

OFFICE OF THE PRINCIPAL GOALPARA COLLEGE, GOALPARA

An ISO 9001:2015 Certified Institution

Affiliated to Gauhati University, Guwahati, Assam

The College is covered under Section 2(f) and 12(B) of the UGC Act, 1956

P.O. : Goalpara, Dist. : Goalpara, (Assam) Pin : 783101

Dr. Subhash Barman, M.A. Ph.D

Principal & Secretary

Goalpara College, Assam

Phone No : 03663-240046

Mobile No. : 7399002231

E-mail : goalparacollege55@gmail.com

Website : www.goalparacollege.ac.in

No : GC/

Date :

Certificate course on “Python Programming”

Organised by: Department of Physics

Goalpara College

From 07 December 2021 to 13 December 2021

Summary of the course

The Department of Physics of Goalpara College has organised a 36 hour long certificate course on Python Programming starting from 7th December to 13th December of 2021. This workshop was carried out under the guidance of Dr. Subhash Barman (Principal) and Dr. Ranjit Choudhury (HoD, Physics Department). The course coordinator of this workshop was Dr. Manjit Borah and the course supervisors cum instructors were Dr. Yoshiko Bailung and Dr. Bijay Kumar Sah. Over 100+ students enrolled in the Workshop from different colleges and universities like Bhattadev University, Dudhnoi college, West Goalpara college and Goalpara college.

Course Objectives and Outcomes

Python is a widely used high-level programming language. Google makes extensive use of Python in its web search system, and employs Python's creator. Intel, Cisco, Hewlett-Packard, Seagate, Qualcomm, and IBM use Python for hardware testing. The YouTube video sharing service is largely written in Python. The design of Python basically emphasizes code readability, and programmers find its syntax easy to express concept in fewer lines of code than would be possible in other languages like Java, C or C++. This language provides constructs that are intended to enable clear programs on a small as well as on a large scale. Python supports multiple programming paradigms, including object-oriented, imperative and functional programming or procedural styles. It features a dynamic type system and automatic memory management and has a large and comprehensive standard library. Python interpreters are available for installation on many operating systems, allowing Python code execution on a wide variety of systems.

The aim of this course was to provide a basic understanding of the python programming language. The course was designed in such a way that the students could read and write codes of their own by the end of the course. The basics that was covered during the course included installation, variables and data types, list, dictionaries, loops, functions, etc. Apart from that the course also included various computational methods to solve scientific and physical problems such as Newton Raphson method, Euler method, Simpson 1/3 rule, Runge-Kutta method etc. All the coding was done in the Spyder Integrated Development Environment (IDE). This IDE comes with Anaconda Navigator. It includes editing, interactive testing, debugging, and introspection features. Conclusively it is desirable to use Python as the principal teaching language as it is free from both source code and cost perspective. It is also trivial to install on a Windows PC and is flexible as it allows both traditional procedural programming and modern object orient programming. At the end quicker to learn and in combination with its many libraries, this offers the possibility of more rapid student development.



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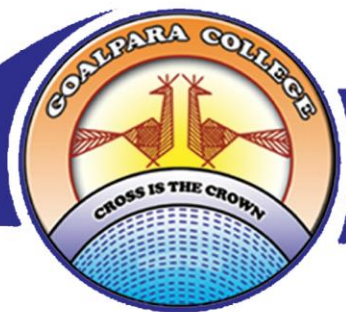
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Course Layout

| DAY 1 | |
|----------------|--|
| Time | Theme |
| 10.00-11.15 am | Registration and Inaugural session/Opening Remarks |
| 11.15-11.30 am | Break |
| 11.30-12.45 am | Getting Started (Introduction & Installation) |
| 12.45-1.30 pm | Refreshment |
| 1.30-2.45 pm | Variables and Simple data types –I |
| 2.45-3.00 pm | Break |
| 3.00-4.15 pm | Variables and Simple data types –II |

| DAY 2 | |
|----------------|--|
| Time | Theme |
| 10.00-11.15 am | Computational Numerical Methods –I (Newton Raphson Method) |
| 11.15-11.30 am | Break |
| 11.30-12.45 am | Computational Numerical Methods –II (Newton Raphson Method) |
| 12.45-1.30 pm | Refreshment |
| 1.30-2.45 pm | Introducing Lists |
| 2.45-3.00 pm | Break |
| 3.00-4.15 pm | Working with Lists |



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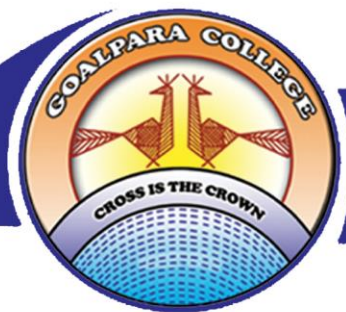
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DAY 3

| Time | Theme |
|----------------|--|
| 10.00-11.15 am | Computational Numerical Methods –III (Trapezoidal and Simpson Rule) |
| 11.15-11.30 am | Break |
| 11.30-12.45 am | Computational Numerical Methods –IV (Euler and Runge Kutta Method) |
| 12.45-1.30 pm | Refreshment |
| 1.30-2.45 pm | IF Statements |
| 2.45-3.00 pm | Break |
| 3.00-4.15 pm | Dictionaries |
| | |

