

A PROJECT REPORT

**“N₂O₂- Chelate Metal Complexes With Schiff
Base Ligand Synthesis & Characterisation”**

SUBMITTED TO



**KAVAYITRI BAHINABAI CHAUDHARI NORTH MAHARASHTRA
UNIVERSITY, JALGAON**

FOR THE PARTIAL FULFILMENT FOR THE AWARD OF THE DEGREE OF

MASTER OF SCIENCE

IN

ORGANIC CHEMISTRY

BY

MR. BARI DEVENDRA DIGAMBAR

MR. SURWADE KIRAN KADUBA

MR. PATIL HARSHAL MADHUKAR

MS. GAYKWAD PRATIKSHA ARJUN

MS. ZOPE JAYA KAILAS

UNDER THE GUIDANCE OF

Mrs V.D.MANVATKAR

**G.D.M.ARTS ,K.R.N.COMMERCE & M.D.SCIENCE COLLEGE,
JAMNER , DIST-JALGAON**

" 2022-23



CERTIFICATE

This is to certify that the project " N_2O_2 -Chelate Metal Complexes With Schiff Base Ligand ; Synthesis & Characterisation" Submitted by **Mr Bari Devendra Digambar, Mr Surwade Kiran Surwade, Mr Patil Harshal Madhukar, Ms Gaykwad Pratiksha Arjun and Ms Zope Jaya Kailas** for the partial fulfilment for the Award of the degree of master of science inorganic chemistry has been carried out under my guidance and supervision at the department of organic chemistry, G.D.M. Arts, K.R.N. Commerce and M. D. Science College, Jamner, during the academic year **2022-23** and submitted the same.

Place: Jamner

Date: 25/06/2023


Mrs V.D. Manvatkar
Research Supervisor


Prof. S.L. Vispute
Head, Dept. of Chemistry
G.D.M. Arts, K.R.N. Commerce &
M.D. Science College, Jamner


Internal Examiner

CERTIFIED
05 JUN 2023


External Examiner


Principal,
G.D.M. Arts, K.R.N. Commerce &
M.D. Science College, Jamner

A
Research project work
Entitled

"Reactivity of Tyrosine for synthesis of Azo dyes"



KAVAYATRI BAHINABAI CHAUDHARI NORTH
MAHARASHTRA UNIVERSITY, JALGAON

In partial fulfillment of the requirement
of the degree of

Master of Science
in
Organic Chemistry

PRESENTED BY

Miss.Chetana Nandkishor Morankar.

Miss.Rita Ravindra Patil.

Miss. Harshada Vilas Sonawane.

Miss. Jagruti Vijay Rajput.

**UNDER
GUIDENCE OF**

Miss. Rohini Patil

M.Sc.

Assistant Professor, Department of chemistry
To,

G.D.M ARTS. K.R.N. COMMERCE AND M.D. SCIENCE COLLAGE

JAMNER, DIST – JALGAON

2022-2023

CERTIFICATE

This is to certify that Miss.Chetana Morankar , Miss.Rita patil , Miss Harshada Sonawane, Miss.Jagruti Rajput , has completed their project work entitled "**Reactivity of Tyrosine for synthesis of Azo dyes**" for partial fulfillment of Degree of Master of Science in Chemistry under our guidance and supervision at Department of Chemistry at GDMArts, KRN Commerce And MD science college jamner, Jalgaon for the year 2022-2023

