GITHUB SYLLABUS

Module 1: Introduction to Version Control

- What is version control
- Types of version control systems
- Introduction to Git
- Benefits of using Git
- Overview of GitHub

Module 2: Installing & Setting Up Git

- Installing Git
- Configuring username and email
- Git configuration settings
- Basic Git commands overview

Module 3: Git Basics

- Repository (repo) concept
- Initializing repository (git init)
- Cloning repository (git clone)
- Tracking changes (git add, git commit)
- Viewing history (git log)

Module 4: Working with Files

- Staging area
- Ignoring files (.gitignore)
- Undoing changes
- Restoring files

Module 5: Branching & Merging

- What is branching
- Creating branches (git branch)
- Switching branches (git checkout)
- Merging branches
- Handling merge conflicts

Module 6: Remote Repositories

- Connecting local repo to GitHub
- git push and git pull
- git fetch
- Working with remote branches

Module 7: GitHub Basics

- Creating GitHub account
- Creating repositories
- Uploading projects
- README.md file
- Managing files on GitHub

Module 8: Collaboration Workflow

- Forking repositories
- Pull requests (PR)
- Code review process
- Issues and discussions
- Team collaboration

Module 9: Advanced Git

- Rebasing
- Cherry-pick

- Stashing changes
- Reset vs revert
- Tagging releases

Module 10: GitHub Features

- GitHub Actions (CI/CD basics)
- GitHub Pages (hosting websites)
- Project boards
- Wiki and documentation

Module 11: Security & Best Practices

- SSH keys setup
- Managing access permissions
- Secure workflows
- Commit message standards

Module 12: Working with Open Source

- Contributing to open-source projects
- Understanding licenses
- Creating good pull requests
- Community guidelines

Module 13: Debugging & Troubleshooting

- Fixing common Git errors
- Resolving conflicts
- Recovering lost commits

Module 14: Real-World Projects

- Managing team project with GitHub
- Version control for web project