business organization	K 3
4	analyse various laws related to IT and GST	K 4
5	demonstrate the knowledge of taxation in preparing the return	K 5

CHARTERED PUBLIC AUDITOR – LEVEL 1

Objective:

To prepare the students to be self –employed.

Outcome of the Course:

To enrich the students to choose their career with confidence.

Part I – Introduction

Introduction to Professional Practice - Commerce Graduates as GST Practitioner - Commerce Graduate as Income Tax Practitioner

Part II - Income Tax Practice

Direct Taxes at a Glance - Basic Concept of Income Tax & Computation of Income under Various Heads - Income Tax Accounting Preparation for Proprietorship, OPC, LLP, Partnership Firm, Limited Companies, Trust, Society - Income Tax E filing System & Procedural Compliance PAN TDS TCS SAT Refund - Income Tax Assessment, Appeals & Revision - Income Tax Practitioner (ITP) Registration

Part III - Goods and Services Tax Practice

Basic of Goods and Services Tax (GST), Concept of Time, Value & Place of Taxable supply - Input Tax Credit & Computation of GST Liabilities - Procedural Compliance Under GST- Debit Note Credit note, E Way Bill, and Refund - GST E Filing GSTR 1, 2A,3B, 4, and 9 Forms ,(Monthly ,Quarterly and Annual Returns) - GST Account s Preparation, and GST Audit - GST (Registration Certificate) Registration & Goods and Services Tax Practitioner Registration

Part- IV - Business Organization / Constitution Formation System

One Person Company Formation - Partnership Firm Registration to Firm Registrar & Limited Liability Partnership Registration - Private Limited and Public Limited Company Registration- Trust, Society, Union Registration

Part V Labour Law Practice

Basic Concepts of Labour Laws - EPF, ESI Laws - EPF, ESI Registration & Monthly Returns- EPF, ESI Accounts, Audit and Appeals

Part VI Business Registration Department Wise Procedures

GST Registration - Micro, Small and Medium Enterprises Registration - Import and Export Code Registration- Foods Safety and Standard Authority of India Registration.

PG AND RESEARCH DEPARTMENT OF COMMERCE

III B.Com-Career Oriented Course

Chartered Public Accountant Course

S.No	Date	Cumulative Hrs
1.	10.08.2022	2 hrs
2.	12.08.2022	4 hrs
3.	02.09.2022	6 hrs
4.	05.09.2022	8hrs
5.	07.09.2022	10 hrs
6.	09.09.2022	12 hrs
7	12.09.2022	14 hrs
8.	14.09.2022	16 hrs
9.	16.09.2022	18 hrs
10.	28.09.2022	20 hrs
11.	07.10.2022	22 hrs
12.	10.10.2022	24 hrs
13.	12.10.2022	26 hrs
14.	17.10.2022	28 hrs
15.	19.10.2022	30 hrs

28/10/2022

Signature of the Course Incharge

Signature of the Class Incharge

Signature of the Head of the Department

2022 — 2023

ST. MARY'S COLLEGE (Autonomous) THOOTHUKUDI - 628 001.

REGISTER OF ATTENDANCE FOR THE MONTH OF ________ 202_ - 202_

No.	Name of Pupils	Attendance (days 1–15)
1	[illegible]	[illegible]
2	[illegible]	[illegible]
3	[illegible]	[illegible]
4	[illegible]	[illegible]
5	[illegible]	[illegible]
6	[illegible]	[illegible]
7	[illegible]	[illegible]
8	[illegible]	[illegible]
9	[illegible]	[illegible]
10	[illegible]	[illegible]
11	[illegible]	[illegible]
12	[illegible]	[illegible]
13	[illegible]	[illegible]
14	[illegible]	[illegible]
15	[illegible]	[illegible]
16	[illegible]	[illegible]
17	[illegible]	[illegible]
18	[illegible]	[illegible]
19	[illegible]	[illegible]
20	[illegible]	[illegible]
21	[illegible]	[illegible]
22	[illegible]	[illegible]
23	[illegible]	[illegible]
24	[illegible]	[illegible]
25	[illegible]	[illegible]
26	[illegible]	[illegible]
27	[illegible]	[illegible]
28	[illegible]	[illegible]
29	[illegible] Mary	[illegible]
30	[illegible]	[illegible]
31	[illegible]	[illegible]
32	Magdalene [illegible]	[illegible]
33	[illegible]	[illegible]
34	[illegible]	[illegible]
35	Maria [illegible]	[illegible]
36	Maria [illegible]	[illegible]
37	Maria [illegible]	[illegible]
38	[illegible] Rameesha	[illegible]
39	[illegible]	[illegible]
40	[illegible]	[illegible]
41	[illegible]	[illegible]
42	Muthu Rathi	[illegible]
43	Muthulakshmi P	[illegible]
44	[illegible]	[illegible]

2022 –

ST. MARY'S COLLEGE

REGISTER OF ATTENDANCE

S. No.	Name of Pupils	1	2	3	4	5	6	7	8	9	10
45.	Nithya Sri	x	x	x	x	x	x	x	x	x	x
46.	Oliviya Sharon	x	x	x	x	x	a	a	a	a	x
47.	Padma Sandhya	x	x	x	x	x	x	x	x	x	x
48.	Parkavi. V	x	x	x	x	x	x	x	x	x	
49.	Preethi. V	x	x	x	x	x	x	x	x	x	x
50.	Ramalakshmi	x	x	x	x	x	x	x	x	x	x
51.	Renuga Devi	x	a	a	a	a	a	a	x	x	a
52.	Rinisha. E	x	x	x	x	x	x	x	x	x	x
53.	Rishni	x	x	x	a	a	x	x	x	x	x
54.	Riya	x	x	x	x	x	x	x	x	x	x
55.	Sahaya Sheeria	x	x	a	x	x	x	x	x	x	x
56.	Samdinisha Rishwana	x	a	x	x	x	x	x	x	x	x
57.	Sanjana	x	x	p	x	x	x	x	x	x	x
58.	Santhana Lakshmi	x	x	x	x	x	x	x	x	x	x
59.	Shaju Snows	x	x	a	x	x	x	x	x	x	x
60.	Siva Sree Nandhini	x	x	x	x	x	x	x	x	x	x
61.	Snowfia	x	x	x	x	x	x	a	a	x	x
62.	Snowlin Ramani	x	x	x	x	x	x	a	x	x	x
63.	Snows Dee Melba.	x	x	P	x	x	x	x	x	x	x
64.	Somasundari	x	x	x	x	x	a	x	x	x	x
65.	Stasno	x	x	x	x	x	x	x	x	x	x
66.	Thangalakshmi	x	x	x	x	x	x	a	x	x	x
67.	Vaishnavi	x	x	x	x	x	x	x	x	x	x
68.	Varsha	x	x	x	x	x	x	x	x	a	x
69.	Varshaa.	x	x	x	x	x	x	x	x	x	x
70.	Vidhya.	x	x	a	x	x	x	a	x	x	a
	Signature of the Incharge.	SH	SH	SH	SH	SH	SH	SH	SH	SH	SH
	Signature of the Tutor										
		2	4	6	8	10	12	14	16	18	20

2023

(Autonomous) THOOTHUKUDI - 628 001.