Date : 5/6/2023

Place : Jamner

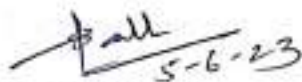


Miss. Rohini Patil
Research Supervisor



Prof. S.L. VISPATE

Head Dept. of Chemistry
G.D.M Arts, K.R.N Commerce &
M.D Science College, Jamner



Internal Examiner



Principal,
G.D.M Arts, K.R.N Commerce
& M.D Science College,
Jamner

CERTIFIED

05 JUN 2023



External Examiner

A
Research project work
Entitled

**"Synthesis of polysubstituted pyridines by using cerium (IV)
carboxymethyl cellulose as an reusable catalyst"**



KAVAYATRI BAHINABAI CHAUDHARI NORTH
MAHARASHTRA UNIVERSITY, JALGAON

In partial fulfillment of the requirement
of the degree of

Master of Science
in

Organic Chemistry

PRESENTED BY

Mr.Chetan Shankar Patil

Mr.Yashodip Sudhakar Patil

Mr. Chandrakant Sumersing Patil

Mr.Shivam Kailas Patil

**UNDER
GUIDENCE OF**

Pro.V.D Manyatkar

Professor, Department of chemistry
To,

G.D.M ARTS, K.R.N, COMMERCE AND M.D. SCIENCE COLLAGE

JAMNER, DIST – JALGAON

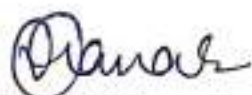
2022-2023

CERTIFICATE

This is to certify that Mr.Chetan Patil,Yashodip Patil,Chandrakant Patil,Shivam Patil, has completed their project work entitled "**Synthesis of polysubstituted pyridines by using cerium (IV) carboxymethyl cellulose as an reusable catalyst**" for partial fulfillment of Degree of Master of Science in Chemistry under our guidance and supervision at Department of Chemistry at GDMArts, KRN Commerce And MD science college jamner, Jalgaon for the year 2022-2023

Date : / /2023

Place : Jamner

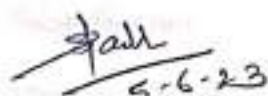


Pro.V.D Manvadkar
Research Supervisor



Prof. S.L. VISPUTE

Head Dept. of Chemistry
G.D.M Arts, K.R.N Commerce &
M.D Science College, Jamner



Internal Examiner

CERTIFIED

05 JUN 2023



Principal,
G.D.M Arts, K.R.N Commerce
& M.D Science College,
Jamner



External Examiner

A Short Research Project on

"Synthesis, Characterization of Some Schiff Base in Bidentate Ligand and Metal Complexes"



**Kavayatri Bahinabai Chaudhari
North Maharashtra University, Jalgaon**

MASTER OF SCIENCE in ORGANIC CHEMISTRY

By

Mr. Khairnar Lalit Dnyaneshwar

Mr. Mali Samadhan Vitthal

Mr. Patil Prashant Valmik

Mr. Pinjari Shakil Kadir

Under the Guidance of

Ms. Rohini Patil

A Project Work submitted to the
DEPARTMENT OF CHEMISTRY



**GITABAI DATTATRAY MAHAJAN ARTS, SHRI. KESHARIMAL RAJMAL
NAVALAKHA COMMERCE & MANOHARSETH DHARIWAL SCIENCE COLLEGE**

2023



**GITABAI DATTATRAY MAHAJAN ARTS, SHRI. KESHARIMAL
RAJMAL NAVALAKHA COMMERCE & MANOHARSETH
DHARIWAL SCIENCE COLLEGE**

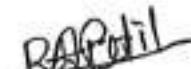


This is to certify that the contents of this short research project entitled "Synthesis, Characterization of Some Bidentate Ligands and Metal complexes " is the Project work **Mr.Khairnar Lalit Dnyaneshwar, Mr.Mali Samadhan Vitthal, Mr. Patil Prashant Valmik, Mr.Pinjari Shakil Kadir.** I In partial fulfillment the requirements for the award of **Master of Science** Degree in chemistry with specialization in "**Organic Chemistry**" at the GITABAI DATTATRAY MAHAJAN ARTS, SHRI. KESHARIMAL RAJMAL NAVALAKHA COMMERCE & MANOHARSETH DHARIWAL SCIENCE COLLEGE, under **Kavayatri Bahinabai Chaudhari, North Maharashtra University Jalgaon** is an authentic work carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the short research project has not been submitted to any other University / Institute for the award of any Degree.

