RAMAKRISHNA MISSION VIDYAMANDIRA

BOSE HOUSE CAMPUS

A Cultural & Educational Center (Rishra, Hooghly)

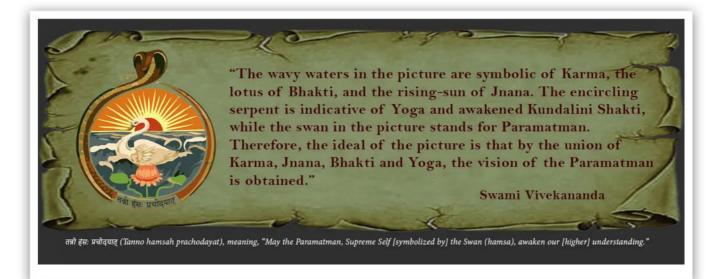
A Unit of Ramakrishna Mission Saradapitha Belur Math, Howrah



Brochure for Online Certificate Course on

PLAY WITH PYTHON

Introductory Level



Mission Statement

'True to the kindred points of Heaven and Home'- to borrow an evocative line from William Wordsworth's celebrated poem 'To a Skylark' - the ideology of Ramakrishna Mission was formulated by Swami Vivekananda as "Atmano mokshartham jagad hitaya cha" (i.e) 'For one's own salvation and for thewelfare of the world'). This telling phrase encapsulates an over-arching spiritual ideal in which individual spiritual aspiration and the spirit of altruism co-mingle. A private spiritual life that turns a blind eye to the suffering

humanity, Swami Vivekananda never tired of pointing out, is necessarily a selfish life led in isolation. Recognising as he did the immanent divinity in every living being, Swamiji bequeathed to humanity the ideology of 'Practical Vedanta'.

The educational domain is an important area where 'Practical Vedanta' finds wonderful application. In fact, the luminous mind of Swamiji probed man to his very depth and came up with the astounding revelation that infinite goodness and infinite perfection are lying buried in every man, waiting to be called out. Just as friction brings out the hidden fire from a flint, right kinds of external suggestions would likewise call forth ethical excellence and elements of creativity already present in their potential forms in man. True education, if anything, helps this manifestation through creating "right kinds of external suggestions". To the extent an academic milieu furnishes such "right kinds of external suggestions", it serves the purpose of education. Based on this educational ethos of Swami Vivekananda, our College, ever since its inception, has been striving to build up an environment that would help manifest in its learners.

Divinity (i.e. such scintillating values as selflessness, moral courage, truthfulness etc.)
Perfection (i.e. academic excellence



RAMAKRISHNA MISSION VIDYAMANDIRA

A vision, born of the irresistible character-force of a mighty spiritual genius, ceases to belong to the realm of speculation — instead it becomes a living force working itself out imperceptibly to find its fulfilment sooner or later. What is today the Ramakrishna Mission Vidyamandira, does indeed trace its origin to such a vision of Swami Vivekananda. True to the Prophet's vision as early as 1898 of a temple of learning combining the elements of the ancient 'Gurukula' tradition of India and the scientific temper of the West, the authorities of the Ramakrishna Mission, Belur Math started 'Vidyamandira' as an Intermediate Arts College in 1941 under the auspices of Saradapitha, a branch of the Ramakrishna Mission.

For history to be made, there must be years – long, gruelling years. From an Intermediate Arts college in 1941 to a three-year degree college in 1966 through to becoming 'a college with potential for excellence' as also being conferred with the autonomy status by UGC in 2010, Vidyamandira's onward march through the passage of years is a fascinating study of an educational Institute's bold strides, despite various odds, into the arena of high education. Also, during the academic session 2006-2007, post-graduate teaching was introduced and in the year 2013 the college established 'Swami Vivekananda Research Centre' to run PhD programmes. Currently, with as many as fourteen undergraduate Hons. Courses, six post-graduate courses, researches in various disciplines and a plethora of Certificate as well as Add-on courses running apace, Vidyamandira can well be likened to a mini-University which has been leaving ,all these years, its quiet yet unmistakable impact on the society by sending out academically skilled individuals with high character efficiency...