FOR THE MONTH OF _____ 201 -201

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
x	x	x	x	x																
x	a	x	x	x																
x	x	x	x	x																
x	a	x	x	x																
x	x	x	x	x																
x	x	x	x	x																
x	a	a	a	x																
x	x	x	x	x																
x	a	x	x	x																
x	x	x	x	x																
x	x	x	x	x																
x	x	a	x	x																
x	x	x	x	x																
x	x	x	x	x																
x	x	x	x	x																
x	x	x	a	x																
a	a	a	x	x																
x	a	x	x	x																
a	x	x	x	x																
x	x	x	x	x																
x	x	x	x	x																
x	x	x	x	x																
x	x	x	x	x																
x	x	x	x	x																
SH	SH	SH	SH	SH																
22	24	26	28	30																

CHARTERED PUBLIC AUDITOR RESULT [illegible]

S.No	Name of the Student	Assignment	Viva Voce	[illegible]	[illegible]	Written Exam	Total	Grade
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

S. Muthu Kumar Raj [illegible]

[illegible]

Report of Certificate Course 2022 – 23

Chartered Public Auditor Level - I

Chartered Public Auditor Level – I course offers various aspects of accounting, auditing, taxation and financial management and offers career opportunities in public and private sectors. The course was scheduled for 30 hours duration from 10th August 2022 to 19th October 2022 from 2.00 – 4.00 p.m. It helped the students to kickstart their careers in national and international level based on the areas of expertise. 70 students were the beneficiaries.

ST. MARY'S COLLEGE (AUTONOMOUS), THOOTHUKUDI

(Re-accredited with 'A+' Grade by NAAC)

CAREER ORIENTED PROGRAMME

CERTIFICATE

This is to certify that Ms. VAISHNAVI . T N of III B.Com

has actively participated and successfully completed a course on CHARTERED

PUBLIC AUDITOR - LEVEL - I conducted during the academic year

20 22 - 20 23 with B Grade.

Instructor

Lucia Rose

Principal

St. Mary's College (Autonomous)

Thoothukudi - 628 001

St. Mary's College (Autonomous) – Thoothukudi

Internal Quality Assurance Cell (IQAC)

Collaborative Activities 2022 - 2023

Academic & Research

Publication Period: January to December **Academic Activities Period: June to July**

1	**Name of the Faculty with Designation, Staff ID**	C. Nayanthara Mascarenhas Assistant Professor CPSS003 of Computer Science
2	**Name of the Collaborating Faculty with Designation**	Mr. P. Johnson Durai Raj Data Scientist. Postulate Infotech Thoothukudi
3	**Name of the Collaborating Organisation**	Postulate Infotech, 212 New Colony Pudugramam, Thoothukudi - 3
4	**Nature of Collaboration** (Academic / Research / Faculty Exchange / BOS/ Examiner / Student Exchange / Project / Internship / On-the Job Training)	Internship
5	**Nature / Details of Outcome** [Guest Lecture / DC member / Guide / Co-guide / Project Reports /Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Others]	Web Developer
6	**Financial Involvement (if any)**	No
7	**Proof Attached**	Yes

Signature of Faculty

Signature of the Collaborating Faculty

B. Serena Margaret
Signature of IQAC Coordinator

IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Lucia Rose
Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

POSTULATE

08-04-2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. M. Kathija Apsana**, M.Sc., Computer Science, Department of Computer Science, St. Mary's College (Autonomous), Thoothukudi, Tamil Nadu has successfully completed internship from 19th January 2023 to 2nd February 2023 in POSTULATE INFO TECH PRIVATE LIMITED. During the period she has assigned with Web Development project and found Diligent and Attentive.

We wish all the very best for future endeavors.

DIRECTOR-POSTULATE

POSTULATE INFO TECH PRIVATE LIMITED

POSTULATE

08-04-2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. B. Mahalakshmi**, M.Sc., Computer Science, Department of Computer Science, St. Mary's College (Autonomous), Thoothukudi, Tamil Nadu has successfully completed internship from 19th January 2023 to 2nd February 2023 in POSTULATE INFO TECH PRIVATE LIMITED. During the period she has assigned with Web Development project and found Diligent and Attentive.

We wish all the very best for future endeavors.

DIRECTOR-POSTULATE

POSTULATE INFO TECH PRIVATE LIMITED

POSTULATE

08-04-2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. P. Nisha Rani**, M.Sc., Computer Science, Department of Computer Science, St. Mary's College (Autonomous), Thoothukudi, Tamil Nadu has successfully completed internship from 19th January 2023 to 2nd February 2023 in POSTULATE INFO TECH PRIVATE LIMITED. During the period she has assigned with Web Development project and found Diligent and Attentive.

We wish all the very best for future endeavors.

DIRECTOR-POSTULATE

POSTULATE INFO TECH PRIVATE LIMITED

POSTULATE

08-04-2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. U. Parameshwari Bharathi**, M.Sc., Computer Science, Department of Computer Science, St. Mary's College (Autonomous), Thoothukudi, Tamil Nadu has successfully completed internship from 19th January 2023 to 2nd February 2023 in POSTULATE INFO TECH PRIVATE LIMITED. During the period she has assigned with Web Development project and found Diligent and Attentive.

We wish all the very best for future endeavors.

DIRECTOR-POSTULATE

POSTULATE INFO TECH PRIVATE LIMITED

POSTULATE

08-04-2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. R. Reshma**, M.Sc., Computer Science, Department of Computer Science, St. Mary's College (Autonomous), Thoothukudi, Tamil Nadu has successfully completed internship from 19th January 2023 to 2nd February 2023 in POSTULATE INFO TECH PRIVATE LIMITED. During the period she has assigned with Web Development project and found Diligent and Attentive.

We wish all the very best for future endeavors.