Date : 05/06/2023

Place : Jamner



Prof. Dr. A.R. Patil
Principal


Miss. Rohini Patil
Research guide

CERTIFIED

05 JUN 2023


Internal Examiner


Dr. S.L.Vispute
Head Department Of Chemistry


Project Examiner

A Research project work
Entitled

**"ABSTRACTION OF ANTHOCYANIN FROM
Hibiscus Rosa Sinensis FLOWER"**

SUBMITTED TO



**KAVAYATRI BAHINABAI CHAUDHARI
NORTH MAHARASHTRA UNIVERSITY,
JALGAON**

In partial fulfillment of the requirement
of the degree of

Master of Science

In

Organic Chemistry

Under the supervision of
Prof.Ms. R.A.Patil

By

**Miss.Vaishali Bhoi
Miss.Poonam Kumavat
Miss.Kalyani Patil
Miss.Vaishali Jamadar
Miss.Gayatri Chaudhari**

To,

**G.D.M ARTS, K.R.N. COMMERCE AND M.D. SCIENCE COLLAGE
JAMNER, DIST – JALGAON**

2022-2023

G.D.M. ARTS, K.R.N COMMERCE AND MD SCIENCE COLLEGE
JAMNER-424206

CERTIFICATE

This is to certify that Miss.Vaishali Bhoi , Miss.Poonam Kumavat , Miss.kalyani Patil , Miss.Vaishali Jamadar , Miss.Gayatri Chaudhari has completed their project work entitled "ABSTRACTION OF ANTHOCYANIN FROM Hibiscus Rosa Sinensis FLOWER" for partial fulfillment of Degree of Master of Science in Chemistry under our guidance and supervision at Department of Chemistry at GDM Arts, KRN Commerce And MD science college jamner, Jalgaon for the year 2022-2023

Date : / /2023Palce

: Jamner

Patil

Miss.R.A.Patil
Reaserch Supervisor

S.L. VISPUTE
5-2-23

Prof. S.L.VISPUTE
Head Dept. of Chemistry
G.D.M Arts, K.R.N Commerce &
M.D Science College, Jamner

CERTIFIED

05 JUN 2023

Patil
5-6-23

Internal Examiner

Patil
06/06/2023

External Examiner

Patil

Principal,
G.D.M Arts, K.R.N Commerce &
M.D Science College, Jamner

A Project report on

**"Synthesis of Imidazole Derivatives by using Acetic Acid Solvent
As Well As Catalyst"**

Submitted To,



Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

The Partial Fulfilment For The Award Of Degree Of

Master Of Science

In

Organic Chemistry

By

Mr. Kalpesh Kamalakar Patil

Mr. Vivek Pundalik Patil

Mr. Harshal Kalyan Patil

Mr. Bhavesh Sudam Patil

Under the guidance of

Prof. Chetan P Patil



**Gitabai Dattatraya Mahajan Arts, Shri Keshvrimal Rajmal Navlkha
Commerce & Manoharseth Dhariwal Science Collage, Jamner.**

Academic Year 2022-23.

CERTIFICATE

This is to certify that the completed their project work entitled "**Synthesis of Imidazole Derivatives by using Acetic Acid Solvent as well as Catalyst**" for partial fulfillment of Degree of Master of Science in Chemistry under our guidance and supervision Prof. Chetan P Patil at GDM Arts, KRN Commerce & MD Science Collage, Jamner.

Place : Jamner

Date : 05/06/2023



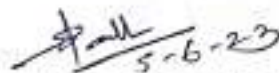
Prof. Chetan P Patil
(project Supervisor)



Prof. S.L. Vispute

(Head Dept. Of Chemistry)

GDM Arts, KRN Commerce,
MD Science Collage, Jamner



Internal Examiner

CERTIFIED

05 JUN 2023



External Examiner



Dr. A.R. Patil
(Principal)

GDM Arts, KRN Commerce,
MD Science Collage, Jamner

A Project report entitled

“TiO₂ and SnO₂ thick films: Preparation and Characterization”

Submitted to

**Kavayitri Bahinabai Chaudhari North Maharashtra
University, Jalgaon**

for the Degree of

**Bachelor of Science
in
Physics**

-: Submitted By:-

Mr. Himanshu Mahendra Saraswat

Mr. Vishal Sanjay Bodhare

And

Mr. Shubham Ganesh Mali

-: Guided by:-

Dr. R. S. Khadayate

Professor and Head

Department of Physics

G. D. M. Arts, K. R. N. Comm. and M. D. Science college, Jamner

Year 2022-2023



CERTIFICATE

This is to certify that **Mr. Himanshu Mahendra Saraswat / Mr. Vishal Sanjay Bodhare / Mr. Shubham Ganesh Mali** has done partial work satisfactorily on the project entitled **"TiO₂ and SnO₂ thick films: Preparation and Characterization"** under my supervision for the partial fulfillment of *Bachelor of Science Degree in Physics* of North Maharashtra University, Jalgaon in the academic year 2022-2023.

