



THE ASSAM
ROYAL GLOBAL UNIVERSITY
GUWAHATI

CRITERION 1

CURRICULAR ASPECTS

METRIC NO.
1.3.3

M.Sc. Mathematics

Field Work / Research Project / Internship



**ANALYTICAL SOLUTION OF HYDRO MAGNETIC
ELECTRICALLY CONDUCTING NEWTONIAN FLUID FLOW
IN A CONVERGENT CHANNEL
BY HOMOTOPY PERTURBATION TECHNIQUE**

**A PROJECT REPORT SUBMITTED
IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR THE
DEGREE OF MASTER OF SCIENCE IN MATHEMATICS**

**SUBMITTED BY
ANISUR RAHMAN
ROLL NO. 174011001**



**ROYAL GLOBAL UNIVERSITY
GUWAHATI**

**UNDER THE GUIDANCE OF
DR. KAMAL DEBNATH**

**DEPARTMENT OF MATHEMATICS
ROYAL SCHOOL OF APPLIED & PURE SCIENCES
THE ASSAM ROYAL GLOBAL UNIVERSITY
GUWAHATI**

JUNE 2019

Anusudha Debn
Dean, RSAPS
Assam Royal Global University



ROYAL GLOBAL UNIVERSITY
GUWAHATI

DEPARTMENT OF MATHEMATICS

CERTIFICATE OF SUBMISSION

I hereby recommend that the project report entitled "ANALYTICAL SOLUTION OF HYDRO MAGNETIC ELECTRICALLY CONDUCTING NEWTONIAN FLUID FLOW IN A CONVERGENT CHANNEL BY HOMOTOPY PERTURBATION TECHNIQUE" Submitted by Sri Anisur Rahman under the supervision of Dr. Kamal Debnath be accepted for partial fulfillment of the requirements for the degree of Master of Science in Mathematics.

Place: *Guwahati*

Date: *05.07.19*

Dr. Navalakhi Hazarika

HOD, Department of Mathematics.

Anusudha Devi

Dean, RSAPS
The Assam Royal Global University



**ROYAL SCHOOL OF APPLIED & PURE SCIENCES
DEPARTMENT OF MATHEMATICS**

CERTIFICATE

This is to certify that the project work entitled "ANALYTICAL SOLUTION OF HYDRO MAGNETIC ELECTRICALLY CONDUCTING NEWTONIAN FLUID FLOW IN A CONVERGENT CHANNEL BY HOMOTOPY PERTURBATION TECHNIQUE" which has been submitted by Sri Anisur Rahman, Roll No. 174011001 for the award of the degree of Master of Science in Mathematics to The Assam Royal Global University, Guwahati, Assam is a bonafide project work carried out by him under my supervision and guidance.

Mr. Rahman has fulfilled all the requirements of the university regulations relating to his period of project research.

The results presented in this report have not been submitted to any other university or institutions for the award of any degree or diploma.

Kamal Debnath

Place: *Guwahati*
Date: *05/07/19*

(Kamal Debnath)
Assistant Professor,
Department of Mathematics,
Royal School of applied & Pure Sciences,
The Assam Royal Global University,
Guwahati-781014.

Anuradha Devi
Dean, RSAPS
The Assam Royal Global University

MATHEMATICAL MODELING OF PLANT ECOSYSTEM

A PROJECT REPORT SUBMITTED
IN PARTIAL FULFILLMENT OF REQUIREMENT FOR
THE DEGREE OF MASTER OF SCIENCE IN
MATHEMATICS



ROYAL GLOBAL UNIVERSITY
GUWAHATI

SUBMITTED BY
BANASRI BORA
ROLL NO. 174011002

UNDER THE GUIDANCE OF
PROFESSOR (DR.) ANURADHA DEVI

DEPARTMENT OF MATHEMATICS
ROYAL SCHOOL OF APPLIED & PURE SCIENCES
THE ASSAM ROYAL GLOBAL UNIVERSITY
GUWAHATI

JUNE 2019

Anuradha Devi
Dean, RSAPS
The Assam Royal Global University



ROYAL GLOBAL UNIVERSITY
GUWAHATI

**ROYAL SCHOOL OF APPLIED & PURE SCIENCES
DEPARTMENT OF MATHEMATICS**

CERTIFICATE OF SUBMISSION

I hereby recommend that the Project report titled “**MATHEMATICAL MODELING OF PLANT ECOSYSTEM**” submitted by Sri Banasri Bora, Roll No.: 174011002 under the supervision of Dr. Anuradha Devi be accepted for partial fulfillment of the requirements for the degree of Master of Science in Mathematics.