DIRECTOR-POSTULATE

POSTULATE INFO TECH PRIVATE LIMITED

St. Mary's College (Autonomous) – Thoothukudi
Internal Quality Assurance Cell (IQAC)
Collaborative Activities 2022- 2023
Academic & Research

Publication Period: January to December **Academic Activities Period: June to July**

1	Name of the Faculty with Designation, Staff ID	R.Rohini,Counsellor and Assistant Professor,Dept of Psychology,St.Mary's college (Autonomous)Thoothukudi. COUS002
2	Name of the Collaborating Faculty with Designation	Dr.Sithi Jameela, Controller of Examination, Sadakathullah Appa College [Autonomous[Tirunelveli.
3	Name of the Collaborating Organization	Sadakathullah Appa College [Autonomous[Tirunelveli.
4	Nature of Collaboration (Academic / Research / Faculty Exchange / Examiner / Student Exchange / Project / Internship / On-the Job Training)	Examiner
5	Nature / Details of Outcome [Guest Lecture / DC member / Guide / Co-guide / Project Reports / Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Other	external examiner for the Psychology practical examination on 26.4.2023
6	Financial Involvement (if any)	Nil
7	Proof Attached	Yes

Signature of Faculty

Signature of the Collaborating Faculty

Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

Signature of IQAC Coordinator

IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Sadakathullah Appa College (Autonomous)
Rahmath Nagar, Tirunelveli – 627011
(Reaccredited by NAAC at an 'A++' Grade with a CGPA of 3.56 in the IV cycle and ISO 9001:2015 Certified Institution)
Rahmath Nagar, Tirunelveli-627011

THE OFFICE OF THE CONTROLLER OF EXAMINATIONS

Phone: 9789340121

Date: 26.04.2023

ATTENDANCE CERTIFICATE

This is to certify that **Dr.R.Rohini,** Assistant Professor, Department of Psychology, St. Mary's College (Autonomous), Thoothukudi-628001 Tamil Nadu, has served as an External Examiner for April 2023 Semester UG Allied Practical for **I Year B.Sc.,Psychology students** at Sadakathullah Appa College (Autonomous), Tirunelveli-627011,Tamil Nadu on **26.04.2023.**

26/4/23

(Dr. M. SITHI JAMEELA)
Controller of Examinations

CONTROLLER OF EXAMINATIONS
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
Rahmath Nagar, Tirunelveli - 627 011.

St. Mary's College (Autonomous) – Thoothukudi

Internal Quality Assurance Cell (IQAC)

Collaborative Activities 2021 - 2022

Academic & Research

Publication Period: January to December **Academic Activities Period: June to July**

1	**Name of the Faculty with Designation, Staff ID**	Dr.G.Sumathi Assistant Professor in Economics ECOS011
2	**Name of the Collaborating Faculty with Designation**	Dr.N.Sahar Ban Assistant Professor in Economics
3	**Name of the Collaborating Organization**	Sadakathullahappa College,Tirunelveli
4	**Nature of Collaboration** (Academic / Research / Faculty Exchange / BOS/ Examiner / Student Exchange / Project / Internship / On-the Job Training)	Research
5	**Nature / Details of Outcome** [Guest Lecture / DC member / Guide / Co-guide / Project Reports /Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Others]	NIU International Journal of Human Rights, UGC Care Listed Journal Group -1 Volk . 9 (1) 2022 ISSN: 2394-0298 entitled : Mahatma Gandhi National Rural Employment Guarantee Scheme in Thoothukudi District
6	**Financial Involvement (if any)**	No
7	**Proof Attached**	Yes

G. Sumathi
Signature of Faculty

N. Sagaiban
Signature of the Collaborating Faculty

B. Serena Margaret
Signature of IQAC Coordinator

IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Louis Pon
Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

NIU International Journal of Human Rights

A UGC CARE Listed Journal

ISSN : 2394 - 0298

CERTIFICATE OF PUBLICATION

This is to certify that

DR.N.SAHAR BAN

ASSISTANT PROFESSOR, DEPARTMENT OF ECONOMICS, SADAKATHULLAHAPPA COLLEGE, TIRUNELVELI. TAMIL NADU, INDIA

for the paper entitled

MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME IN THOOTHUKUDI DISTRICT

Vol. **9(I) - 2022**

in

NIU International Journal of Human Rights

UGC Care Group 1

ISSN : 2394 - 0298

Editor

NIU International Journal of Human Rights

A UGC CARE Listed Journal

ISSN : 2394 - 0298

CERTIFICATE OF PUBLICATION

This is to certify that

G.SUMATHI

ASSISTANT PROFESSOR, DEPARTMENT OF ECONOMICS,
ST.MARY'S COLLEGE, THOOTHUKUDI. TAMIL NADU, INDIA

for the paper entitled

MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME IN THOOTHUKUDI DISTRICT

Vol. **9(I) - 2022**

in

NIU International Journal of Human Rights

UGC Care Group 1

ISSN : 2394 - 0298

Editor

MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME IN THOOTHUKUDI DISTRICT

DR.N.SAHAR BAN ASSISTANT PROFESSOR, DEPARTMENT OF ECONOMICS, SADAKATHULLAHAPPA COLLEGE, TIRUNELVELI. TAMIL NADU, INDIA
G.SUMATHI ASSISTANT PROFESSOR, DEPARTMENT OF ECONOMICS, ST.MARY'S COLLEGE, THOOTHUKUDI. TAMIL NADU, INDIA

MGNREGP Workers in India:

In India most of the rural people depend on practicing agriculture and other allied works, so various schemes have been implemented by the Government for the benefit of the rural people to increase their social and economic development. The MGNREGP is one such scheme which obviously improves the economic status of rural people throughout India.

MGNREGP in Tamil Nadu:

The Mahatma Gandhi National Rural Employment Guarantee Scheme in Tamil Nadu was started on 02.02.2006. The Scheme was started as first phase in six districts (Villupuram, Cuddalore, Nagapattinam, Sivagangai, Tiruvanamalai and Dindigul)) in 2006. The second phase of the scheme was implemented in 2007 in the districts of (Tirunelveli, Thanjavur, Thiruvarur, Karur). From 1.4.08 onwards the scheme was implemented in the remaining 20 districts of Ariyalur, Dharmapuri, Perambalur, Pudukkottai, Ramanathapuram, Namakkal, Vellore, Tuticorin, Virudhunagar, Salem, Erode, Tiruchirapalli, Kanchepuram, Theni, Thiruvallur, Madurai, Nilgiri, Kanniyakumar i, Coimbatore, Krishnagiri (DRDA, 2008).

The National Rural Employment Guarantee Scheme has been functioning in the name of Mahatma Gandhi National Rural Employment Guarantee Scheme from October 2009. Under this scheme `2,939 crore and 19 lakhs has been the expense so far in Tamil Nadu (The Hindu. 2007).

Employment Generation under NREGA

Year	No. of Households Demanded Employment (in Crores)	No. of Households Provided Employment (in Crores)	Person Days (in Crores)
2006-2007	2.12	2.10	90.51
2007-2008	3.43	3.39	143.68
2008-2009	4.54	4.50	216.04
2009-2010	5.65	5.34	283.20
2010-2011	5.50	5.50	257.20
2011-2012	5.00	5.00	209.30
. 2012-2013	6.30	7.20	225.40
2013-2014	5.18	4.79	220.36
2014-2015	4.65	4.14	166.20
2015-16		4.81	235.15
2016-17		5.12	235.65
2017-18		5.12	232.74
2018-19		5.22	267.91

Source :www.nrega.nic.in, 2006-2007 to 2018-2019.