Dr. R. S. Khadayate

(Project Guide)

Dr. R. S. Khadayate

(Head Of Department)

CERTIFIED

Internal Examiner
21/04/2023

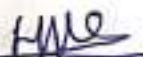

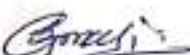
8 APR 2023

External Examiner

DECLARATION

We hereby declare that the project report is based on the results found by ourselves. Materials of work found are mentioned by reference. This project report, neither in whole nor in part, has been previously submitted for any degree in our college.

Name and Signature of Students:

1. Mr. Himanshu Mahendra Saraswat 
2. Mr. Vishal Sanjay Bodhare 
- And
3. Mr. Shubham Ganesh Mali 

Jamner Taluka Education Society's
Nacc Reaccredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshrimal Rajmal Navlakkha Commerce and
Manoharsheth Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE


Exam Seat No : _____

This is to certify that,

Mr./Miss. Karuna Subhash Ahire

Of ~~FYBA~~ / ~~FYBCOM~~ / ~~FYBSC~~ / ~~FYBCA~~ / ~~FYBBA~~ Roll No:
84 has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bahinabai Chaudhari North Maharashtra University, Jalgaon For the academic
year -2022-23

Viva / Field work Guide /


Dr. Amar A. Pawar
Env. Coordinator

Jamner Taluka Education Society's
Nace Reaccredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshirimal Rajmal Navlakkha Commerce and
Manoharshethi Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE


Exam Seat No : 321089

This is to certify that,

Mt./Miss. Tayade Mayuri Bhagwat

Of FYBA / FYBCOM / FYBSC / FYBCA / FYBBA Roll No:
23 has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bahinabai Chaudhari North Maharashtra University, Jalgaon For the academic
year -2022-23

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Dr. Amar A. Pawar
Env. Coordinator

Jamner Taluka Education Society's
Nacc Reaccredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshirimal Rajmal Navlakkha Commerce and
Manoharshethi Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE

Exam Seat No: 321082

This is to certify that,

Mr./Miss. Vaishnavi Sanjaysing Rajput.

of FYBA / FYBCOM / FYBSC / FYBCA / FYBBA Roll No:
61 has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bahinabai Chaudhari North Maharashtra University, Jalgaon For the academic
year -2022-23

Kanware
05/04/2023

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Pawar

Dr. Amar A. Pawar
Env. Coordinator

Jamner Taluka Education Society's

Nacc Reaccredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshrimal Rajmal Navlakkha Commerce and
Manoharsheth Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE


Exam Seat No: 321076

This is to certify that,

Mr./Miss. Ashvini Siyaram Pawar

Of FYBA / FYBCOM / ☒ FYBSC / FYBCA / FYBBA Roll No:
83 has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bahinabai Chaudhari North Maharashtra University, Jalgaon For the academic
year-2022-23

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Dr. Amar A. Pawar
Env. Coordinator

Jamner Taluka Education Society's

Nacc Reaccredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshirimal Rajmal Navlakkha Commerce and
Manoharshethi Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE


Exam Seat No: 321062

This is to certify that,

Mr./Miss. Mohini Ramdas Mali

of ~~FYBA~~ / ~~FYBCOM~~ / ~~FYBSC~~ / ~~FYBCA~~ / ~~FABBA~~ Roll No:
107 has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bahinabai Chaudhari North Maharashtra University, Jalgaon For the academic
year -2022-23

~~Amara~~
05/04/2023
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Dr. Amar A. Pawar
Env. Coordinator

