

Hands-on AI-Assisted Development Mechanical and Electrical track

Prepared for TechnoPro, Inc. / Givery, Inc.



Use this document to check things during the course and to look back after it ends. Using Excel files from your own workplace, the course goes from tidying and totaling the data to building a small app that improves your work. No programming experience is required.

It is 8 hours a day (3 hours in the morning, 5 hours in the afternoon) for 3 days, with about 1 week between days.

Tools

Tool	Role
VSCode	This is where you write code and text
GitHub Copilot	A partner you can consult inside VS Code. You can make your requests in English
Browser	This is where you run what you built and check it

You do not use Python or Node.js. No extra installation is needed. The setup works as is on loaner PCs without administrator rights.

To load data, drag the file onto the page and drop it.

Rules to follow during the course

As participants, you handle information from your client sites. In the exercises, assume the following.

- Generalize client names, product names, project names and partner names to the industry or process level
- Do not use real data, real files or screenshots
- Avoid specific values for figures and specifications, and write at the level of purpose, issues and expected effects
- Before you submit, check yourself that the content is safe to send outside the company

If unsure, ask yourself, "Would this text be a problem if it left the company?" If so, rewrite it. The work theme you write on Day 2 of the Mechanical and Electrical track is not submitted or presented. You write it to organize your own thinking.

Day 1 content

How the time is used

Morning 110min	Environment setup + creating a GitHub account + Copilot invitation and check (setup slot on the day)
Morning 60min	Generative AI basics (what it is, how it works, strengths and weaknesses, when to use it and when not, examples in Japan)
Afternoon 70min	Risk, literacy and governance + handling confidential information (client environments, information leaks, 4 rules for hiding information)
Afternoon 40min	How to use VS Code (screen layout, files, basic operations)
Afternoon 100min	GitHub Copilot basics: 5 short hands-on exercises (one per feature, model switching only introduced)
Afternoon 40min	Comprehension test (focused on generative AI and literacy, 30min = Day 1 deliverable)
Afternoon 40min	Review + guidance on next week's vibe coding theme

Topics covered

CHAPTER 1

Environment setup

Exercises: Setup work, connection check

CHAPTER 2

Generative AI basics

CHAPTER 3

Risk and literacy

Exercise: Cases where judgments split

CHAPTER 4

How to use VS Code

Exercise: Practice with files

CHAPTER 5

Using Copilot

Exercises: Ask in English, fix a draft, show a file, refine by conversation, build something that works

CHAPTER 6

Comprehension test

CHAPTER 7

Review and next time

Exercise: Personal review

Day 2 content

How the time is used

Morning 40min Day 1 recap + environment recheck (there is a gap of about 1 week)

Morning 130min Vibe coding intro exercise (a theme you thought of beforehand, a game is also fine; get used to coming up with ideas and operating the tools)

Afternoon 60min Prompt basics

Afternoon 40min Prompt exercise

Afternoon 80min Data preparation (have the AI read a CSV and clean it up: blank cells, merged cells, multiple sheets)

Afternoon 70min Working with tabular data using generative AI (processed in the browser with JS)

Afternoon 30min Putting your work theme into words (hide confidential details, organize it for yourself and submit it; no presentation)

Afternoon 10min Day 2 closing

Topics covered

CHAPTER 1

Day 1 review and environment check

Exercise: Environment check

CHAPTER 2

Intro to vibe coding

Exercise: Build your own project

CHAPTER 3

Prompt basics

Exercise: Rewriting the prompt

CHAPTER 4

Data preparation

Exercise: Running the data preparation

CHAPTER 5

Working with tabular data

Exercises: Extracting out-of-spec lots, totals and a chart

CHAPTER 6

Putting your work theme into words

Exercise: Write down your theme

Day 3 content

How the time is used

Morning 30min Day 2 review + environment check

Morning 90min Data analysis exercise (common theme, dummy data: the AI reads and cleans the data → analysis → findings)

Morning 50min Documenting the analysis results (write an evaluation report or other report and save it as PDF)

Afternoon 20min Final assignment guidance (choose from the sample collection of mini apps for improving your work, such as AppForge)

Afternoon 130min Pick 1 sample and build it by vibe coding (runs in the browser, finished within the time)

Afternoon 80min Extend and go further (improve the app you chose, or take on another sample)

Afternoon 40min Action plan (how you will use this in your own work from tomorrow)

Afternoon 20min Completion and review

Topics covered

CHAPTER 1

Day 2 review and environment check

Exercise: The 4 environment checks

CHAPTER 2

Data analysis exercise

Exercise: Run data preparation; calculate totals and correlation; extract the breakdown and out-of-spec lots; write 3 lines of findings

CHAPTER 3

Documenting the analysis results

Exercise: Create the report as HTML; steps to save it as PDF

CHAPTER 4

Mini app for improving your work

CHAPTER 5

Building the sample you chose

Exercise: Choose a sample and prepare the folder; build the mini app

CHAPTER 6

Extending what you built

Exercise: Extend your app on your own

CHAPTER 7

Action plan

Exercise: Fill in the action plan

CHAPTER 8

Completion and review

Exercise: Choose the operations to take home

Troubleshooting

Symptom	What to check
The Chat view does not appear	Close VS Code and open it again. If it still does not appear, speak to the instructor
Cannot sign in	Check whether you have accepted the invitation from the link in the email. Also look in your spam folder
No reply comes back	The company network may be restricting access. The instructor will check individually

Symptom	What to check
What you built does not run	Check that you saved the file. If the screen is blank, press F12, paste the one red line as it is, and ask for help

It is fine if it is not fixed on the same day. We will handle it individually before the next session.

After the course

You can use the same approach after the course ends. Prepare your request, then check what comes back yourself. Taking home just this order is enough.

▼ If you want to go further

When your data grows to hundreds of thousands of rows, when you need to match several records by time, or when you need statistical tests, adopting Python is the next option. The approach you learn in this course, deciding "what to ask the AI and how," carries over as it is.

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