



TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
STUDENT PROJECT PROPOSAL



1. Name of the Student (s) :

S.No	Name of the Student	E-Mail ID	Phone No.
1	R. Subha Shree	subha.kkl2000@gmail.com	6380915918

2. Name of the Guide : Dr.G.Sudha
Department / Designation : Assistant Professor of Mathematics
Institutional Address : A.D.M College for Women (Autonomous) Nagapattinam
Phone No. & Mobile No. : 8883176263
3. Project Title : Mathematical Modelling in Water Assessment and Management along with its Impact on Agricultural Production.
4. Sector in which your Project proposal is to be Considered : Environmental Science
5. Project Details : Enclosed (Annexure -1)
6. Has a similar project been carried out in your college / elsewhere? If so furnish details of the previous project and highlight the improvements suggested in the present one : No

CERTIFICATE

This is to certify that Miss. **R.Subha Shree** is a bonafide final year student of P.G. Science / U.G. Engineering / P.G. Professional courses of our college and it is also certified that two copies of utilization certificate and final report along with seminar paper will be sent to the Council after completion of the project by the end of May 2023.


Signature of the Guide


Signature of the HOD


Signature of the Principal/
Head of the Institution

Dr. G. SUDHA,
M.Sc., M.Phil., B.Ed., Ph.D.,
Assistant Professor,
PG & Research Dept. of Mathematics,
A.D.M. College for Women (Autonomous)
Nagapattinam-611 001.

Dr. (Mrs) N. SARALA, M.Sc., B.Ed., M.Phil., Ph.D.,
Associate Professor and Research Adviser,
PG & Research Department of Mathematics,
A.D.M. College for Women (Autonomous)
Nagapattinam-611 001.



N.B.: 2 copies of the proposals are to be submitted through proper channel to The Member Secretary, TNSCST, DOTE Campus, Chennai - 600 025 on or before 07th September 2022, 5 pm.

Mathematical Modelling in Water Assessment and Management along with its Impact on Agricultural Production

INTRODUCTION

Growing population faces a severe threat due to water scarcity world wide . Problems are due to excessive use of the limited water resources. This combined with our lack of knowledge regarding the water availability. Moreover, the situation becomes even more complicated by the looming climate change which, in the longer period has the potential to decrease the availability of natural water resources in many areas of the world due to changes in the rainfall distribution and the increase in temperature.

In this project we are also going to discuss the impact of water management on agricultural production .Proper water management will result in efficient allocation of resources and has an indirect impact on growth of the output. To increase the overall efficiency, an irrigation technology that efficiently uses water for intense crop production.

OBJECTIVES

- To review the existing models for assessing regional water resources under stationary and changing climate conditions at different spatial and temporal scales
- To identify the progress and challenges that remain and discuss the possible further developments in the field
- To discuss the representative models and the different categories of these models instead of the individual models.
- To discuss the impact of water management on agricultural production.

METHODOLOGY

The models can be classified as models under stationary climate conditions and under constant climate change. The methods for simulating water resources under stationary climate conditions includes the long term water balance methods, conceptual lumped-parameter models and spatial hydrologic Geographic Information System (GIS) supported models.

Methodologies for assessing hydrological responses to global climate change include five methods which include the use of direct Global Climate Model (GCM) derived hydrological output, the method of coupling GCMs and macro scale hydrologic models, the use of dynamic downscaling, the use of statistical downscaling and the use of hypothetical scenarios as input to hydrological models.

Agro-Cropping Models/Water Productivity Models: predicts plant water uptake, water and solute transport under irrigation/drainage systems, and the relationship between crop yield and water/Nitrogen use.

Water Requirements/ Management on Irrigation District Level models (Crop-Match): Predicts water requirements for crop pattern gross (updated every 15 days), canals' duties, irrigation rotations, and district's water budget; counts for: soil type, canals' characteristics, and losses.

PLAN OF WORK


	PERIOD	WORK PARTICULARS
1	September & November	Collecting journals & Books
2	December & January	Developing models& further study
3	February & March	Finishing the project & Documentation

BUDGET

S.NO	PARTICULARS	AMOUNT IN RS
1	Collecting journals & Materials	1000
2	Computer hiring charges / related work	2000
3	Typing, Printing, Xeroxing	2000
4	Travel	2000
5	Stationary	1000
6	Final Report	2000
	Total	10,000

CONCLUSION

In today's world with pressure on all the resources including the water resources, the modelling of the water bodies have become a necessity. The Mathematical models have provided a great basis for assessment of the water resources. To increase overall efficiency, an irrigation technology that aims for water efficiency must be developed and promoted. In general, efficient use of water in agricultural production can be achieved by substantial public sector investments in controlling water logging and salinity, and in promoting optimal use of the existing water supply.