HISTORY OF THE BOSE HOUSE CAMPUS



This garden house, belonging as it did to Sri Sarat Chandra Bose, the elder brother of Netaji Subhas Chandra Bose, is said to have scripted a fair bit of history by having none other than Netaji himself setting foot in it. After Netaji's great escape in 1941, this historic house, according to police file No 24 of Police Museum, Kolkata, was used as a meeting place with the representatives of the Japanese Consulate to get news from Netaji.

Probably in May, 1941 a link between the Bose family and the Japanese Consulate was created. Subsequently, Sarat Bose met Japanese Consul General Okazaki at this Garden House. On that day of the first meeting, Sisir Bose drove the car of the Consul bringing him to this house. It is learnt that the next Consul Ohta along with his wife also came to this house several times to meet Sarat Bose. In fact, to avoid the surveillance of British intelligence officers, Mrs. Ohta used to come here wearing saree so that it would appear as if she was coming to attend a social gathering. Indeed, numerous meetings of this kind having taken place here, this house unmistakably lies wreathed in a glorious bit of history pertaining to the last leg of the Indian freedom movement.

Later the descendants of the Bose family sold this property and eventually in 2005 Sri Paritosh M Chakrabarti got the ownership of this property. Finally, this historic Bose House Property has been donated by Sri Paritosh M Chakrabarti and Sreemati Chakrabarti to Ramakrishna Mission Saradapitha, Belur Math for the construction and development of a Cultural and Educational Centre to promote the legacy of Swami Vivekananda and Netaji Subhas Chandra Bose. Now the Bose House Campus is the second campus of Ramakrishna Mission Vidyamandira.



BOSE HOUSE CAMPUS: SPECIAL FEATURES

- Swami Vivekananda's dream was to combine the traditional Upanishadic teachings of India with the knowledge of the West. A bunch of online and offline courses have been started from this campus to contribute towards the actualization of this vision..
- Keeping employability in mind, skill development courses like Digital Skills, Data Analysis, Communicative English, Communicative Hindi or Modern Journalism have been made part of our curriculum.
- Courses like Indian Mythology: Srimad Bhagavatam, Indian Philosophy: Vedanta, Buddhist Studies are meant to make one aware of India's ancient traditions, classical culture etc. These courses are very helpful in higher level research too.
- Courses such as 'Students' Mental Crisis & Intervention', 'Personality Development in the light of Ramakrishna-Vivekananda Movement' will help in combating today's dreaded mental disorders like stress, depression, anxiety and will also help developing effective personality to make one fit for career.
- Art Appreciation, Music Appreciation as will as Drawing & Craft and Music Classes will develop aesthetic sense on one hand and creativity on the other. Apart from higher level research, the vocational oriented learning of these courses today will also shape your career.
- Educational and Cultural Workshops, Seminars and Value Oriented Programs organized from this campus from time to time will be helpful for your skill development as well as values development.
- The various awareness programs and relief activities organized at this campus by the NSS department of Ramakrishna Mission Vidyamandira will be especially helpful in your socialization.
- Srimat Swami Suviranandaji Maharaj, General Secretary of Ramakrishna Math & Ramakrishna Mission officially inaugurated this campus on 21st February 2024, on the day of International Mother Language Day. In the inaugural meeting, Revered Maharaj said that the novelty of this campus of Ramakrishna Mission is that this is a co-educational institution. Girls will also study here. Swamiji said that a bird has two wings; and if both are not equally empowered and strong, then the bird cannot fly well. The governing body of Ramakrishna Mission has decided that both boys and girls will come here non-residentially; for the excellence of their lives.

