

# How to Learn Course Content Using AI

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# Motivation

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# Why Use AI for Learning?

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- Traditional learning: attend lecture → read notes → study alone
- **Problem:** When stuck, you have to wait for office hours or search online
- **AI-assisted learning:** Get instant, detailed explanations anytime

## Key Idea

Use AI as your **personal course tutor** that has access to all your course materials.

# What Can AI Help With?

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## Concept Understanding

- Explain each slide in detail
- Break down complex topics
- Provide additional examples

## Coding Practice

- Generate executable code
- Add detailed comments
- Create variations to explore

## Deep Dive & Verification

- Cross-check slide content
- Find missing details
- Clarify ambiguities

## Self-Assessment

- Generate quizzes
- Test your understanding
- Identify weak areas

## Tools

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# Tools You Need

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- **Visual Studio Code:** Free code editor by Microsoft
- **Claude Code:** AI coding assistant by Anthropic
- Claude Code runs as an extension inside VS Code

# Requirements

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## Software

- Visual Studio Code
- Node.js (version 18+)
- Claude Code (npm package)
- Claude Code VS Code extension

## Account

- Claude.ai account
- Claude Pro or Max subscription
- Stable internet connection

# Setup

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# Step 1: Install Visual Studio Code

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1. Go to <https://code.visualstudio.com/>
2. Download for your OS (macOS / Windows)
3. Install:
  - **macOS:** Open .dmg, drag to Applications
  - **Windows:** Run .exe installer, check “Add to PATH”
4. Launch VS Code to verify

## Step 2: Install Node.js

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1. Go to <https://nodejs.org/>
2. Download the **LTS** version (v20+ recommended)
3. Install and verify:

```
$ node -version  
v20.x.x
```

### Note

Node.js is required for installing Claude Code via npm.

## Step 3: Install Claude Code

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1. Open your terminal (Terminal on macOS, Command Prompt on Windows)
2. Install Claude Code globally:

```
$ npm install -g @anthropic-ai/claude-code
```

3. Authenticate by running `claude` (opens browser for sign-in)
4. Verify with `claude doctor` — all items should be green

### Warning

Do **not** use `sudo` (macOS) or run as Administrator (Windows).

## Step 4: Install Claude Code Extension in VS Code

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1. Open VS Code
2. Open Extensions panel:
  - macOS: `Cmd + Shift + X`
  - Windows: `Ctrl + Shift + X`
3. Search for “**Claude Code**”
4. Install the official extension by **Anthropic**
5. Sign in when prompted

### Result

You now have VS Code with the Claude Code panel in the sidebar.

# Learning Workflow

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# Overview: The Workflow

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## 5 simple steps:

1. Create a folder and place all course materials
2. Open the folder in VS Code
3. Type `/init` in Claude Code
4. Set up Claude as your course tutor (with a prompt)
5. Start asking questions

# Step 1: Prepare Your Course Folder

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Create a folder and place **all** provided materials inside:

```
ProgrammingLanguages/  
  lec1.pdf  
  lec2.pdf  
  lec3.pdf  
  lec4.pdf  
  lec5.pdf  
  notes.pdf  
  ...
```

## Tip

The more materials you provide (slides, notes, assignments), the better Claude can help.

## Step 2: Open in VS Code

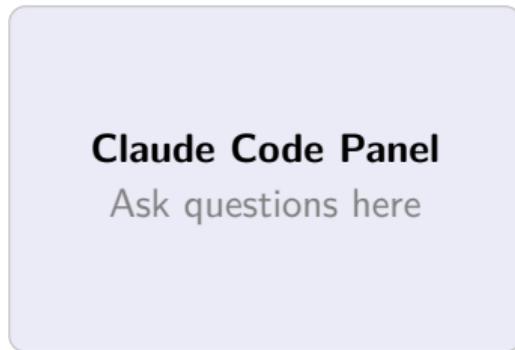
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1. Launch Visual Studio Code
2. **File** → **Open Folder...** → Select your course folder
3. Open the Claude Code panel in the sidebar

Left



Right



## Step 3: Initialize with `/init`

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In the Claude Code panel, type:

```
/init
```

This creates a `CLAUDE.md` file that gives Claude context about your folder contents.