Signature of the Student


Signature of the Guide

467H/06-08-03



தமிழ்நாடு அறிவியல் தொழில்நுட்ப மன்றம்
TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

(Established by Government of Tamil Nadu)
Directorate of Technical Education Campus, Chennai - 600 095
Ph: 044-22331428, www.tamscst.org.in

Dr. R. SRINIVASAN, M.Sc, Ph.D, F.I.C.S, MACS (USA)
Member Secretary

Lr No TNSCST/SPS/BS/2022-2023

03.03.2023

To
The Principal
ADM College for Women,
Nagapattinam-611 001

Sir/Madam,

Sub: TNSCST - Student Project Scheme - 2022-2023 - approval intimation-grant release-reg.

With respect to the above scheme the list of projects approved by the State Council is enclosed along with terms and conditions. You are requested to adhere to terms and conditions such as submission of UC and Seminar Paper on Time.

1.	Dr. Sudha G, Assistant Professor, Department of Mathematics, ADM College for Women, Nagapattinam-611 001	Mathematical Modelling Applications in Water Assessment and Management along with its Impact on Agricultural Production	R. Subha Shree,	ES-001	The Principal	Rs 7500/-
Total						Rs 7500/-

Herewith enclosed the cheque for the approved grant and disburse the grant to the concerned students through the guides at the earliest

Kindly send the utilisation certificate (format enclosed) and seminar paper (Ref.T&C) on completion of the project.

Thanking you,

Yours faithfully,

Shammi
3/3/23
Member Secretary.

- Encl. a) Terms & Conditions (T&C)
- b) Format of Utilisation Certificate (UC)
- c) Cheque for Rs. 7500/- Cheque No:574721 dL03.03.2023

Copy to: Individual Guides

I
In
4/3/23

Indian Bank

BRANCH: 5078 CAMPUS
POST OFFICE: 600019
CHENNAI
IFSC Code: IBI0000000

03032020
10.11.19

Pay The Principal, ADM College for Women, Nagepathinam ON BEHALF
IN 10/11/19

RUPEES ₹ 7500
Seven thousand five hundred only

SB A/c No. 479135158

FOR MEMBER SECRETARY, TAMILNADU STATE COUNCIL SCIENCE & TECHNOLOGY

CBS Code: 01636

[Signature]

AUTHORIZED SIGNATORY

992000025

PAYABLE AT PAR AT ALL OUR BRANCHES

Please sign clearly

⑆ 574721⑆ 6000191190 135159⑆ 31

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
DOTE campus, Chennai-600 025

STUDENT PROJECT SCHEME 2022-2023

Terms and Conditions for the granted SPS projects

1. Every sanctioned project will be given a Project code Number. Please refer to this number while corresponding with TNSCST.
2. The project team **SHOULD NOT** change the topic of the project and should not deviate from the objectives of the sanctioned proposal. In the event of any such changes, sponsoring will be treated as canceled and the college should return the sanctioned amount to TNSCST.
3. The sanctioned projects should be completed and the reports should be submitted before the end of **MAY 2023**.
4. On completion of the project, a soft copy (CD) of the final project report and **TWO** copies of 2-3 page seminar paper (500 words-MS Word format), utilization certificate (UC) and statement of expenditure (SE) should be sent to **The Member Secretary, Tamilnadu State Council For Science and Technology, DOTE Campus, CHENNAI-600 025**.
5. The seminar paper will be included in the form of PROCEEDINGS which will be brought out during the Seminar cum Exhibition, only for those who submit the **UC & SE**.
6. The Utilization Certificate and Statement of Expenditure should be countersigned by the GUIDE, HOD and Principal/Registrar with an official **seal** as the case may be.
7. The guides are responsible for the timely submission of SEMINAR PAPER, UC and SE.
8. It is mandatory for the project team (**anyone student**) should present and exhibit the findings before the experts in the Seminar cum Exhibition which will be organized during **JULY / AUGUST 2023**.
9. During the Seminar cum Exhibition, "the best project award and certificate" will be presented to the outstanding projects and completion certificates to all.