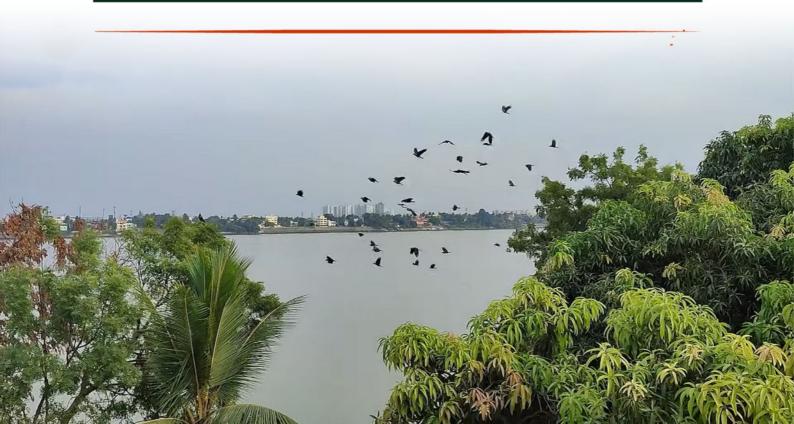




Brochure for Online Certificate Course on

PLAY WITH PYTHON

Introductory Level



PROGRAMME FRAMEWORK

Name of the course	Play With Python		
Aims and objectives	This course empowers learners, regardless of background (school students, college/university students, or working professionals), to confidently leverage Python for various tasks, from basic scripting to complex applications. Through interactive modules, playful explanations, and real-world applications, you will gain a comprehensive understanding of Python's core concepts, from basic syntax and data manipulation to object-oriented programming and advanced functionalities.		
Important Literature and Texts	Alongside your Python course materials, consider incorporating these valuable resources to enhance your learning: Official Documentation: Python Tutorial: (https://docs.python.org/3/tutorial/) - An excellent starting point, this official tutorial provides a clear and concise introduction to Python's core concepts and syntax. Books: Automate the Boring Stuff with Python by Al Sweigart: (https://automatetheboringstuff.com/) - Aimed at beginners, this book uses practical projects to teach you how to automate tasks using Python. Think Python: How to Think Like a Computer Scientist by Allen B. Downey: (https://www.amazon.com/Think-Python-Like-Computer-Scientist/dp/1491939362) - This book delves deeper into programming concepts while teaching you how to think computationally, a valuable skill for any programmer. Online Resources: DataCamp: ([https://www.datacamp.com/]) - An interactive platform offering bite-sized coding exercises and tutorials, allowing you to learn by doing. HackerRank: ([https://www.hackerrank.com/]) - This platform provides coding challenges of varying difficulty levels, helping you hone your problem-solving skills and test your understanding of Python concepts. Additionally:		
	The Python Standard Library Documentation: ([https://docs.python.org/3/library/]) - Explore this resource as you progress to learn about the vast collection of built-in modules and functions available in Python		

Learned scholars and their contribution

The course is designed by experienced educators and industry professionals well-versed in Python programming and its applications across diverse fields. Contributions include crafting interactive modules, playful explanations, and real-world applications tailored to learners of all backgrounds.

This Python course offers a unique blend of **engaging instruction**, **practical application**, **and real-world relevance**, empowering learners of all backgrounds (school students, college/university students, working professionals) to:

- Master the fundamentals: Gain a solid understanding of Python's core concepts, from syntax and data manipulation to object-oriented programming.
- Code with confidence: Craft well-structured, efficient Python programs using functions, data structures, and essential functionalities.
- **Tackle real-world challenges:** Work on engaging projects that apply Python to solve problems across various domains, igniting your creative potential.

Here's what sets us apart:

- **Playful Learning:** Our interactive modules make learning Python enjoyable and approachable, even for beginners.
- **Hands-on Focus:** Develop practical skills through exercises, projects, and real-life applications.
- **Future-proof Knowledge:** Explore advanced topics like decorators, regular expressions, and essential Python tools, equipping you for diverse coding tasks
- **Industry Insights:** Gain valuable exposure to how Python is used in the professional world.

Invest in your future with Python. Enroll today and unlock a world of possibilities!

Emphasizes playful learning and hands-on focus to make Python enjoyable and approachable. Draws from various schools of thought in education and programming to create a comprehensive and engaging learning experience. Incorporates elements of constructivism, active learning, and project-based learning to facilitate understanding and retention.