## Step 4: Set Up Your AI Tutor

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Type the following prompt in Claude Code:

**Context:**

Currently I am taking {Course Name} course where all the contents are provided in the folder.

**Role:**

You are the instructor of the course who will answer my questions about the course.

**Command:**

You need to answer my questions in detail and step-by-step.

**Format:**

If I request, save the illustration as a .md file.

Replace {Course Name} with your actual course name.

## Step 5: Start Asking Questions!

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You are now ready to learn.

Claude can:

- Read your PDF slides and understand diagrams
- Provide detailed, step-by-step explanations
- Generate executable code examples
- Create quizzes to test your understanding
- Save explanations as `.md` files

## Example Questions

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# Q1: Concept Check

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## Goal

Understand each slide of a lecture in detail.

## Prompt:

```
For the first lecture (i.e., lec1.pdf),  
explain each slide in detail.
```

## What Claude does:

- Reads the PDF file
- Explains each slide one by one
- Provides context and background for each concept

## Q2: Coding Practice

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### Goal

Get executable code based on lecture content.

### Prompt:

```
For the third lecture (i.e., lec3.pdf),  
I need you to implement programs that I can  
execute. I need you to add detailed comments  
illustrating the role of each line.
```

### What Claude does:

- Creates runnable code files in your folder
- Adds line-by-line comments explaining each part
- You can run the code directly in VS Code's terminal

## Q3: Deep Dive

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### Goal

Challenge slide content and verify correctness.

### Prompt:

```
In page 15 of lec5.pdf, I guess the slide
is wrong. The inference rule is missing some
rules (the entire inference rules are
provided in page 8).
```

### What Claude does:

- Cross-references page 15 with page 8
- Identifies missing or incorrect rules
- Provides the corrected version

## Q4: Self-Assessment

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### Goal

Test your understanding with quizzes.

### Prompt:

```
Based on the lecture notes and slides for  
lecture 5, give me a quiz for verifying my  
understanding of the lecture.
```

### What Claude does:

- Generates questions based on the lecture content
- Covers key concepts and potential exam topics
- Provides answers and explanations after you attempt

## Tips

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# Tips for Effective Learning

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## 1. **Be specific with references**

Always mention the exact file and page number (e.g., “page 15 of lec5.pdf”)

## 2. **Ask follow-up questions**

Don't stop at the first answer — ask “Why?”, “Can you give another example?”

## 3. **Save important explanations**

Ask Claude to save as `.md` files to build your own study notes

## 4. **Run the code yourself**

Execute generated code in VS Code's terminal, modify and experiment

## 5. **Quiz yourself regularly**

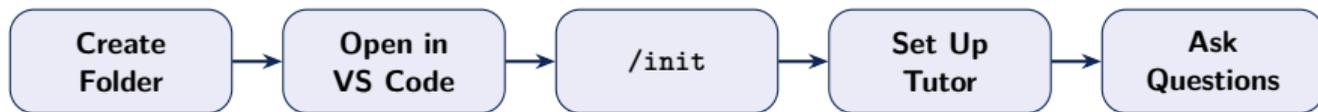
Use self-assessment before exams to identify weak areas

## Summary

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# Summary

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- Install: VS Code + Node.js + Claude Code + Extension
- Place all course materials in one folder
- Use the structured prompt to set up your AI tutor
- Ask anything: concepts, code, deep dives, quizzes

**Setup Guide:** [https://dgistpl.github.io/courses/ai\\_study/2026/](https://dgistpl.github.io/courses/ai_study/2026/)

# Thank you!

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[https://dgistpl.github.io/courses/ai\\_study/2026/](https://dgistpl.github.io/courses/ai_study/2026/)