Place: *Guwahati*
Date: *05.07.19*

Navaz
Dr. Navalakhi Hazarika
Head of Department
Department of Mathematics

Anuradha Devi
Dean, RSAPS
The Assam Royal Global University



ROYAL GLOBAL UNIVERSITY
GUWAHATI

ROYAL SCHOOL OF APPLIED & PURE SCIENCES
DEPARTMENT OF MATHEMATICS

CERTIFICATE

This is to certify that the project report entitled "MATHEMATICAL MODELING OF PLANT ECOSYSTEM" which has been submitted by Sri Banasri Bora, Roll No. 174011002 for the award of the degree of Master of Science in Mathematics to The Assam Royal Global University, Guwahati, Assam is a bonafide project work carried out by her under my supervision and guidance.

Ms. Bora has fulfilled all the requirements of the university regulations relating to her period of project work.

The results presented in this report have not been submitted to any other university or institutions for the award of any degree or diploma.

Place: Guwahati
Date: 5/7/19

Anuradha Devi
Prof (Dr.) Anuradha Devi
Dean, Royal School of applied & Pure Sciences
The Assam Royal Global university
Guwahati-781014

Anuradha Devi
Dean, RSAPS
The Assam Royal Global University

**A STUDY ON RAMANUJAN'S THETA FUNCTION IDENTITIES
ASSOCIATED WITH HIS MODULAR EQUATIONS OF DEGREE 15**

**A PROJECT REPORT SUBMITTED
IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR THE
DEGREE OF MASTER OF SCIENCE IN MATHEMATICS**

**SUBMITTED BY
PUNAM DAS
ROLL NO. 174011005**



**ROYAL GLOBAL UNIVERSITY
GUWAHATI**

**UNDER THE GUIDANCE OF
DR. NARAYAN NAYAK**

**DEPARTMENT OF MATHEMATICS
ROYAL SCHOOL OF APPLIED & PURE SCIENCES
THE ASSAM ROYAL GLOBAL UNIVERSITY
GUWAHATI**

JUNE 2019

Anuradha Das
Dean, RSAPS
The Assam Royal Global University



ROYAL GLOBAL UNIVERSITY
GUWAHATI

DEPARTMENT OF MATHEMATICS

CERTIFICATE OF SUBMISSION

I hereby recommend that the project report entitled "A STUDY ON RAMANUJAN'S THETA FUNCTION IDENTITIES ASSOCIATED WITH HIS MODULAR EQUATIONS OF DEGREE 15" submitted by Ms. Punam Das under the supervision of Dr. Narayan Nayak be accepted for partial fulfillment of the requirements for the degree of Master of Science in Mathematics.

Place: *Guwahati*
Date: *05.07.19*

Hazari
Dr. Navalakhi Hazarika
HOD, Department of Mathematics.

Anuradha Devi
Dean, RSAPS
The Assam Royal Global University



ROYAL GLOBAL UNIVERSITY
GUWAHATI

ROYAL SCHOOL OF APPLIED & PURE SCIENCES
DEPARTMENT OF MATHEMATICS

CERTIFICATE

This is to certify that the project work entitled "A STUDY ON RAMANUJAN'S THETA FUNCTION IDENTITIES ASSOCIATED WITH HIS MODULAR EQUATIONS OF DEGREE 15" which has been submitted by Ms. Punam Das, Roll No. 174011005 for the award of the degree of Master of Science in Mathematics to The Assam Royal Global University, Guwahati, Assam is a bonafide project work carried out by him under my supervision and guidance.

Ms. Das has fulfilled all the requirements of the university regulations relating to his period of project research.

The results presented in this report have not been submitted to any other university or institutions for the award of any degree or diploma.

Narayan Nayak

(Narayan Nayak)
Assistant Professor,
Department of Mathematics,
Royal School of applied & Pure Sciences,
The Assam Royal Global University,
Guwahati-781014.