This Python

What You'll Learn and Master in Python:

This Python course equips you with the skills and knowledge coveted by industries across the board. Here's what you'll gain:

- **Web Development Essentials:** Craft dynamic web applications and master server-side scripting, laying the groundwork for popular frameworks like Django and Flask.
- **Data Science Powerhouse:** Become proficient in Python's data manipulation and analysis libraries like NumPy, pandas, and scikit-learn the cornerstones of data science and machine learning.
- **Automation Champion:** Learn to automate repetitive tasks, streamline workflows, and build efficient tools using Python's scripting capabilities.
- **Financial Python Fundamentals:** Gain the skills to contribute to the world of quantitative finance, risk management, and algorithmic trading with Python's speed and analytical edge.
 - Game Development Skills: Uncover how Python is used in popular

Basic tenets and Schools of thought

game development tools and frameworks for scripting in-game elements and data analysis. **Scientific Computing Expertise:** Develop the knowledge to tackle complex scientific problems with Python's focus on readability and its robust libraries for scientific computing, simulations, and bioinformatics. **Cybersecurity Fundamentals:** Explore how Python's adaptability empowers you to automate security tasks, conduct penetration testing, and analyze vulnerabilities. This comprehensive course equips you with the in-demand Python skills sought after in today's job market, opening doors to exciting career opportunities in a variety of industries. Python's versatility in web development, data science, automation, finance, game development, scientific computing, and cybersecurity. Practical applications in crafting dynamic web applications, data manipulation and analysis, automation of repetitive tasks, quantitative finance, game development, scientific computing, and cybersecurity tasks. By the end of this course, you will be able to: **Grasp the fundamentals of Python:** Understand why Python is a popular choice and its key features compared to other languages. Write basic Python code: Master syntax, variables, data types, operators, and control flow statements (if/else, loops). **Craft reusable functions:** Develop functions to organize your code and enhance efficiency. **Applied Aspects** Work with built-in data structures: Utilize lists, tuples, sets, and dictionaries for data organization and manipulation. Embrace object-oriented programming: Utilize classes, objects, inheritance, polymorphism, encapsulation, and abstraction for structured Leverage Python's power tools: Explore modules, decorators, magic methods, property functions, JSON parsing, and regular expressions. Install and manage Python packages: Utilize PIP, the package manager, to access a vast library of functionalities. Handle errors effectively: Implement exception handling to improve code robustness. Apply Python in real-world scenarios: Work on engaging projects that address various challenges across diverse fields. This course provides a fun and engaging learning experience, empowering you to confidently use Python for problem-solving, automation, and creative endeavors. Aligns with contemporary trends in education, emphasizing interactive and project-based learning approaches. Integrates with the evolving landscape of Python programming, covering advanced topics and industry insights to prepare learners for diverse coding tasks. Responds to the increasing demand for Python Connect with the skills across various industries, offering learners valuable exposure to real-world applications and career opportunities. contemporary knowledge system In the realm of Python developers, industries across the board are clamoring for skilled professionals. Here's a breakdown of some key sectors that heavily rely on Python: Web Development: Python's versatility makes it a favorite for building

dynamic web applications, server-side scripting, and powering popular

web frameworks like Django and Flask.

- **Data Science & Machine Learning:** Python's extensive libraries like NumPy, pandas, scikit-learn, and TensorFlow make it a go-to language for data analysis, manipulation, machine learning algorithms, and artificial intelligence applications.
- **Automation & Scripting:** Python excels at automating repetitive tasks, creating system administration tools, and simplifying workflows across various industries.
- **Finance:** Python's speed and efficiency make it a valuable asset in quantitative finance, risk management, algorithmic trading, and financial data analysis.
- **Game Development:** Python powers popular game development tools and frameworks, making it a valuable skill for building game prototypes, scripting in-game elements, and data analysis within the gaming industry.
- **Scientific Computing:** Python's robust libraries and focus on readability make it a preferred language for scientific computing, data visualization, simulations, and bioinformatics.
- **Cybersecurity:** Python's adaptability allows it to be used for security automation, penetration testing, vulnerability analysis, and security information and event management (SIEM) tools.

This list is just a glimpse into the vast landscape of industries seeking Python developers. With its growing popularity and extensive applications, Python proficiency is a valuable asset for those seeking rewarding careers in the tech world and beyond.