MGNREGP in Thoothukudi:

The MGNREG Programme was implemented in all the blocks in Thoothukudi district, with a view to provide employment and income to rural and unskilled labourers, at least for hundred days a year with a wage of `167 per day for both male and female in 2014-2015. It also creates rural assets like road and assists the agriculture by strengthening the bound of the irrigation structures and deepening of ponds and tanks. Therefore, the programme not only generates direct employment but

also creates indirect employment through increasing the irrigation intensity and crop intensity. In the district, it is heartening to note that Ottapidaram and Vilathikulam have provided 86 and 80 per cent of households with jobs respectively, as the two blocks are backward in agriculture and industry, employment generation assume significance to alleviate poverty. Sathankulam has only 29 per cent with more irrigation facilities and therefore agriculture jobs are being provided to the households. Still the MGNREG programme in the block has to be implemented with all seriousness and sincerity in order to increase the human development. Here it is to be noted that the MGNREGP workers has an impact on work participation rate for female. For example, Vilathikulam which has provided job under the MGNREGP to 86 per cent of the registered household which is number one position and the same Vilathikulam has got number one position in total worker participation rate 57 per cent and work participation rate for female 52 per cent.

STATEMENT OF THE PROBLEM

1. Does MGNREGP become successful in improving the living condition of the poor?
2. Does it promise job to the needy?
3. What extent MGNREGP has helped in sustaining the unemployed poor livelihoods?
4. Does it succeed in reducing migration and poverty?
5. Is it really a livelihood generating programme than wage-earning scheme?

Objectives of the Study:

1. to examine the socio-demographic characteristics of the women workers of MGNREGP in the study area;
2. to study an overview of MGNREGP in Thoothukudi district of Tamil Nadu;
3. to evaluate the economic impact of MGNREGP in Thoothukudi district
4. to create awareness and to trace the impact of employment in MGNREGP in the study area;

REVIEW OF LITERATURE

Jala Salve PrakashVankar et al., (2014) found that Indira AwaasYojana (IAY) has improved socio economic condition of beneficiaries in rural area. Those living in deplorable conditions since the implementation of IAY. It has been found that depriving condition of poor people is changed positively. Considering the illiteracy of many beneficiaries the IAY scheme should be made user – friendly. Awareness programmes, recording of temporary workers and their residential status every 6 months is necessary. This data has to be considered while deciding the IAY beneficiaries.

Harsha, (2010)argued that MGNREGA cannot be a long-term solution to theunemployment problem of rural India. A comprehensive and a more sustainable solution creates large-scale self-employment opportunities in the secondary and tertiary sectors in the rural areas it stimulates demand and increases the rural productivity which is still the need to be found.

Significance of MGNREGA

- While the earlier wage employment programmes did not provide any guarantee of job, this Act provided guaranteed job. This guarantee for wage employment is now uniformed all over the country like never before.
- It is a development initiative, chipping in with essential public investment for creation of durable assets, without which the growth process can't be possible in the most backward regions of rural India.

MGNREGP Schemes Progress in Thoothukudi District

Progress	2019-20	2018-19	2017-18	2016-17	2015-16
Approved Labour Budget[In Lakhs]	72.62	94.12	100.25	78.5	94.95
Person days Generated so far[In Lakhs]	16.04	65.16	89.79	129.62	92.24
% of Total LB	22.09	69.24	89.56	165.11	97.15
% as per Proportionate LB	78.39				

SC person days % as of total person days	30.63	30.05	30.85	31.2	31.87
ST person days % as of total person days	0.06	0.07	0.09	0.09	0.1
Women Person days out of Total (%)	87.49	87.87	86.86	88.17	87.31
Average days of employment provided per Household	16.81	49.01	61.25	86.81	65.10
Average Wage rate per day per person(Rs.)	164.26	179.7	157.64	163.05	142.17
Total No of HHs completed 100 Days of Wage Employment	0	2,792	17,245	74,878	29,862
Total Households Worked[In Lakhs]	0.95	1.33	1.47	1.49	1.42
Total Individuals Worked[In Lakhs]	1.01	1.47	1.67	1.7	1.61
Differently abled persons worked	918	1204	1494	1500	1446

Source: nregp.nic.in. 2018-19.

Conclusion

In India more than 70 per cent of the population lives in rural areas. Hence, majority of them depend upon agriculture. They also migrate to cities in search of jobs. One the serious problem facing today in India is poverty. Rural areas are mostly affected by the problem of poverty. In spite of this background, MGNREGP, an employment guarantee scheme provides 100 days guaranteed wage employment for all demands of work. Women are given guarantee for one-third of the share in total employment. It can be concluded from the study that the impact of MGNREGP in Thoothukudi district has brought many positive changes in improving the livelihood of the poor people along with improvement in the infrastructure for sustainable growth.

St. Mary's College (Autonomous) – Thoothukudi

Internal Quality Assurance Cell (IQAC)

Collaborative Activities 2022 - 2023

Academic & Research

Publication Period: January to December **Academic Activities Period: June to July**

1	**Name of the Faculty with Designation, Staff ID**	Dr. P.J.Joslin, Associate Professor of Zoology, ZOOR006
2	**Name of the Collaborating Faculty with Designation**	Dr. K. Chitra Assistant Professor of Zoology Sadakathullah Appa College (Autonomous) Tirunelveli
3	**Name of the Collaborating Organisation**	Sadakathullah Appa College (Autonomous) Tirunelveli
4	**Nature of Collaboration (Academic / Research / Faculty Exchange / Examiner / Student Exchange / Project / Internship / On-the Job Training)**	Academic – Research- Ph.D Programme Commencement on 22- 05- 2023
5	**Nature / Details of Outcome [Guest Lecture / DC member / Guide / Co-guide / Project Reports / Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Other**	DC Member
6	**Financial Involvement (if any)**	No
7	**Proof Attached**	No

P. J. Joslin
Signature of Faculty

Signature of the Collaborating Faculty

B. Serena Margaret
Signature of IQAC Coordinator
IQAC - Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Lucia Rose
Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

MANONMANIAM SUNDARANAR UNIVERSITY

Reaccredited with 'A' Grade by NAAC (3rd Cycle)

CENTRE FOR RESEARCH

ABISHEKAPATTI, TIRUNELVELI – 627 012, TAMILNADU, INDIA

Phone : 0462 - 2333741, 9487907000, Intercom: 2563073, Mail: cfrmsu@msuniv.ac.in, web: msuniv.ac.in

DR. G.BALASUBRAMANIA RAJA
Director

REF : MSU/RES/Admn/January 2023 Session

Date : May 22, 2023

Ph.D., Programme Commencement Order

To

SOWMYA D
no 65 kamatchi nagar, 4th main road, ktc nagar
Thirunelveli, Tamil Nadu, Pincode - 627011
Mobile No. : 9445724938, Email ID : sowmyadivyanathan1980@gmail.com

Sir/Madam,

Sub: Registration for doing Ph.D., programme - Date of Commencement of Research work - Intimation - reg.