Jamner Taluka Education Society's
Nacc Reaccredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshrimal Rajmal Navlakkha Commerce and
Manoharsheth Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE


Exam Seat No : 321033

This is to certify that,

Mr./Miss. Monika Govinda Chaudhari

Of ~~FYBA~~ / ~~FYBCOM~~ / ~~FYBSC~~ / ~~FYBCA~~ / ~~FYBBA~~ Roll No:
66 has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bhabinabai Chaudhari North Maharashtra University, Jalgaon For the academic
year-2022-23

Karwane
18/04/2023
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Dr. Amar A. Pawar
Env. Coordinator

Jamner Taluka Education Society's

Nacc Reaccredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshrimal Rajmal Navlakkha Commerce and
Manoharsheth Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE

Exam Seat No : -----

This is to certify that,

Mr./Miss. Shubhangi puna bhoi

Of FYBA / FYBCOM / FYBSC / FYBCA / FYBBA Roll No:

80 has satisfactorily carried out field work in the subject

Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri

Bahinabai Chaudhari North Maharashtra University, Jalgaon For the academic

year-2022-23

~~Amara~~
08/04/2023

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Pawar

Dr. Amar A. Pawar

Env. Coordinator

Jamner Taluka Education Society's
Nacc Reaccredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshrimal Rajmal Navlakkha Commerce and
Manoharshethi Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE


Exam Seat No: _____


This is to certify that,

Mr./Miss. Pranali Vikas Bhadange

Of FYBA / FYBCOM / ~~FYBSC~~ / FYBCA / FYBBA Roll No:
45

has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bhabinabai Chaudhari North Maharashtra University, Jalgaon For the academic
year -2022-23


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Dr. Amar A. Pawar
Env. Coordinator

Jamner Taluka Education Society's
Nacc Accredited B++ Grade
Gitabai Dattatray Mahajan Arts, Keshrimal Rajmal Navlakkha Commerce and
Manoharsheth Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE

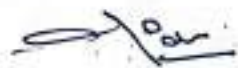
Exam Seat No: 321036

This is to certify that,

Mr./Miss. Nandini Ashok Chavhan

Of ~~FYBA~~ / ~~FYB COM~~ / ~~FYBSC~~ / ~~FYBCA~~ / ~~FYBBA~~ Roll No:
43 has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bahinabai Chaudhari North Maharashtra University, Jalgaon For the academic
year-2022-23

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Dr. Amar A. Pawar
Env. Coordinator

Jamner Taluka Education Society's

Nacc Reaccredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshirimal Rajmal Navlakkha Commerce and
Manoharshiethi Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE

Exam Seat No : _____

This is to certify that,

Mr./Miss. Nayan Ananda Khawade

Of FYBA / FYBCOM / FYBSC / FYBCA / FYBBA Roll No:
06 has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bhainabai Chaudhari North Maharashtra University, Jalgaon For the academic
year-2022-23

Nayan
05/04/2023

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Dr. Amar A. Pawar
Env. Coordinator

Jamner Taluka Education Society's

Nacc Reaccredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshrimal Rajmal Navlakkha Commerce and
Manoharsheth Dhariwal Science College Jamner Dist-Jalgaon


CERTIFICATE

Exam Seat No: 321044

This is to certify that,

Mr./Miss. Gayakwad Rutuja Mahilal

Of FYBA / FYBCOM / FYBSC / FYBCA / FYBBA Roll No:
16 has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bahinabai Chaudhari North Maharashtra University, Jalgaon For the academic
year -2022-23


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Dr. Amar A. Pawar
Env. Coordinator

Jamner Taluka Education Society's

Nacc Accredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshrimal Rajmal Navlakkha Commerce and
Manoharsheth Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE

Exam Seat No : 221057

This is to certify that;

Mr./Miss. Priya Pitambar Khatik

Of FYBA / FYBCOM / FYBSC / FYBBA / Roll No: 04
has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bahinabai Chaudhari North Maharashtra University, Jalgaon For the academic
year -2022-23

[Signature]
05/04/2023

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[Signature]
Dr. Amar A. Pawar
Env. Coordinator