When it comes to Python skills, industries are seeking developers who can:

- **Build the Backbone of the Web:** Python's versatility is perfect for crafting dynamic web applications and server-side scripting, powering frameworks like Django and Flask.
- Unleash the Power of Data: Data Science and Machine Learning rely heavily on Python's data manipulation and analysis libraries like NumPy, pandas, and scikit-learn.
- **Automate Anything:** Python excels at simplifying tasks and workflows across industries with its automation and scripting capabilities.
- Make Finance More Efficient: Python's speed and analytical prowess make it a valuable asset in quantitative finance, risk management, and algorithmic trading.
- Create Engaging Games: Game development tools and frameworks leverage Python for scripting in-game elements and data analysis.
- **Solve Complex Scientific Problems:** Readability and robust libraries make Python a preferred language for scientific computing, simulations, and bioinformatics.
- Protect Our Digital World: Python's adaptability allows it to be used for security automation, penetration testing, and vulnerability analysis.

By mastering these in-demand skills, you'll be well-positioned for exciting career opportunities in a wide range of fields.

Exercise material

Ready to put your newfound Python knowledge to the test? Here are some exercises of varying difficulty levels to challenge and reinforce your understanding:

Beginner:

- 1. **Greetings:** Write a program that asks the user for their name and then prints a personalized greeting message.
- 2. **Number Guessing Game:** Create a simple game where the user has to guess a randomly generated number between 1 and 10. Provide hints based on whether their guess is too high or too low.
- 3. **Mad Libs Generator:** Build a program that prompts the user for different words (nouns, verbs, adjectives, etc.) and then inserts them into a pre-written story template to create a funny or nonsensical story.

Intermediate:

- 4. **List Manipulation:** Write a program that reads a list of numbers from the user and then calculates the average, minimum, and maximum values in the list.
- 5. **Password Checker:** Create a program that prompts the user for a password and checks if it meets certain criteria (e.g., minimum length, containing uppercase and lowercase letters, special characters). Provide feedback to the user if their password is strong or weak.
- 6. **Text Analyzer:** Write a program that reads a text file (or user input) and then performs various analyses, such as counting the number of words, lines, or occurrences of specific characters.

Advanced:

- 7. **Web Scraper:** Build a program (using libraries like Beautiful Soup) that can scrape data from a simple website, like extracting product information from an e-commerce site.
- 8. **Simple Calculator:** Challenge yourself by creating a basic calculator program that can perform addition, subtraction, multiplication, and division based on user input.

This Python course equips you with the foundational knowledge to code like a pro. By the end, you'll be able to:

to solve problems creatively.

Think like a programmer: Develop computational thinking skills

- Write Python code: Grasp the core syntax and structure to bring your ideas to life.
- **Command your data:** Utilize variables, lists, and dictionaries to store and manipulate information.
- **Make decisions:** Employ conditional statements (if/else) to guide your programs.
- **Automate tasks:** Implement loops (for/while) to streamline repetitive actions.
- **Organize your code:** Define functions to keep your programs clean and efficient.
- Work with files: Read from and write data to external files.

Future Prospects

CURRICULUM

TOTAL CREDIT: 4	FULL MARKS: 100
EACH CREDIT: 15 HOURS	COMPREHENSIVE ASSESSMENT: 20
COURSE DURATION: 4 MONTHS	PERIODIC ASSESSMENT: 80