Ref: Counselling attended by the candidate for January 2023 session.

****

With reference to the above, you are provisionally registered for Ph.D., Programme as detailed below :

Name of the Scholar	SOWMYA D
Registration No.	**23121192102012**
Discipline	Microbiology
Inter Disciplinary Detail	YES
Gender & Community	Female & SC
Nationality	Indian
PWD Status	Not Applicable
Admission Based On	PG
Mode	PART TIME
Research Centre	Sadakathullah Appa College (Autonomous), Rahmath Nagar, Palayamkotti
Name of the Supervisor with Address	**Dr.K.Chitra, Assistant Professor** **Department of Environmental Biotechnology, Sadakathullah Appa College (Autonomous),** **Rahmath Nagar, Palayamkotti, 627011** **Mobile No. : 9486926175, Email ID : k.chitra7@gmail.com**
Name of the Co-Supervisor with Address	**NIL**
RAC Members	**1. DR L JEYA PRABA, ASSOCIATE PROFESSOR, DEPARTMENT OF ZOOLOGY, SARAH TUCKER COLLEGE, TIRUNELVELI, 627007** **Mobile No. : 9994032157, Email ID : jayapraba2009@gmail.com**
	2. DR P J JOSLIN, ASSOCIATE PROFESSOR, DEPARTMENT OF ZOOLOGY, ST.MARY'S COLLEGE, THOOTHUKUDI, 628001 **Mobile No. : 9442323091, Email ID : jos.mathias67@gmail.com**
Proposed Title	NANOPARTICLES IN ACTIVE AND SMART PACKAGING OF FOOD
Date of Commencement	22.05.2023 (Fees: Rs. 19000 , Pay ID: 17400955501 , Dt: 22.05.2023)

ASSISTANT SUPERINTENDENT ASSISTANT REGISTRAR DIRECTOR

Note : The Scholars are asked to submit the copy of Commencement order to Supervisor, Co-Supervisor (if applicable) / Research Centre / RAC Members

St. Mary's College (Autonomous) – Thoothukudi

Internal Quality Assurance Cell (IQAC)

Collaborative Activities 2022 - 2023

Academic & Research

Publication Period: January to December **Academic Activities Period: June to July**

1	**Name of the Faculty with Designation, Staff ID**	Dr. P.J.Joslin, Associate Professor of Zoology, ZOOR006
2	**Name of the Collaborating Faculty with Designation**	Dr. K. Chitra Assistant Professor of Zoology Sadakathullah Appa College (Autonomous) Tirunelveli
3	**Name of the Collaborating Organisation**	Sadakathullah Appa College (Autonomous) Tirunelveli
4	**Nature of Collaboration (Academic / Research / Faculty Exchange / Examiner / Student Exchange / Project / Internship / On-the Job Training)**	Academic – Research- Ph.D Programme Commencement on 22- 05- 2023
5	**Nature / Details of Outcome [Guest Lecture / DC member / Guide / Co-guide / Project Reports / Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Other**	DC Member
6	**Financial Involvement (if any)**	No
7	**Proof Attached**	No

P. J. Joslin

Signature of Faculty

Signature of the Collaborating Faculty

B. Serena Margaret

Signature of IQAC Coordinator

IQAC - Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Lucia Rose

Principal

St. Mary's College (Autonomous)
Thoothukudi-628 001.

MANONMANIAM SUNDARANAR UNIVERSITY

Reaccredited with 'A' Grade by NAAC (3rd Cycle)

CENTRE FOR RESEARCH

ABISHEKAPATTI, TIRUNELVELI – 627 012, TAMILNADU, INDIA

Phone : 0462 - 2333741, 9487907000, Intercom: 2563073, Mail: cfrmsu@msuniv.ac.in, web: msuniv.ac.in

DR. G.BALASUBRAMANIA RAJA
Director

REF : MSU/RES/Admn/January 2023 Session

Date : May 22, 2023

Ph.D., Programme Commencement Order

To

B UMA MAHESWARI
1261E-1 Muthu Nagar B Colony, KTC Nagar North, Tirunelveli -11
Thirunelveli, Tamil Nadu, Pincode - 627011
Mobile No. : 9486622936, Email ID : hariniuma21@gmail.com

Sir/Madam,

Sub: Registration for doing Ph.D., programme - Date of Commencement of Research work - Intimation - reg.

Ref: Counselling attended by the candidate for January 2023 session.

****

With reference to the above, you are provisionally registered for Ph.D., Programme as detailed below :

Name of the Scholar	B UMA MAHESWARI
Registration No.	**23121192022003**
Discipline	Inter Disciplinary
Inter Disciplinary Detail	Biochemistry - Environmental Biotechnology
Gender & Community	Female & BC
Nationality	INDIAN
PWD Status	Not Applicable
Admission Based On	PG
Mode	PART TIME
Research Centre	Sadakathullah Appa College (Autonomous), Rahmath Nagar, Palayamkotti
Name of the Supervisor with Address	Dr.K.Chitra, Assistant Professor Department of Microbiology, Sadakathullah Appa College (Autonomous), Rahmath Nagar, Palayamkotti, 627011 Mobile No. : 9486926175, Email ID : k.chitra7@gmail.com
Name of the Co-Supervisor with Address	NIL
RAC Members	1. DR P JOSLIN, Associate Professor, Department of Zoology, St. Mary's college, Thoothukudi-628001 Mobile No. : 9442323091, Email ID : jos.mathias67@gmail.com
	2. DR L JEYA PRABA, Associate Professor, Department of Zoology, Sarah Tucker College, Tirunelveli-627007 Mobile No. : 9994032157, Email ID : jayaprabha2009@gmail.com
Proposed Title	Study on Clinical, Microbiological and Epidemiological aspects of Leptospirosis in Tertiary care Hospital
Date of Commencement	22.05.2023 (Fees: Rs. 19000 , Pay ID: 17401141013 , Dt: 22.05.2023)

ASSISTANT SUPERINTENDENT ASSISTANT REGISTRAR DIRECTOR

St. Mary's College (Autonomous) – Thoothukudi
Internal Quality Assurance Cell (IQAC)
Collaborative Activities 2022- 2023
Academic & Research

Publication Period: January to December **Academic Activities Period: June to July**