Jamner Taluka Education Society's
Nacc Reaccredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshrimal Rajmal Navlakkha Commerce and
Manoharshethi Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE


Exam Seat No : 321045

This is to certify that,

Mr./Miss. Ghadage Kumud Vinod

Of FYBA / FYBCOM / FYBSC / FYBCA / FYBBA Roll No:
77 has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bhabinabai Chaudhari North Maharashtra University, Jalgaon For the academic
year -2022-23

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Dr. Amar A. Pawar
Env. Coordinator

Jamner Taluka Education Society's
Nacc Reaccredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshrimal Rajmal Navlakhia Commerce and
Manoharshethi Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE

Exam Seat No : -----

This is to certify that,

Mr./Miss. Dhangar puja vinod

Of FYBA / FYBCOM / FYBSC / FYBCA / FYBBA Roll No:
82 has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bahinabai Chaudhari North Maharashtra University, Jalgaon For the academic
year -2022-23

~~Jamner~~ 25/04/2023
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Dr. Amar A. Pawar
Env. Coordinator

Jamner Taluka Education Society's
Nacc Reaccredited B++ Grade

Gitabai Dattatray Mahajan Arts, Keshriyal Rajmal Navlakkha Commerce and
Manoharshethi Dhariwal Science College Jamner Dist-Jalgaon

CERTIFICATE

Exam Seat No : _____

This is to certify that,

Mr./Miss. Shubham Devidas Indalkar

Of FYBA / FYBCOM / FYBSC / FYBCA / FYBBA Roll No:
33 has satisfactorily carried out field work in the subject
Environmental studies (UGC Course) as laid down in the regulation of Kaviyatri
Bahinabai Chaudhari North Maharashtra University, Jalgaon For the academic
year -2022-23

Signature
05/04/2023

Viva / Field work Guide /

Dr. Amar A. Pawar
Env. Coordinator



॥ अतरी पेटवू ज्ञानज्योत ॥

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव

Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

अभ्यास मंडळ विभाग

जा.क्र. : उमवि/२१/Environmental Studies/५२/२०१८

दिनांक:- २२/११/२०१८

प्रति,

क.ब.चौ.उमविशौ संलग्न सर्व महाविद्यालयांचे मा.प्राचार्य

व मान्यता प्राप्त परिसंस्थांचे मा. संचालक आणि

मा.विभाग प्रमुख विद्यापीठ शैक्षणिक प्रशाळा / विभाग यांना...

विषय :- Environmental Studies या विषयाचे अभ्यासक्रमा संदर्भात.

महोदय / महोदया,

उपरोक्त विषयांस अनुसरून आपणांस कळविण्यात येते की, मा.सर्वोच्च न्यायालयाचे निर्णयानुसार पर्यावरण संतुलन राखण्यासाठी प्रथम वर्षास प्रवेशित विद्यार्थ्यांसाठी सहा महिन्यांचा पर्यावरणशास्त्र विषयाचा अभ्यासक्रम जून, २००४ पासून सर्व विद्याशाखांमध्ये समाविष्ट करण्यात आलेला आहे.

शैक्षणिक वर्ष २०१८-१९ पासून प्रथम वर्ष कला विज्ञान व वाणिज्य वर्गांना Choice Based Credit System लागू करण्यात आलेली असल्याने Environmental Studies या विषयाचा अभ्यासक्रम Ability Enhancement Course अंतर्गत Choice Based Credit System प्रमाणे तयार करणेसाठी नियुक्त समितीच्या सभेत Environmental Studies विषयाच्या गुणांची विभागणी (Marks Pattern) देखील ६०:४० प्रमाणे करण्यात यावी, व गुणांकन (Marks Pattern) पुढील प्रमाणे करण्यात यावे, असे ठरले आहे.

लेखी परीक्षा (Theory)

६० गुण

अंतर्गत (Internal) परीक्षा फिल्ड वर्क / व्हायवा

४० गुण

एकूण १०० गुण

अंतर्गत ४० गुणांची विभागणी पुढील प्रमाणे करण्यात यावी.