	COURSE CONTENT	HOURS	
UNIT 1	Python Power Play: Mastering the Language of Choice	15	
Module I	Discover why Python is the language of choice; A friendly comparison with other languages; Syntax made fun: The ABCs of Python; Dive into Variables and data Types; Python Objects, Number & Booleans, Strings; Container Objects, Mutability of Objects.		
Module II	<i>From Arithmetic to Bitwise:</i> Mastering the Art of Operators; Precedence and Associativity: Who Comes First? Conditions: If Else, If-Elif-Else; Loops: While, For; Break and Continue statement; Range function.		
Module III	Solving Problems: Solve Problems, Crack Codes.		
UNIT 2	Python's Playground: Mastering Strings, Lists, Tuples, Sets, and Dictionaries	les, Sets,	
Module I	 String Objects: Basic Data Structure in Python, String Object Basics, String Inbuilt Methods, Splitting and Joining Strings, String Format Functions. List Object Basics: List Methods, List as Stack and Queues, List Comprehensions. Tuples, Set, Dictionaries & Its Function: Tuples, Sets & Dictionary Object Methods, Dictionary Comprehensions, Dictionary View Objects. Function: Functions Basics, Parameter Passing, Iterators, Generator Functions. Lambda Functions, Map, Reduce, Filter Functions. 	15	
Module II	Embark on an OOP Adventure: Classes, Objects, and Beyond! Pillars of Power: Inheritance, Polymorphism, Encapsulation, Abstraction. Decorator: Concept of decorator, Class Methods and Static Methods, Special (Magic/Dunder) Methods. Property Decorators: Getters, Setters, And Deletes.		
Module III	Build, Create, Innovate: Solving Real-Life Conundrums!!		
UNIT 3	Unveiling Python's Power: Files, Regular Expressions		
Module I	<i>Files:</i> Working with Files, Reading and Writing Files, Buffered Read and Write, Other File Methods, Logging, Debugger, Modules and Import Statements.	10	
Module II	Python RegEx: Finding Perfect Match.		
Module III	Implement, Innovate, and Conquer: Solving Real-Life problem with Python!		
UNIT 4	Level Up Your Python Play: Exception Handling & Industry Best Practices	20	

Module I	<i>Exception Handling:</i> Exceptions Handling with Try-Except, Custom Exception Handling, List of General Use Exceptions, Best Practice Exception Handling.	
Module II	Peek into the Industry: Case Studies and Best Practices.	
Module III	Quick Revision: The Journey So Far. Python Project: Real-Life Projects and Achievements!	

SUGGESTED READINGS

- 1. "Python Crash Course by Eric Matthes, 2nd Edition
- 2. Automate the Boring Stuff with Python" by Al Sweigart, 2nd Edition
- 3. Python Programming: An Introduction to Computer Science" by John Zelle, 3rd Edition

ASSESSMENT				
COMPREHENSIVE ASSESSMENT (20)	PERIODIC ASSESSMENT (80)			
 Project Work Term Paper Essay Writing	Theory: 50			
Inter forum DebateExtemporeQuiz	Viva-voce: 20			

ELIGIBILITY CRITERIA

Academic Qualification: Qualified H.S. or equivalent level of examination.

Age: No bar.

Gender: No bar

OTHER DETAILS

- Duration of the Course: 4 Months
- Total Hours: 60
- Mode of Instruction: Online
- Medium of Instruction: Bengali & English
- At the end of the course, all the participants will be given certificates by Swami Vivekananda Research Centre (SVRC), Ramakrishna Mission Vidyamandira.
- During the conductance of the course the decision of the college authority is final.

BOSE HOUSE CAMPUS: AT A GLANCE

































Our Courses

Digital Skill: From Basic to Advanced

Communicative English

Modern Journalism

Drawing & Music Classes

Students Mental Crisis & Intervention

Indian Philosophy: Vedanta

Indian Mythology: Shrimad Bhagavatam

Apprication of Indian Art & Crafts

Apprication of Indian Music

SEE ALL COURSES





FOLLOW US ON









"श्रीतामक्ष ३ श्वामी वित्वकानत्मत निक्र व्यामि त्य क्य भागी ठारा छाषाग्र कि कित्रग्रा थ्रकाम कित्रव ? ठारोत्मत भूण थ्रछात्व व्यामात श्रीवत्नत थ्रथम छत्यम । 'नित्विम्छात्र' मत्या व्यामिश्च मत्न कित्र त्या, तामक्ष ३ वित्वकानम्म अक्षा व्याभ व्यक्तित्वृत पूरे क्रम । व्याभ यिम श्वामीकि श्रीविछ शांकित्वन, छिनि निम्मग्ररे व्यामात थ्रक रहेत्वन - व्यवाद छौत्क विम्मग्ररे व्यामि थ्रक्रमत्म वत्रम कित्रग्रम । यारा रहेक, यछिन श्रीविछ शांकिव छछिन 'तामक्ष-वित्वकानत्मत' अकान्न व्यव्भ छ व्यव्जक शांकिव, अक्था वना वारम।"

