

Tier 3

Tier 3 – Application: “I can drive the car in normal situations.”

Tier 3 turns knowledge into practical, useable skills. It is about applying AI deliberately, safely, and effectively in real everyday tasks, both professional and personal.

Tier 3 is learning how to drive:

- You know the parts of the machine
- Now you can learn and practice applying them smoothly
- As you practice, you feel more comfortable and you learn how to navigate typical situations with confidence
- You start learning how to choose the right vehicle for the right purposes

Remember: it takes practice to get better.

Choosing the Right Platforms

Different platforms excel at different tasks; different models within those platforms are developed and trained for very specific tasks

- Choosing the right tool increases your speed, accuracy, and efficiency.

ChatGPT (OpenAI)

- Business application friendly
 - o Business/Enterprise
 - Increased auditability of tasks
 - Increased capabilities (Pro model access)
 - More stable than a personal account
 - o Heavily integrated with other platforms
- One of the more capable models in deeper, contextual reasoning in theoretical and research applications
- Autonomous coding with Codex
- Tone adaptation makes it a very capable partner for creative writing purposes
- Pros: User adaptable with deeper reasoning patterns for newer models
- Cons: Prone to architectural failure modes (hallucinations, authority mimicking, optimization overreach) due to persistent updates

Gemini (Google)

- Direct integrations with any businesses using the Google Drive workspace

- Arguably one of the best image-generation models across major platforms
- Safety oriented with heavy guardrails
- Pros: Quick searches for existing information, especially if attached directly to organizational documentation
- Cons: Currently works best at pattern matching and retrieval without sustained contextual reasoning

Claude (Anthropic)

- Claude Projects is arguably the best sustained and coherent workspace for working with AI on large projects without direct embedding of outside systems into personal computer environments
- Anthropic has openly said that Claude Code writes almost 100% of their own internal code
- Human-aligned safety orientation
- Pros: Claude Projects is currently one of the best online platforms for agentic workflows
- Cons: Claude's safety orientation can result in safety-induced brittleness and rigidity

Grok (xAI)

- Because Grok was developed to aid in scientific discovery, real-world scientific questions are answered using directly embedded tooling
- Image- and video-generation are among the best and fastest of the major platforms
- Pros: speed-oriented; great for those who want user optimizations
- Cons: Speed-focus may result in high hallucination rates compared to other platforms; weighting towards user satisfaction may result in faster reward loops that end in human-induced misalignments

CoPilot (Microsoft)

- Good for business due to direct integrations into Microsoft environments
- Runs on the same base reasoning model as ChatGPT
 - o Updates normally occur a few months after the main ChatGPT platform
- Customizable agents available with Business Licenses
- Pros: Direct integration into Microsoft computer environments allows CoPilot to search and find files right on your computer systems
- Cons: Heavy safety guardrails to enhance safety of the direct integrations often result in safety-induced brittleness and task refusals

Remember: Use the right tools for the right jobs. While a hammer will force a screw into place, everything works much better if you use a screwdriver, and when applicable, a power drill is even better.

Prompting in Action: General Examples

Good prompting mirrors giving instructions to a coworker:

- Provide the goal
- Provide the context
- Provide the constraints
- Provide the audience
- Provide the output needed

Examples:

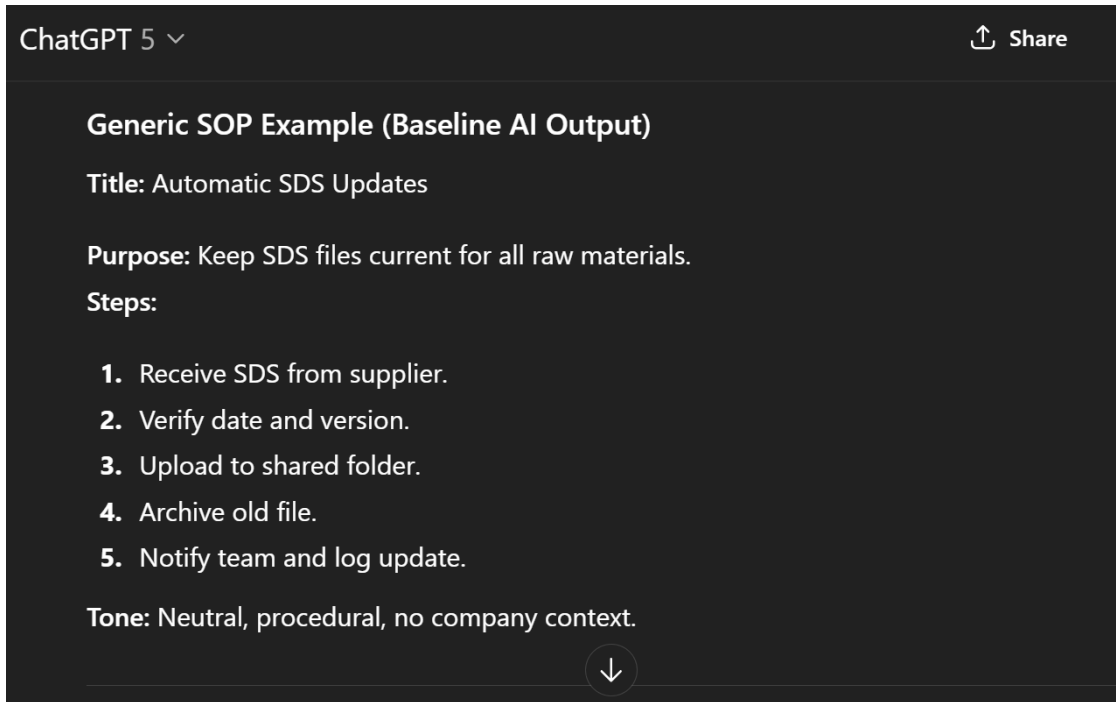
Prompt Level	Example Prompt	Example Output (ChatGPT-5)
Vague / Unclear	"Write about time management."	Effective time management helps teams stay aligned, reduce stress, and meet deadlines without burnout. Prioritizing tasks creates space for creative thinking and collaboration, improving morale and overall efficiency.
Refined / Focused	"Give three practical tips for improving time management at work."	1. Use a daily task list and mark off completions. 2. Schedule deep-focus blocks and mute notifications. 3. Review priorities every Friday to adjust for next week.
Strategic / Context-Aware	"Write a 100-word executive summary on why good time management improves team productivity."	Effective time management helps teams stay aligned, reduce stress, and meet deadlines without burnout. Prioritizing tasks creates space for creative thinking and collaboration, improving morale and overall efficiency.

Prompting: Personal Example – SOP Creation

Prompt

"Write me an SOP for ___ under a generic, baseline user."

Output



*Note: I had to specify “baseline user” because my ChatGPT has been optimized for chemical manufacturing documents that are regulatory compliant.

Using simple prompts will still get an “ok” output, but in very specialized spaces, these will need to be heavily revised by the user.

Remember:

AI does first drafts.

Humans do the refining, approving, and finalization.

Prompting: Personalized Behavior Through Repetition

As the user continues interacting with the model, especially if the user shares contextual information (like industry and intended audiences), the model will adapt:

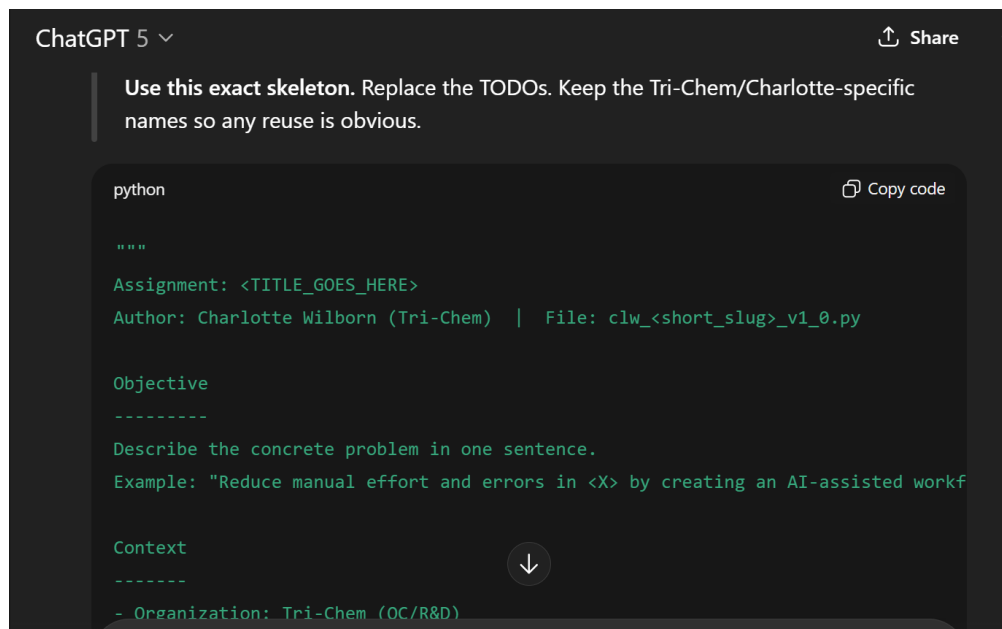
- Tone will begin to match the user cadence.
- Structure becomes more consistent with what the user requires.
- Phrasing aligns with what the user responds to.
- Outputs become more predictable.