1	Name of the Faculty with Designation, Staff ID	R.Rohini,Counsellor and Assistant Professor,Dept of Psychology,St.Mary's college (Autonomous)Thoothukudi. COUS002
2	Name of the Collaborating Faculty with Designation	Dr.Sithi Jameela, Controller of Examination, Sadakathullah Appa College [Autonomous[Tirunelveli
3	Name of the Collaborating Organization	Sadakathullah Appa College [Autonomous[Tirunelveli
4	Nature of Collaboration (Academic / Research / Faculty Exchange / Examiner / Student Exchange / Project / Internship / On-the Job Training)	External Examiner for the Psychology project viva
5	Nature / Details of Outcome [Guest Lecture / DC member / Guide / Co-guide / Project Reports / Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Other	External Examiner on 5.05.2023
6	Financial Involvement (if any)	Nil
7	Proof Attached	Yes

Signature of Faculty

Signature of the Collaborating Faculty

Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

B. Serena Margaret
Signature of IQAC Coordinator

IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Sadakathullah Appa College (Autonomous)
Rahmath Nagar, Tirunelveli – 627011
(Reaccredited by NAAC at an 'A++' Grade with a CGPA of 3.56 in the IV cycle and ISO 9001:2015 Certified Institution)
Rahmath Nagar, Tirunelveli-627011

THE OFFICE OF THE CONTROLLER OF EXAMINATIONS

Phone: 9789340121

Date: 05.05.2023

ATTENDANCE CERTIFICATE

This is to certify that **Dr.R.Rohini,** Assistant Professor, Department of Psychology, St.Mary' College (Autonomous), Thoothukudi - 628001, Tamil Nadu, has served as an External Examiner for April 2023 Semester UG Field Work Project Viva voce for **II Year B.Sc Psychology students** at Sadakathullah Appa College (Autonomous), Tirunelveli-627011,Tamil Nadu on **05.05.2023.**

(Dr. M. SITHI JAMEELA)
Controller of Examinations

CONTROLLER OF EXAMINATIONS
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
Rahmath Nagar, Tirunelveli - 627 011.

St. Mary's College (Autonomous)

PG and Research Department of English

Activities carried out under MoU signed with Shakespeare Publications from 2021-2024

Shakespeare Talent Examination (2022 -2023)

174 students from the Department of English appeared for the Shakespeare Talent Examinations conducted on 8th October 2022. Ananthana A of II B.A. English won the Second Prize in English for Competitive Exam at the State Level, Abarna M of II M.A. English and Abilasha M of III B.A. English won the Third Prize at the State Level in UGC NET Model Exam. The students received their Merit Certificates, Medals, and Trophies in recognition of their achievements.

A. Judie Sheela Damayanthi

Head of the Department

Head
Research Department of English
St.Mary's College (Autonomous)
Thoothukudi - 628001

St. Mary's College (Autonomous) – Thoothukudi

Internal Quality Assurance Cell (IQAC)

Collaborative Activities 2022 - 2023

Academic & Research

Publication Period: January to December **Academic Activities Period: June to May**

1	**Name of the Faculty with Designation, Staff ID**	MATR006 Dr.J.Arul Jesti Assistant Professor of Mathematics
2	**Name of the Collaborating Faculty with Designation**	-
3	**Name of the Collaborating Organisation**	Sadakathullah Appa College(Autonomous), Tirunelveli
4	**Nature of Collaboration** (Academic / Research / Faculty Exchange / BOS/ Examiner / Student Exchange / Project / Internship / On-the Job Training)	Academic
5	**Nature / Details of Outcome** [Guest Lecture / DC member / Guide / Co-guide / Project Reports /Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Others]	Question Paper Setterfor B.Sc. Mathematics(Complex Analysis) for April 2023 Semester Examination
6	**Financial Involvement (if any)**	Rs.700
7	**Proof Attached**	Yes

Signature of Faculty

Dr.J.ARUL JESTI
M.Sc.,M.Phil.,B.Ed.,Ph.D.,
Assistant Professor of Mathematics
St.Mary's College (Autonomous)
Thoothukudi-628001

Signature of the Collaborating Faculty

Lucia Rose
Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

B. Serena Margaret
Signature of IQAC Coordinator
IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Sadakathullah AppaCollege (Autonomous)

(Reaccredited by NAAC at an 'A++' Grade with a CGPA of 3.56 in the IV cycle and ISO 9001:2015 Certified Institution)

Rahmath Nagar, Tirunelveli – 627011

E- Mail: controllersadak@gmail.com

THE OFFICE OF THE CONTROLLER OF EXAMINATIONS

Phone: 9789340121

15.06.2023

CERTIFICATE

This is to certify that **Dr.J.Arul Jesti,** Assistant professor & Department of Mathematics, St.Mary's College (Autonomous), Thoothukudi- 628001 has served as a Question Paper Setter for **B.Sc., Mathematics (Sub.code:18UCMA61,Sub.Title : Complex Analysis)** for **April 2023 Semester Examinations at**. Sadakathullah Appa College, Tirunelveli-627011, Tamil Nadu. We thank you for your sincere services.

(Dr. M.SITHI JAMEELA)
Controller of Examinations

CONTROLLER OF EXAMINATIONS
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
Rahmath Nagar, Tirunelveli - 627 011.

St. Mary's College (Autonomous) – Thoothukudi
Internal Quality Assurance Cell (IQAC)
Collaborative Activities 2021 – 2022
Academic & Research

Publication Period: January to December **Academic Activities Period: June to July**

1	**Name of the Faculty with Designation, Staff ID**	Dr.B.Serena Margaret ENGR008
2	**Name of the Collaborating Faculty with Designation**	Principal Sadakkathullah Appa College, Palayamkottai
3	**Name of the Collaborating Organisation**	Sadakkathullah Appa College, Palayamkottai
4	**Nature of Collaboration** (Academic / Research / Faculty Exchange / BOS/ Examiner / Student Exchange / Project / Internship / On-the Job Training)	Academic – Subject Expert - Board of Studies in SWAYAM – NPTEL Online Certification Courses on 22.10.2021
5	**Nature / Details of Outcome** [Guest Lecture / DC member / Guide / Co-guide / Project Reports / Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Others]	Sharing of Expertise
6	**Financial Involvement (if any)**	Yes
7	**Proof Attached**	Yes

B. Serena Margaret
Signature of Faculty

Signature of the Collaborating Faculty

B. Serena Margaret
Signature of IQAC Coordinator
IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Lucia Rose
Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

Sadakathullah Appa College

*An Autonomous Institution Re-Accredited by NAAC at an 'A' Grade with a CGPA of 3.40 out of 4.0 * ISO 9001: 2015 Certified *

Date : 22-10-2021

ATTENDANCE CERTIFICATE

This is to certify that **Dr.B.SERENA MARGARET,** Associate Professor of English and IQAC Coordinator, NPTEL SPOC, St.Mary's College, Thoothukudi, attended the Board of Studies in **SWAYAM-NPTEL Online Certification Courses** held at Sadakathullah Appa College on 22nd of October, 2021 as **Subject Expert.**

