**Course Content:**

1. What is GIT (Introduction)  
  
2. GIT Installation on Windows/MAC

* GIT global configuration

3.  GIT Architecture

* What is working copy (workspace)
* What is stage/index
* What is local repo/branch

4. GIT first commit

* Create new git hub account on git hub cloud
* git init
* git remote add origin
* git add .
* git add
* git add <folder/dir>
* git push origin master (push your first code to git repo at remote)
* setup git username, email id and password
* git authorization
* Git Hub Overview
* Git HUB – remote repo creation
* Practical Implementation with live examples

5. GIT – 2nd commit

* Add a new file
* Update a file
* Delete a file
* add -> commit -> push it again to remote branch
* Practical Implementation with live examples

6. GIT logs/history

* git logs
* git logs with various options
* git logs with filters
* git logs with different options
* git view commit
* check commit
* check commit history
* Practical Implementation with live examples

7. GIT diff

8. GIT blame/ GIT short log

9. GIT local branching process

* Complete workflow
* Deep understanding of stage/index and local repo
* How to cut a feature branch
* git checkout
* git checkout vs git switch
* git checkout with git branch
* git branch (create a new branch)
* git add . (add working copy objects to stage/index)
* git add <file/folder>
* How to commit a code
* git commit -m
* git push origin
* Practical Implementation with live examples

10. PR (Pull Request) Process

* What is PR (Pull Request)
* git merge at remote side
* PR – review
* PR – feedback
* PR – request changes (rejected)
* PR – mail notification
* PR – approval
* Update PR
* PR transaction between developers
* PR comments
* PR best practices
* Practical use cases of PR
* Practical Implementation with live examples

11. GIT various branching commands:

* Create branch
* Delete branch
* Branch list
* Local branch list
* Remote branch list
* Checkout/Switch branch
* Practical Implementation with live examples

12. GIT Clone vs GIT Fork

* What is git clone
* How to clone
* Why to clone
* Import cloned repo to current working copy in editor (eclipse, IntelliJ)
* Git forking process
* How to fork any repo at remote side
* Practical Implementation with live examples

13. GIT Local Merge

* Git local merge use cases
* git merge
* git merge master to feature branch
* git merge feature to master branch
* git merge best practices
* git merge and no merge branches
* Practical Implementation with live examples

14. GIT Tag and Releases

* What is tag
* What is release
* How to tag a git commit with a specific version
* How to push the tag to remote
* How to create various tags for different features in your project
* How to create a release version from the specific tag
* How to create a latest release from tag at remote side
* Release notes
* Practical Implementation with live examples

15.  GIT Fetch vs PULL

* What is git pull
* What is git fetch
* Diff between fetch and pull
* Why git pull = git fetch + merge
* Practical example of git fetch and git pull
* Practical Implementation with live examples

16. GIT Merge vs Rebase

* What is actual merge
* git merge and how it works
* git merge with visual design diagrams
* git rebase
* git rebase with visual design diagrams
* Main diff between merge and rebase
* When to use git merge and rebase
* Best practices
* Practical Implementation with live examples

17. GIT Cherry-Pick

* What is cherry-pick
* How to perform cherry-pick merge from master to feature branch
* How to perform cherry-pick merge from feature to master branch
* Why cherry-pick is popular
* Cherry-pick practical examples
* Practical Implementation with live examples

18.  GIT Stash

* What is stash
* How to perform git stash
* git stash
* git stash pop
* git stash list
* Practical Implementation with live examples

19. GIT Merge Conflict

* What is conflict
* Why do we get conflict
* Merge conflict with git stash
* Merge conflict with git pull
* Merge conflict with various use cases
* How to understand git conflict
* How to resolve git conflict
* How to check git conflicts in editor
* Stash changes in merge conflict
* Latest pull changes in merge conflict
* Practical Implementation with live examples

20. GIT Aliases

* What is git alias
* How to create custom global git alias
* Various shortcut alias examples
* git log alias
* git checkout alias
* git status alias
* git switch branch alias
* git commit log alias
* Practical Implementation with live examples

21. Comparing two commits

* Comparing two commits using git diff
* Practical example of git diff to compare various commits in local
* Practical Implementation with live examples

22. GIT Reset

* What is git reset
* git reset options
* git –soft reset
* git –mixed reset
* git –hard reset
* git reset workflow
* git reset design
* How to delete a commit history
* How to delete a file from stage
* How to delete a commit history from local repo
* How to delete a commit history from local repo and delete file from stage
* Un-stage a file
* How to delete a file from working copy using git hard reset
* git force push to remote
* Reset remote changes
* Practical Implementation with live examples

23.  GIT Revert

* What is git revert
* How to perform git revert
* Diff between git reset and git revert
* Practical Implementation with live examples