Place: *Guwahati*
Date: *5/7/19*

Anumaha Das

Dean, RSAPS
The Assam Royal Global University

DIFFIE-HELLMAN KEY EXCHANGE AND ITS DRAWBACKS

*A Project Report submitted
in partial fulfilment of the requirements for the degree of
Master of Science in Mathematics*

Under



THE ASSAM

ROYAL GLOBAL UNIVERSITY

Submitted by-

Name: KAUSHIK KUMAR ADHIKARY

School: ROYAL SCHOOL OF APPLIED & PURE SCIENCES

Department: MATHEMATICS

Programme: MASTER OF SCIENCE

Registration No.: 1190888

Roll No.: 194011002

Anuradha Das
Dean, RSAPS
The Assam Royal Global University

YEAR: 2021

DIFFIE-HELLMAN KEY EXCHANGE AND ITS DRAWBACKS

*A Project Report submitted
in partial fulfilment of the requirements for the degree of
Master of Science in Mathematics*

Under



THE ASSAM

ROYAL GLOBAL UNIVERSITY

Offered by-

ROYAL SCHOOL OF APPLIED AND PURE SCIENCES

Submitted by-

Name: KAUSHIK KUMAR ADHIKARY

Registration No.: 1190888

Roll No.: 194011002

Academic Project Guide-

Name: H. IMO MANI SINGHA

Designation: Assistant Professor

Department & School: Mathematics, RSAPS

Anuradha Devi

Dean, RSAPS

The Assam Royal Global University



ROYAL GLOBAL UNIVERSITY
GUWAHATI

ROYAL SCHOOL OF APPLIED & PURE SCIENCES
DEPARTMENT OF MATHEMATICS

CERTIFICATE

This is to certify that the project report entitled "*Diffie-Hellman Key Exchange and Its Drawbacks*" submitted by Kaushik Kumar Adhikary, a student of M.Sc. Mathematics bearing Roll No. 194011002 and Registration No. 1190888 to The Assam Royal Global University, Guwahati in partial fulfillment for the award of the degree of Master of Science in Mathematics is a bona fide record of project work carried out by him under my supervision and guidance.

The contents of this report, in full or in parts, have not been submitted to any other Institution or University for the award of any degree or diploma.

(H IMO MANI SINGHA)

Date: 13.08.2021

Place: Guwahati

Assistant Professor

Department of Mathematics

RSAPS

Royal Global University

Dean

Anuradha Devi

Dean, RSAPS

The Assam Royal Global University

RSA AND IMPROVED RSA PUBLIC KEY CRYPTOGRAPHY

*A Project Report submitted
in partial fulfilment of the requirements for the degree of
Master of Science in Mathematics*

Under



THE ASSAM

ROYAL GLOBAL UNIVERSITY

Submitted by-

Name: MUSTAK EUCHUF

School: ROYAL SCHOOL OF APPLIED & PURE SCIENCES

Department: MATHEMATICS

Programme: MASTER OF SCIENCE

Registration No.: 1190889

Roll No.: 194011003

Anuradha Devi

Dean, RSAPS
The Assam Royal Global University

YEAR: 2021



ROYAL GLOBAL UNIVERSITY
GUWAHATI

ROYAL SCHOOL OF APPLIED & PURE SCIENCES
DEPARTMENT OF MATHEMATICS

CERTIFICATE

This is to certify that the project report entitled "*RSA and Improved RSA Public Key Cryptography*" submitted by Mustak Euchuf, a student of M.Sc. Mathematics bearing Roll No. 194011003 and Registration No. 1190889 to The Assam Royal Global University, Guwahati in partial fulfillment for the award of the degree of Master of Science in Mathematics is a bona fide record of project work carried out by him under my supervision and guidance.

The contents of this report, in full or in parts, have not been submitted to any other Institution or University for the award of any degree or diploma.

(H IMO MANI SINGHA)

Assistant Professor

Department of Mathematics

RSAPS

Royal Global University

Date: 13.08.2021

Place: Guwahati

Anuradha Debn
Dean, RSAPS
The Assam Royal Global University

**A comparative study of MHD and without MHD on unsteady flow
with slip condition and mass transfer effect**

**A Report submitted in partial fulfillment of the requirements for the degree of
M.Sc Mathematics**

under



**THE ASSAM
ROYAL GLOBAL UNIVERSITY**

offered by

Royal School of Applied and Pure Sciences

Submitted by

Name: RN Michael

Registration number: 1201046

Roll No. 204011009

Academic Project Guide

Name: Dr. Anuja Sinha

Designation: Assistant Professor (Mathematics department, RSAPS)

YEAR: 2022

Anusmaha Devi

Dean, RSAPS
The Assam Royal Global University

DECLARATION

I, RN Michael, bearing Roll no. 204011009 , a student of M.Sc. Mathematics under Royal School of Applied and Pure Sciences, hereby declare that this Final Semester Project Report/Dissertation entitled *A comparative study of MHD and without MHD on unsteady flow with slip condition and mass transfer effect* is a bonafide project work undertaken by me, during the period of March 2022 to July 2022, as partial fulfillment of the requirements of the degree of M.Sc. Mathematics of The Assam Royal Global University, Guwahati.