उपस्थिती (Attendance)

०५ गुण

वर्तणूक (Behaviour)

०५ गुण

व्हायवा (Viva-voce)

१० गुण

फिल्ड वर्क (Report of field Work)

२० गुण

४० गुण

त्यानुषंगाने Environmental Studies या विषयाचा अभ्यासक्रम विद्यापीठ अनुदान आयोगाने दिलेला असून तो जसाचे तसा लागू करण्यात आलेला असल्याने अभ्यासक्रमात बदल न करता अभ्यासक्रम तोच ठेवण्यात आला आहे. सदरचा अभ्यासक्रम उमविच्या संकेत स्थळावर अपलोड करण्यात आला आहे. तरी वरील आशय सर्व संबंधित प्राध्यापक व विद्यार्थी यांचे निदर्शनास आणून देवून पुढील योग्य ती कार्यवाही करून विद्यापीठास सहकार्य करावे, ही विनंती.

म.फळावे,

आपला विश्वासू,


(ए.सी.मनो)

उपकुलसचिव

अभ्यास मंडळ विभाग

**Six Months Module Syllabus
for
Environmental Studies
for
Under Graduate Courses**



**UNIVERSITY GRANTS COMMISSION
BAHADURSHAH ZAFAR MARG
NEW DELHI- 110 002**

2003

CORE MODULE SYLLABUS FOR ENVIRONMENTAL STUDIES
FOR UNDER GRADUATE COURSES OF ALL BRANCHES
OF HIGHER EDUCATION

Vision

The importance of environmental science and environmental studies cannot be disputed. The need for sustainable development is a key to the future of mankind. Continuing problems of pollution, loss of forest, solid waste disposal, degradation of environment, issues like economic productivity and national security, Global warming, the depletion of ozone layer and loss of biodiversity have made everyone aware of environmental issues. The United Nations Conference on Environment and Development held in Rio de Janeiro in 1992 and world Summit on Sustainable Development at Johannesburg in 2002 have drawn the attention of people around the globe to the deteriorating condition of our environment. It is clear that no citizen of the earth can afford to be ignorant of environment issues. Environmental management has captured the attention of health care managers. Managing environmental hazards has become very important.

Human beings have been interested in ecology since the beginning of civilization. Even our ancient scriptures have emphasized about practices and values of environmental conservation. It is now even more critical than ever before for mankind as a whole to have a clear understanding of environmental concerns and to follow sustainable development practices.

India is rich in biodiversity which provides various resources for people. It is also basis for biotechnology.

Only about 1.7 million living organisms have been described and named globally. Still many more remain to be identified and described. Attempts are made to

conserve them in ex-situ and in-situ situations. Intellectual property rights (IPRs) have become important in a biodiversity-rich country like India to protect microbes, plants and animals that have useful genetic properties. Destruction of habitats, over-use of energy resource and environmental pollution have been found to be responsible for the loss of a large number of life-forms. It is feared that a large proportion of life on earth may get wiped out in the near future.

In spite of the deteriorating status of the environment, study of environment has so far not received adequate attention in our academic programmes. Recognizing this, the Hon'ble Supreme Court directed the UGC to introduce a basic course on environment at every level in college education. Accordingly, the matter was considered by UGC and it was decided that a six months compulsory core module course in environmental studies may be prepared and compulsorily implemented in all the University/Colleges of India.

The experts committee appointed by the UGC has looked into all the pertinent questions, issues and other relevant matters. This was followed by framing of the core module syllabus for environmental studies for undergraduate courses of all branches of Higher Education. We are deeply conscious that there are bound to be gaps between the ideal and real. Genuine endeavour is required to minimize the gaps by intellectual and material inputs. The success of this course will depend on the initiative and drive of the teachers and the receptive students.

SYLLABUS

Unit 1 : Multidisciplinary nature of environmental studies

Definition, scope and importance

(2 lectures)

Need for public awareness.

Unit 2 : Natural Resources :

Renewable and non-renewable resources :

Natural resources and associated problems.