DAY 4

| Time | Theme |
|----------------|--|
| 10.00-11.15 am | Computational Numerical Methods –V (Euler and Runge Kutta Method) |
| 11.15-11.30 am | Break |
| 11.30-12.45 am | Computational Numerical Methods –VI (Solution of linear system of Equation) |
| 12.45-1.30 pm | Refreshment |
| 1.30-2.45 pm | User Input and While Loops |
| 2.45-3.00 pm | Break |



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| | |
|--------------|-----------|
| 3.00-4.15 pm | Functions |
|--------------|-----------|

DAY 5

| Time | Theme |
|----------------|---|
| 10.00-11.15 am | Computational Numerical Methods – VII (2 nd Order ODE –Fixed Difference Method) |
| 11.15-11.30 am | Break |
| 11.30-12.45 am | Computational Numerical Methods – VIII (2 nd Order ODE –Fixed Difference Method) |
| 12.45-1.30 pm | Refreshment |
| 1.30-2.45 pm | Functions |
| 2.45-3.00 pm | Break |
| 3.00-4.15 pm | Practical |

DAY 6

| Time | Theme |
|----------------|-------------|
| 10.00-11.15 am | PRACTICAL |
| 11.15-11.30 am | Break |
| 11.30-12.45 am | PRACTICAL |
| 12.45-1.30 pm | Refreshment |
| 1.30-2.45 pm | PRACTICAL |
| 2.45-3.00 pm | Break |
| 3.00-4.15 pm | PRACTICAL |



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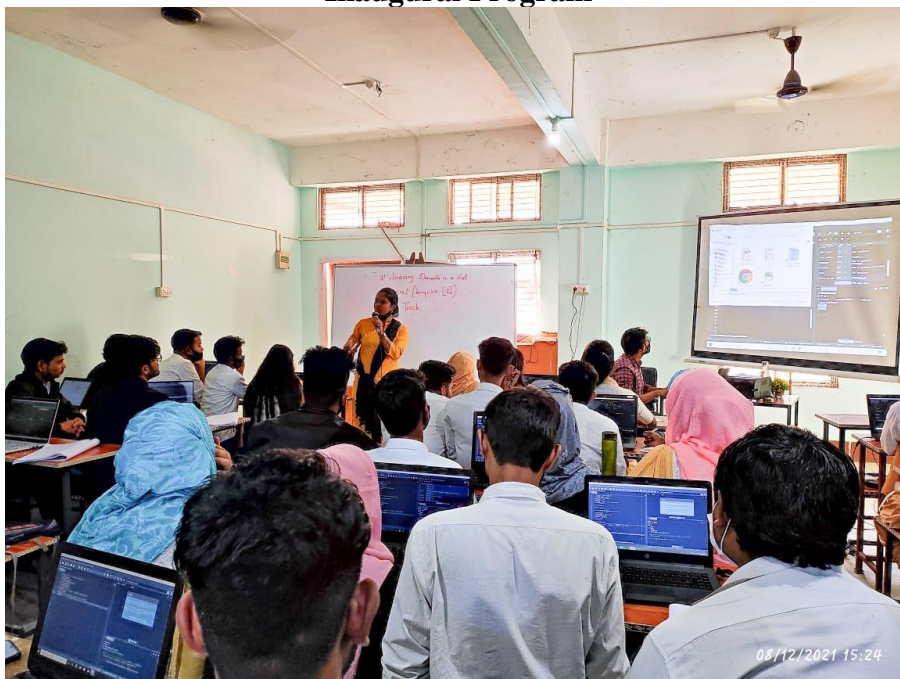
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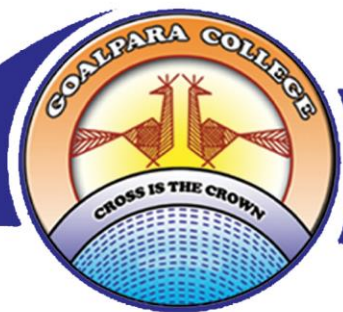
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Some of the glimpses of the “Certificate course on Python Programming”



Inaugural Program





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GOALPARA COLLEGE
DEPARTMENT OF PHYSICS
GOALPARA-783101



CERTIFICATE COURSE

ON

PYTHON

PROGRAMMING



SCAN ME

Link:
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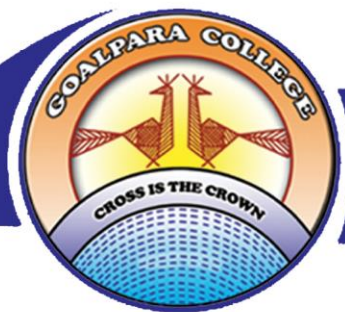
Register
on or
before
5.12.2021



*REGISTRATION FEE RS. 250/- PER HEAD
*CERTIFICATE WILL BE PROVIDED
*7 DEC 2021 - 13 DEC 2021



Helpdesk number: 7002953963



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Certificate of the Course

Goalpara College
Goalpara

Organised by
Department of Physics
Goalpara College, Goalpara, Assam

**CERTIFICATE
OF PARTICIPATION**

This is to certify that

Mr/Ms..... of
..... Participated
and successfully completed the 36 hour long certificate course named
"Certificate course on Python Programming" held from 7th December to
13th December, 2021 organised by Department of Physics, Goalpara College.

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Principal
Goalpara College

Dr. Ranjit Choudhury
Head
Department of Physics

Dr. Manjit Borah
Course Coordinator

Dr. Bijay Kumar Sah
Course Supervisor

Ms. Yoshiko Bailung
Course Supervisor