Further, I declare that this report has not been submitted by me elsewhere for the award of any degree/diploma/certificate and not linked to any other qualification.

Michael

SIGNATURE

RN MICHAEL

Date: 30-07-22

Place: Guwahati

Registration no. 1201046

ROLL NO. 204011009

Anusudha Devi
Dean, RSAPS
The Assam Royal Global University



THE ASSAM
ROYAL GLOBAL UNIVERSITY

CERTIFICATE

This is to certify that the project report entitled "*A comparative study of MHD and without MHD in unsteady flow with slip condition and mass transfer effect*" submitted by R.N Michael, a student of M.Sc. Mathematics bearing Roll No '204011009 and Registration No. 1201046 to The Assam Royal Global University, Guwahati in partial fulfillment for the award of the degree of Master of Science in Mathematics is a bonafide record of project work carried out by him under my supervision and guidance.

The contents of this report, in full or in parts, have not been submitted to any other Institution or University for the award of any degree or diploma.

Anuja Sinha

Dr. Anuja Sinha

Assistant Professor

Mathematics Department

RSAPS

The Assam Royal Global University

Date: 30-07-22

Place: Guwahati.

Kamal Subnath
05/08/2022
Head Department of Mathematics
The Assam Royal Global University

Anuradha Das

Dean, RSAPS

The Assam Royal Global University

**NON-NEWTONIAN SHEAR-THINNING FLOW AND
HEAT TRANSPORT OF PUMMELO JUICE OVER A STRETCHING
SURFACE BY POWER-LAW FLUID MODEL**

*A Project Report submitted for the Major Project (MAT014C421)
in partial fulfillment of requirements for the degree of Master of Science in
Mathematics*

Under



TITE ASSAM

ROYAL GLOBAL UNIVERSITY

Offered by-

ROYAL SCHOOL OF APPLIED & PURE SCIENCES

Submitted by-

Name: Pratiksha Borah

Registration No.: 1201044

Roll No. 204011007

Academic Project Guide-

Name: Dr. Kamal Debnath

Designation: Associate Professor & HoD

Department & School: Mathematics, RSAPS

Anuradha Devi

Dean, RSAPS
The Assam Royal Global University



ROYAL GLOBAL UNIVERSITY
GUWAHATI

ROYAL SCHOOL OF APPLIED & PURE SCIENCES
DEPARTMENT OF MATHEMATICS

DECLARATION

I, Pratiksha, bearing Roll No. 204011007, a student of Department of Mathematics under Royal School of Applied & Pure Sciences, hereby declare that this project report for the Major Project (MAT014C421) of M.Sc. 4th semester entitled "Non-Newtonian Shear-Thinning Flow and Heat Transport of Pummelo Juice over a Stretching Surface by Power-Law Fluid Model" is a bona fide project work undertaken by me under the supervision of Dr. Kamal Debnath, during the period February, 2022 to July, 2022, as partial fulfilment of the requirements of the degree of Master of Science in Mathematics of The Assam Royal Global University, Guwahati.

Further, I declare that this report or a part of it has not been submitted by me elsewhere for the award of any degree or diploma and not linked to any other qualification.

Pratiksha Borah
(PRATIKSHA BORAH)

Date: 30/7/22

Registration No.: 1201044

Place: Guwahati

Roll No.: 204011007

Anumolha Devi
Dean, RSAPS
The Assam Royal Global University



ROYAL GLOBAL UNIVERSITY
GUWAHATI

ROYAL SCHOOL OF APPLIED & PURE SCIENCES
DEPARTMENT OF MATHEMATICS

CERTIFICATE

This is to certify that the project report for the Major Project (MAT014C421) entitled “**Non-Newtonian Shear-Thinning Flow and Heat Transport of Pummelo Juice over a Stretching Surface by Power-Law Fluid Model**” submitted by Pratiksha Borah, a student of M.Sc. Mathematics 4th semester bearing Roll No. 204011007 and Registration No. 1201044 to The Assam Royal Global University, Guwahati in partial fulfillment for the award of the degree of Master of Science in Mathematics is a bona fide record of project work carried out by her under my supervision and guidance.

The contents of this report, in full or in parts, have not been submitted to any other Institution or University for the award of any degree or diploma.

Place: *Guwahati*
Date: *05/08/2022*

Kamal Debnath
05/08/2022
(Kamal Debnath)
Associate Professor & HOD,
Department of Mathematics,
Royal School of applied & Pure Sciences,
The Assam Royal Global University,
Guwahati-781014.

Anuradha Dey

Dean, RSAPS
The Assam Royal Global University