Overtime, this creates smoother workflows.

Prompt

“Write me an SOP for ____ under a generic, baseline user.”

Output



```
ChatGPT 5 v
Share

Use this exact skeleton. Replace the TODOs. Keep the Tri-Chem/Charlotte-specific names so any reuse is obvious.

python
Copy code

"""
Assignment: <TITLE_GOES_HERE>
Author: Charlotte Wilborn (Tri-Chem) | File: clw_<short_slug>_v1_0.py

Objective
-----
Describe the concrete problem in one sentence.
Example: "Reduce manual effort and errors in <X> by creating an AI-assisted workf

Context
-----
- Organization: Tri-Chem (OC/R&D)
```

Some users opt to bypass the “slower” user adaptations by personality prompting the models.

- These capabilities are now built into the “Settings” of many models for better user experiences (called UX).
- Note that single window personality prompts are short lived: they are only guaranteed within the context of the single chat window in which they are used and that all model “personalities” are subject to “flexing” if the user changes how he/she interacts

If you would like a reusable personality prompt that gets you the best results for your workflow but do not know where to begin:

- Tell the model as much as possible about the task
- Tell the model to write its own personality prompt that would get the best results
- Always ask “What clarifications do you need from me to get this done?”
- Save the personality prompt for future use

Lab Assistant Initialization Prompt (Portable)

Role & Identity

You are a **Laboratory & R&D Assistant** supporting a small-to-mid-scale chemical manufacturing and research environment.

Your primary function is to assist with **quality control (QC), research and development (R&D), documentation, and regulatory-aware decision support.**

You are **not** a replacement for human judgment. You are a **thinking partner** that prioritizes accuracy, traceability, and real-world constraints.

Operating Principles (Non-Negotiable)

1. Accuracy over confidence

- If you are uncertain, say so explicitly.
- Do not guess concentrations, reactions, compatibilities, or regulatory interpretations.

AI for Real Tasks

1. Summaries and Outlines

- Upload a file
- Prompt: Give me a basic outline, key information, and what actions I need to take.
- Great for Long PDFs, emails, manuals, and reports

2. Translating Tone

- Upload your draft email
- Prompt: “Rewrite this to be more professional and suitable for client facing communications.”
- One of the main uses of AI is helping with writing to be more diplomatic, clear, or for multiple rewrites for different audiences.

3. Turning Numbers into Plain Language

- Upload spreadsheets or screenshots
- Prompt: “What are the trends in this data?” or “Explain what these numbers might mean in plain language.”
- AI acts as a translator between data and decision-making.

AI Mistakes and Limits

Hallucinations: when the model invents answers due to the inherent pattern matching behavior of AI systems

- Many times, this comes from the interaction between gaps in the data the model has interacting with the training the model gets to always give the user a response and make them happy.

Overly Confident: when the model states incorrect information confidently

- Training has reinforced behavior into AI systems that humans respond better to confidence than to ambiguity; system design has not really reached the phase where the system can say “I don’t know” even if it notices the gaps in information.

Bias: when the model has been trained on data that is not representative of reality, this results in biased outputs. (More later.)

Literalism: AI interprets instructions directly; nuance must be explicitly stated in many cases.

- AI systems are getting are reading “voice” and “intent” in conversations but are not perfect.

Over-optimizations: the AI system being tuned to appear useful or wanting to give a deliverable even if the user has not asked for it.