22/10/21

PRINCIPAL

Rahmath Nagar, Tirunelveli 627 011. Ph : 0462-2540763, Fax : 0462-2540033
E-mail : principal@sadakath.ac.in, Website : www.sadakath.ac.in

St. Mary's College (Autonomous) – Thoothukudi
Internal Quality Assurance Cell (IQAC)
Collaborative Activities 2022- 2023
Academic & Research

Publication Period: January to December **Academic Activities Period: June to July**

1	Name of the Faculty with Designation, Staff ID	R.Rohini,Counsellor and Assistant Professor,Dept of Psychology,St.Mary's college (Autonomous)Thoothukudi. COUS002
2	Name of the Collaborating Faculty with Designation	Dr.Sithi Jameela, Controller of Examination, Sadakathullah Appa College [Autonomous[Tirunelveli.
3	Name of the Collaborating Organization	Sadakathullah Appa College [Autonomous[Tirunelveli.
4	Nature of Collaboration (Academic / Research / Faculty Exchange / Examiner / Student Exchange / Project / Internship / On-the Job Training)	Examiner
5	Nature / Details of Outcome [Guest Lecture / DC member / Guide / Co-guide / Project Reports / Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Other	external examiner for the Psychology practical examination on 26.4.2023
6	Financial Involvement (if any)	Nil
7	Proof Attached	Yes

Signature of Faculty

Signature of the Collaborating Faculty

Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

Signature of IQAC Coordinator

IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Sadakathullah Appa College (Autonomous)
Rahmath Nagar, Tirunelveli – 627011
(Reaccredited by NAAC at an 'A++' Grade with a CGPA of 3.56 in the IV cycle and ISO 9001:2015 Certified Institution)
Rahmath Nagar, Tirunelveli-627011

THE OFFICE OF THE CONTROLLER OF EXAMINATIONS

Phone: 9789340121

Date: 26.04.2023

ATTENDANCE CERTIFICATE

This is to certify that **Dr.R.Rohini,** Assistant Professor, Department of Psychology, St. Mary's College (Autonomous), Thoothukudi-628001 Tamil Nadu, has served as an External Examiner for April 2023 Semester UG Allied Practical for **I Year B.Sc.,Psychology students** at Sadakathullah Appa College (Autonomous), Tirunelveli-627011,Tamil Nadu on **26.04.2023.**

26/4/23

(Dr. M. SITHI JAMEELA)
Controller of Examinations

CONTROLLER OF EXAMINATIONS
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
Rahmath Nagar, Tirunelveli - 627 011.

St. Mary's College (Autonomous) – Thoothukudi

Internal Quality Assurance Cell (IQAC)

Collaborative Activities 2021 - 2022

Academic & Research

Publication Period: January to December **Academic Activities Period: June to July**

1	**Name of the Faculty with Designation, Staff ID**	Dr. S. Jeya Bharathi Assistant Professor, Dept. of Psychology, SMC PSYS001
2	**Name of the Collaborating Faculty with Designation**	Dr. S.S. Srinithi Asst. Prof, Dept. of Psychology Sadakathullah Appa College (Autonomous) Tirunelveli
3	**Name of the Collaborating Organisation**	Sadakathullah Appa College (Autonomous) Tirunelveli
4	**Nature of Collaboration** (Academic / Research / Faculty Exchange / BOS/ Examiner / Student Exchange / Project / Internship / On-the Job Training)	External examiner for UG Major Practical (17.6.2022)
5	**Nature / Details of Outcome** [Guest Lecture / DC member / Guide / Co-guide / Project Reports / Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Others]	Evaluation of Practical exam
6	**Financial Involvement (if any)**	Yes
7	**Proof Attached**	Yes

Signature of Faculty

Signature of the Collaborating Faculty

HEAD & ASSISTANT PROFESSOR
DEPARTMENT OF PSYCHOLOGY
SADAKATHULLAH APPA COLLEGE
PALAYAMKOTTAI

Principal

St. Mary's College (Autonomous)
Thoothukudi-628 001.

B. Serena Margaret

Signature of IQAC Coordinator

IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

SadakathullahAppa College (Autonomous)
(Reaccredited by NAAC at an 'A' Grade and ISO 9001:2015 Certified Institution)
Rahmath Nagar, Tirunelveli – 627011
E- Mail: controllersadak@gmail.com

Phone: 9789340121

Date:17.06.2022

ATTENDANCE CERTIFICATE

This is to certify that **Dr.S.Jeya Bharathi,** Head &Assistant Professor, Department of Psychology, St.Mary's College(Autonomous), Thoothukudi-628001, Tamil Nadu, has served as an External Examiner for April 2022 Semester UG Major Practical for **I year B.Sc., Psychology students** at Sadakathullah Appa College (Autonomous), Tirunelveli-627011, Tamil Nadu on **17.06.2022.**

17/6/2022

CONTROLLER OF EXAMINATIONS

CONTROLLER OF EXAMINATIONS
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
Rahmath Nagar, Tirunelveli - 627 011

St. Mary's College (Autonomous) – Thoothukudi

Internal Quality Assurance Cell (IQAC)

Collaborative Activities 2022 - 2023

Academic & Research

Publication Period: January to December **Academic Activities Period: June to May**

1	**Name of the Faculty with Designation, Staff ID**	Dr. S. Sudha Rani Assistant Prof. of Englh ENGR010
2	**Name of the Collaborating Faculty with Designation**	–
3	**Name of the Collaborating Organisation**	
4	**Nature of Collaboration (Academic / Research / Faculty Exchange / Examiner / Student Exchange / Project / Internship / On-the Job Training)**	Research Dept. of Englh. Sadakathullah Appa College (Autonomous) Tirunelveli-
5	**Nature / Details of Outcome [Guest Lecture / DC member / Guide / Co-guide / Project Reports / Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Other**	IQC Member
6	**Financial Involvement (if any)**	–
7	**Proof Attached**	Yes

S. Sudha Rani
Signature of Faculty

Signature of the Collaborating Faculty

B. Serena Margaret
Signature of IQAC Coordinator

Lucia Rose
Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

From

Dr. S. Mohamed Haneef

Assistant Professor and Head

Research Department of English

Sadakathullah Appa College (Autonomous)

Tirunelveli

To

Dr. S. Sudha Rani

Assistant Professor of English

Department of English

St. Mary's College

Tuticorin

Respected Madam,

Sub: First Doctoral Committee Meeting for Mrs. A. Uswathun Hasana, a Full-Time PhD Scholar

Ref: MSU/RES/Admn/July 2022 Session

With reference to the subject cited above, it is proposed to conduct the First Doctoral Committee Meeting offline for my scholar Mrs. A. Uswathun Hasana (Full-Time PhD candidate, Reg No: 22211194012011) at 10.30 a.m on 09.12.2022 at the Research Centre, Sadakathullah Appa College, Tirunelveli. Kindly make it convenient to attend the meeting.