- a) Forest resources : Use and over-exploitation, deforestation, case studies.
Timber extraction, mining, dams and their effects on forest and tribal people.
 - b) Water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
 - c) Mineral resources : Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
 - d) Food resources : World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
 - e) Energy resources : Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies.
 - f) Land resources : Land as a resource, land degradation, man induced landslides, soil erosion and desertification.
- Role of an individual in conservation of natural resources.
 - Equitable use of resources for sustainable lifestyles.

(8 lectures)

Unit 3 : Ecosystems

- Concept of an ecosystem.

- Structure and function of an ecosystem.
- Producers, consumers and decomposers.
- Energy flow in the ecosystem.
- Ecological succession.
- Food chains, food webs and ecological pyramids.
- Introduction, types, characteristic features, structure and function of the

following ecosystem :-

- a. Forest ecosystem
- b. Grassland ecosystem
- c. Desert ecosystem
- d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

(6 lectures)

Unit 4 : Biodiversity and its conservation

- Introduction – Definition : genetic, species and ecosystem diversity.
- Biogeographical classification of India
- Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values
- Biodiversity at global, National and local levels.
- India as a mega-diversity nation

- Hot-spots of biodiversity.
- Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts.
- Endangered and endemic species of India
- Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.

(8 lectures)

Unit 5 : Environmental Pollution

Definition

- Cause, effects and control measures of :-
 - a. Air pollution
 - b. Water pollution
 - c. Soil pollution
 - d. Marine pollution
 - e. Noise pollution
 - f. Thermal pollution
 - g. Nuclear hazards
- Solid waste Management : Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution.
- Pollution case studies.
- Disaster management : floods, earthquake, cyclone and landslides.

(8 lectures)

Unit 6 : Social Issues and the Environment

- From Unsustainable to Sustainable development
- Urban problems related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people; its problems and concerns. Case Studies
- Environmental ethics : Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment Protection Act.
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and control of Pollution) Act
- Wildlife Protection Act
- Forest Conservation Act
- Issues involved in enforcement of environmental legislation.
- Public awareness.

(7 lectures)

Unit 7 : Human Population and the Environment

- Population growth, variation among nations.
- Population explosion – Family Welfare Programme.

- Environment and human health.
- Human Rights.
- Value Education.
- HIV/AIDS.
- Women and Child Welfare.
- Role of Information Technology in Environment and human health.
- Case Studies.

(6 lectures)

Unit 8 : Field work

- Visit to a local area to document environmental assets-
river/forest/grassland/hill/mountain
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural
- Study of common plants, insects, birds.
- Study of simple ecosystems-pond, river, hill slopes, etc. (Field work Equal to 5
lecture hours)

SIX MONTHS COMPULSORY CORE MODULE COURSE IN
ENVIRONMENTAL STUDIES : FOR UNDERGRADUATES

Teaching Methodologies

The core Module Syllabus for Environment Studies includes class room teaching and Field Work. The syllabus is divided into eight units covering 50 lectures. The first seven units will cover 45 lectures which are class room based to enhance knowledge skills and attitude to environment. Unit eight is based on field activities which will be covered in five lecture hours and would provide student first hand knowledge on various local environmental aspects. Field experience is one of the most effective learning tools for environmental concerns. This moves out of the scope of the text book mode of teaching into the realm of real learning in the field, where the teacher merely acts as a catalyst to interpret what the student observes or discovers in his/her own environment. Field studies are as essential as class work and form an irreplaceable synergistic tool in the entire learning process.

Course material provided by UGC for class room teaching and field activities be utilized.

The universities/colleges can also draw upon expertise of outside resource persons for teaching purpose.

Environmental Core Module shall be integrated into the teaching programmes of all undergraduate courses.

Annual System : The duration of the course will be 50 lectures. The exam will be conducted along with the Annual Examination.

Semester System : The Environment course of 50 lectures will be conducted in the second semester and the examination shall be conducted at the end of the second semester.

Credit System : The course will be awarded 4 credits.

Exam Pattern : In case of awarding the marks, the question paper should carry 100 marks. The structure of the question paper being :

Part-A, Short answer pattern	-	20 marks
Part-B, Essay type with inbuilt choice	-	40 marks
Part-C, Field Work	-	40 marks

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(M) Magazine

(R) Reference

(TB) Textbook

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