



OCAC Training Centre

INTERNSHIP TRAINING PROGRAM

FULL STACK PYTHON





FULL STACK PYTHON

Full Stack Python is a powerful skill set combining front-end and back-end development using Python and related tools.

Target Audience – Undergraduate / Graduate Students of Urban (B.Sc., M.Sc., B.Tech., BCA, MCA, M. Tech. or equivalent)

Duration – 240 Hrs

Pre Prerequisites–Basic knowledge of computer science and Mathematics

1. Basics of Programming & Python

- **Core Python:** Variables, data types, control structures, functions, OOP
- **Tools:** VS Code or PyCharm, Git & GitHub, virtual environments (venv, pipenv)

2. Frontend Development

- **HTML/CSS:** Structure and styling of web pages
- **JavaScript:** DOM manipulation, events, basics of ES6
- **Frontend Libraries/Frameworks:**

- **Bootstrap** (for styling)
- **React.js** (optional but powerful for modern apps)

3. Back-end development with Python

- **Flask or Django:**
 - *Flask*: Lightweight, good for smaller projects
 - *Django*: Batteries-included, best for larger applications
- **Key Concepts:**
 - Routing
 - Templates (Jinja for Flask, Django templates)
 - Forms and validation
 - Middleware and authentication
 - REST API with Flask or Django REST Framework

4. Database Integration

- **SQL**: Basic queries, joins, CRUD operations
- **ORM**:
 - SQL Alchemy (Flask)
 - Django ORM
- **Databases**:
 - PostgreSQL or MySQL (Relational)
 - MongoDB (NoSQL - optional)

5. REST APIs and AJAX

- Create APIs using Django REST Framework or Flask-RESTful
- Use `fetch()` or `axios` in JavaScript to call APIs

6. Authentication & Authorization

- Session-based login
- Token-based auth (JWT)
- Social login (Google, GitHub)

7. Deployment

- **Web Servers:** Gunicorn, Nginx
- **Cloud:** Heroku, Railway, Render (beginner-friendly) or AWS (advanced)
- **Docker:** For containerization (optional but useful)

8. DevOps & CI/CD (Intermediate)

- GitHub Actions or GitLab CI/CD
- Environment variables
- Debugging & logging tools

9. Project Ideas

- Blog website
 - E-commerce site
 - Task Manager with authentication
 - REST API for a bookstore
 - Portfolio website (with backend CMS)
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- **Assignments & Hands-On Practice:** Weekly coding exercises, mini-projects, and quizzes.
 - **Case Studies & Real-World Applications:** Demonstrating different applications in FMCG, e-Commerce, Finance, Entertainment, Hospitality and AI.
 - **Capstone Project:** A real-world Python Web Development project incorporating all learned concepts.

Contact

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**(Get ahead of the competition with
programming training from OCAC)**

For More Details Please Call:

8144604010 / 8018039767

Odisha Computer Application Centre

(Designated Technical Directorate of Electronics & Information Technology Department, Government of Odisha)

Ground Floor, OCAC Tower, Acharya Vihar, Bhubaneswar