Thank you,

Date: 08.12.2022

Place: Tirunelveli

Yours faithfully,

8/12/2022

Dr.KANNA MUTHIAH, M.A.,M.Phil.,Ph.D.
Assistant Professor & Research Head
Research Department of English
Sadakathullah Appa College
Rahmath Nagar, Tirunelveli-11

St. Mary's College (Autonomous) – Thoothukudi
Internal Quality Assurance Cell (IQAC)
Collaborative Activities 2022 - 2023
Academic & Research

Publication Period: January to December **Academic Activities Period: June to July**

1	**Name of the Faculty with Designation, Staff ID**	Dr. R. Mary Santhi Assistant Professor of Botany, BOTR014
2	**Name of the Collaborating Faculty with Designation**	Dr. M. Sithi Jameela Controller of Examination
3	**Name of the Collaborating Organisation**	Sadakathullah Appa College (Autonomous), Tirunelveli
4	**Nature of Collaboration** (Academic / Research / Faculty Exchange / BOS/ Examiner / Student Exchange / Project / Internship / On-the Job Training)	Examiner
5	**Nature / Details of Outcome** [Guest Lecture / DC member / Guide / Co-guide / Project Reports / Publications (Research Papers) / Sharing of Research Resources (Lab / Library / Industry) / Others]	Others
6	**Financial Involvement (if any)**	Yes (Rs. 3500/-)
7	**Proof Attached**	Yes

(DR.M.SITHI JAMEELA)

R. Mary Santhi
Signature of Faculty

Signature of the Collaborating Faculty

B. Serena Margaret
Signature of IQAC Coordinator

IQAC Co-ordinator
St. Mary's College (Autonomous)
Thoothukudi

Lucia Rose
Principal
St. Mary's College (Autonomous)
Thoothukudi-628 001.

Sadakathullah AppaCollege (Autonomous)

(Reaccredited by NAAC at an 'A++' Grade with a CGPA of 3.56 in the IV cycle and ISO 9001:2015 Certified Institution)

Rahmath Nagar, Tirunelveli – 627011

E- Mail: controllersadak@gmail.com

THE OFFICE OF THE CONTROLLER OF EXAMINATIONS

Phone: 9789340121

Date: 19.06.2023

ATTENDANCE CERTIFICATE

This is to certify that **Dr.R.Mary Santhi,** Assistant Professor, Department of Botany, St.Mary's College (Autonomous) Thoothukudi- 628001 has served as an Additional Examiner for **Environmental Science Evaluation Board** for **April 2023 Semester Examinations** at Sadakathullah Appa *College (Autonomous), Tirunelveli-627011* from **29.05.2023 to 31.05.2023.**

(DR.M.SITHI JAMEELA)

CONTROLLER OF EXAMINATIONS

CONTROLLER OF EXAMINATIONS
SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)
Rahmath Nagar, Tirunelveli - 627 011.

ZION AUDITOR COLLEGE

Exclusive College for C.A., C.M.A. (ICWAI)

54 E/1, St. Peter Street,
Perumalpuram, Tirunelveli,
Tamil Nadu - 627 007.

9629120019
www.zionicwai.in
zionicwai@gmail.com

Date: 04/04/2024

To Whom It May Concern,

This letter is to confirm the enrollment of P. Preethy Paikaray, a student at Zion Auditor College, in the extended Memorandum of Understanding (MOU) between Department of Commerce (SSC), St. Mary's College (Autonomous), Thoothukudi and Zion Auditor College, Palayamkottai.

P. Preethy Paikaray is a student pursuing CMA in our institution. She is an aspiring student who studies to accomplish her goals. She is a student with a strong interest to complete her CMA course.

We believe P. Preethy Paikaray will be a valuable participant in the extended MOU and will benefit greatly from the opportunities offered by the MOU like career oriented training programs and awareness of the course given by Zion Auditor College.

We authorize P.Preethy Paikaray to participate in all activities outlined in the extended MOU between Department of Commerce (SSC), St. Mary's College (Autonomous), Thoothukudi and Zion Auditor College, Palayamkottai.

Please do not hesitate to contact me at zionicwai@gmail.com if you require any further information.

ZION AUDITOR COLLEGE 627 007 Tirunelveli

04/04/24

DIRECTOR,
ZION AUDITOR COLLEGE,
Perumalpuram,
Tirunelveli - 627 007.

IMS - QMS ISO 9001:2015;
EMSISO 14001:2015;
OHSAS ISO 45001:2018
& ISPS CODE COMPLAINT PORT

வ.உ.சிதம்பரனார் துறைமுக ஆணையம்
व.उ.चिदम्बरनार पत्तन प्राधिकरण
V.O.CHIDAMBARANAR PORT AUTHORITY
पत्तन, पोत परिवहन और जलमार्ग मंत्रालय,भारत सरकार
MINISTRY OF PORTS, SHIPPING and WATERWAYS
GOVERNMENT OF INDIA
VIGILANCE DEPARTMENT
ADMINISTRATIVE OFFICE, HARBOUR ESTATE, TUTICORIN - 628 004, TAMILNADU.
Phone : 0461 - 2352253, Email : cvo@vocport.gov.in

SAGARMALA
PORT-LED PROSPERITY
Azadi Ka Amrit Mahotsav

14/11/22

No.Vig-24/22/2022/D. 609

Date: 9 .11.2022

To

The Principal,
St.Mary's College, (Email: smctuty@gmail.com)
Cruz Puram,
Thoothukudi- 628001

Sub: Observance of Vigilance Awareness Week, 2022
Results of the competitions- Reg

Dear Sir/Madam,

The results of the various competitions on the topic **"Corruption free India for a developed Nation"** conducted by Vigilance Deptt of V.O.C. Port Authority in connection with the observance of Vigilance Awareness Week, 2022 in respect of your college are as follow:

Sl.No	Name	Department/year	competition	Prize
1	F.Vesta Serapha	B.A (Eng)-3rd yr	Essay writing (English)	First
2	S.Leebee Selvaa	B.A (Eng)-1st yr	Essay writing (English)	Second
3	A.Muthu Madhumitha		Elocution (Tamil)	First
4	F.Karunya		Elocution (Tamil)	Third
5	F.Vesta Serapha	B.A (Eng – lit) III	Skit	Second
6	K.Muthu Mathana	B.A (Eng)- 2nd yr		
7	L.Packia Kegitha	B.A (Eng)- 3rd yr		
8	S.J.Mercy Daisy Lilly	B.A (Eng)-3rd yr		
9	N.Jordan Ruth Mitra	B.A (Eng)-3rd yr	Singing	Second
10	J.Jaffrin Jenifer	B.A (Eng)-2nd yr		

2. The Prizes will be issued on the Valedictory function which is proposed to be held on 15.11.2022 at 15:30 hrs at Jawaharlal Nehru Centenary Community Hall of VOC Port Authority.