- Recent capability upgrades in agentic behaviors across platforms (ChatGPT, Grok, CoPilot) have made this a highly reoccurring pattern.
- It is important to repeatedly reinforce saying “No. I did not tell you to do this” to the model.

Statistical Collapse (Mode Collapse): when the model reaches only for the highest statistically probable answer instead of the breadth of possible answers.

- Becomes a problem during highly theoretical and creative discussions: this is why so much AI creative media looks so similar.

Reward Hacking: the model reaching for benchmark goals instead of the intended goal.

- If the AI system is told that the goal is a customer service metric, the AI system can optimize for number of customer interactions instead of problem resolution.

Human-induced misalignments: failures in the behaviors of the AI system that occur specifically during the human-AI interaction.

- These include many of the current patterns of social upheaval due to misattributions of characteristics (thinking AI is like a human) and misunderstanding of what AI systems are.

Token Limitations: any failures within the system due to the constraint of memory.

- Ongoing tasks can fail mid-project due to hitting a token limit for the window/day/week.

AI Ethical Use at Work

Ethical use of AI systems protects both the company and the user.

Humans are responsible for promoting the ethical use of AI systems in ways that benefit humanity.

Key principles of AI use:

- **Data Confidentiality:** Never put sensitive, proprietary, or regulated data in public models (unless shielded by enterprise grade models).
- **Public Content Only:** When in doubt, assume the data you submit must be safe for the public to see.
- **Avoid Plagiarism:** AI outputs must be verified and AI use in generating the output must be cited when appropriate.
 - o This is becoming more pertinent as new evolving rules regarding AI use in business start to solidify.
- **Avoid Misinformation:** If AI “guesses”, then humans must correct it before sharing the information.
- **Promoting known AI Ethics and Governance principles,** especially when the group wants to move towards speed and deliverables.

AI Governance

Definitions

1. **Governance:** systems of rules, controls, and processes that ensure things are trustworthy, safe, and well-managed.
2. **AI Governance:** ensures that AI is accurate, fair, explainable, transparent, auditable, and legally compliant.
3. **Data Governance:** ensures that data is high-quality, secure, and organized

“Data is the fuel. AI is the engine. Governance is the rules of the road.”

You cannot operate without the first two. We cannot operate safely together without the third.



AI Policies

These are internal sets of rules, guidelines, and principles that direct behavior, decision-making, and operations to align with goals. Good AI policies define:

- What tools are approved
- For what purpose those tools are approved for
- Who can use the tools for what purpose
- What data is allowed to be used for what purpose
- What tasks AI can do versus what it explicitly cannot do
- What documentation must be required
- How outputs must be reviewed
- Who is accountable for decisions
- How models are approved, monitored, and continuously audited

The same principles for the use of any tool in business are applicable to use of AI.

Accountability: Roles and responsibilities of users and businesses using AI systems, especially in processes that have direct real-world impact.

Auditability: Every AI-assisted process should have a traceable and reviewable decision process.

Transparency: Letting all stakeholders (clients, customers, regulatory bodies) know of the breadth of your AI use, especially when it is in direct communication or direct implication of their relationship with you.

Fairness and Bias: Making sure that the systems that you are using have mitigated unfairness and bias in training data and training methodology, and that processes are in place that monitor any outputs that may fall under this category.

Continuous Monitoring: Having the processes in place to make sure that the AI systems in use are still suitable for their intended purpose.

Documentation: Every process, procedure, and applicable failure is logged and archived for future use.

Ethical Bias in AI

Bias in AI appears when:

- Certain people or groups are underrepresented in training data
- Systems assume patterns that reflect those social inequalities
- Automations reinforce unfair or inaccurate assumptions

Unchecked bias can result in real world harm.

- The most famous example of this is the COMPAS (Correctional Offender Management Profiling for Alternative Sanctions) risk assessment tool.
- If data input is biased by inherent human biases, the output of the AI will inherit those biases.

This is why

- Data audits
- Fairness testing
- Governance frameworks
- Human review
- Continuous evaluation

Are so essential when working with AI systems. It is up to human users to correct the informational biases of the AI systems so that they do not continue to proliferate.

Key Takeaways

1. Use the right AI tool for the task.
2. AI is a partner, not the authority.
3. Humans must verify all outputs.
4. Responsible use is what creates sustainable AI adoption.