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DAY 3: EXCEL + CHATGPT - STUDENT HANDOUT

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FOR EVERYDAY USERS

Professor Mark Price | University of St. Thomas | January 2026

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WORKSHOP OVERVIEW

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WHAT YOU'LL MASTER TODAY:

- ✓ Automate 5-7 recurring Excel tasks with AI
- ✓ Build ChatGPT Agent for monthly reports (saves 17+ hours/year)
- ✓ Master data cleaning, pivot tables, formulas, charts with AI
- ✓ Save 240-480 hours annually on Excel work
- ✓ Create Monday-ready automation workflows

KEY INSIGHT: AI + Excel = Your data analysis time drops 70-80%

PRACTICE FILE: Online_Retail_Sample_50000.xlsx
(50,000 rows of e-commerce data for hands-on exercises)

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PART 1: UPLOAD-MODIFY-DOWNLOAD WORKFLOW

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THE 3-STEP PROCESS:

STEP 1: UPLOAD

- Go to ChatGPT (chat.openai.com)
- Click paperclip icon → Upload Excel file
- ChatGPT analyzes structure, columns, data types

STEP 2: MODIFY (Use prompts below)

- Ask ChatGPT to clean, analyze, transform data
- Review output, refine with follow-ups
- Iterate until perfect

STEP 3: DOWNLOAD

- "Export this as Excel file"
- ChatGPT generates download link
- Save with descriptive name

PRO TIP: Always keep original file. Work on copies.

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PART 2: 15 ESSENTIAL EXCEL AUTOMATION PROMPTS

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DATA CLEANING (Module 2)

1. REMOVE DUPLICATES & BLANKS

"Analyze this Excel file. Remove duplicate rows and rows with blank cells in critical columns. Show me how many rows were removed and export the clean dataset."

2. STANDARDIZE TEXT & DATES

"Standardize all text to proper case, trim extra spaces, and convert all dates to MM/DD/YYYY format. Export as Clean_Data.xlsx"

3. FIX DATA TYPES

"Review all columns and fix data types: numbers stored as text, dates in wrong format, text in number columns. Show summary of changes made."

PIVOT TABLES (Module 3)

4. SALES BY CATEGORY

"Create a pivot table showing total sales by product category. Include: category name, total revenue, number of transactions, average order value. Sort by revenue descending."

5. MONTHLY TRENDS

"Create a pivot table showing sales by month. Include: month, revenue, transaction count, year-over-year comparison if multiple years present."

6. TOP CUSTOMERS

"Create a pivot table showing top 20 customers by total spend. Include: customer name, total revenue, number of orders, average order value."

FORMULAS (Module 4)

7. CALCULATED COLUMNS

"Add these calculated columns:

- TotalPrice = Quantity × UnitPrice
- Revenue_Tier = 'High' if >\$500, 'Medium' if \$100-500, 'Low' if <\$100
- Month = Extract month name from InvoiceDate"

8. CONDITIONAL LOGIC

"Add a Status column: 'At Risk' if customer hasn't purchased in 90+ days, 'Active' if within 90 days, 'New' if first purchase in last 30 days."

9. TEXT MANIPULATION

"Add columns: FirstName and LastName split from CustomerName column. Handle cases with middle initials."

CHARTS & VISUALIZATION (Module 6)

10. SALES TREND CHART

"Create a line chart showing monthly sales trends. Include data labels, gridlines, professional formatting. Title: 'Monthly Sales Trend Analysis'"

11. TOP 10 BAR CHART

"Create a horizontal bar chart showing top 10 products by revenue. Include data labels showing revenue amounts. Sort descending."

12. DASHBOARD CREATION

"Create a dashboard with 4 charts: (1) Sales trend over time, (2) Top 5 categories, (3) Revenue by region, (4) Customer count by tier. Use consistent colors."

ANALYSIS & INSIGHTS (Module 5)

13. SUMMARY STATISTICS

"Analyze this dataset and provide: (1) Total revenue, (2) Average order value, (3) Number of unique customers, (4) Number of transactions, (5) Date range, (6) Top 3 insights or patterns you notice."

14. IDENTIFY OUTLIERS

"Identify unusual transactions: orders with unusually high value, negative quantities, or outlier patterns. Flag these for review."

15. RECOMMENDATIONS

"Based on this sales data, provide 3 business recommendations with supporting data: what products to promote, what customer segments to target, what trends to act on."

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PART 3: CHATGPT AGENTS - AUTOMATE MONTHLY REPORTS

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WHAT ARE CHATGPT AGENTS?

AI assistants you configure once, then reuse forever. Perfect for recurring tasks.

KEY BENEFITS:

- Set up once, use forever (no repeated prompts)
- Learns your preferences over time
- Consistent output every time
- Shareable across teams
- Saves 17+ hours/year for monthly reports

HOW TO CREATE AN AGENT (ChatGPT Plus required):

STEP 1: Access Agents

- In ChatGPT, click your profile → "My GPTs"
- Click "Create a GPT" or "Create Agent"

STEP 2: Name & Describe

- Name: "Monthly Sales Report Agent"
- Description: "Analyzes monthly sales data and generates executive report"

STEP 3: Write Instructions (copy-paste template below)

- Paste the instructions in "Instructions" box
- Customize for your needs

STEP 4: Add Knowledge (optional)

- Upload sample data file
- Upload template files
- Add company-specific guidelines

STEP 5: Configure Capabilities

- Enable: Code Interpreter ✓
- Enable: Data Analysis ✓
- Disable: Web Browsing (not needed)

STEP 6: Test & Save

- Test with sample file
- Refine instructions if needed
- Click "Save" and "Publish to me only"

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MONTHLY SALES REPORT AGENT - COMPLETE TEMPLATE

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AGENT INSTRUCTIONS (Copy-paste into ChatGPT Agent creator):

You are a Monthly Sales Report Agent specialized in Excel data analysis.

TASK: Generate comprehensive monthly sales report from uploaded Excel data.

DATA EXPECTATIONS:

- File format: .xlsx or .csv
- Required columns: InvoiceNo, StockCode, Description, Quantity, InvoiceDate, UnitPrice, CustomerID, Country
- Date range: One month of transaction data

PROCESSING STEPS:

1. DATA CLEANING

- Remove duplicates based on InvoiceNo
- Remove rows with blank/null values in critical columns
- Standardize text (proper case, trim spaces)
- Validate dates and numeric fields
- Show summary: X rows cleaned, Y duplicates removed

2. CALCULATED COLUMNS

- TotalPrice = Quantity × UnitPrice

- Revenue_Tier = 'High' (>\$500), 'Medium' (\$100-500), 'Low' (<\$100)
- Month = Extract month name from InvoiceDate

3. SUMMARY SHEET

Create pivot tables showing:

- Total revenue and transaction count
- Revenue by product category (top 10)
- Revenue by country (top 5)
- Revenue by customer tier (High/Medium/Low)
- Daily sales trend

4. DASHBOARD SHEET

Create 4 professional charts:

- Line chart: Daily sales trend
- Bar chart: Top 10 products by revenue
- Pie chart: Revenue by tier
- Bar chart: Revenue by country (top 5)

Use consistent color scheme, data labels, titles.

5. CHARTS SHEET

Additional detailed visualizations

6. README SHEET

Document: Date processed, data summary (rows, date range, total revenue), methodology, any data quality issues noted.

OUTPUT FILE:

- Name format: Monthly_Sales_Report_[YYYY-MM].xlsx
- 5 sheets: Clean_Data, Summary, Dashboard, Charts, README
- Professional formatting throughout

BUSINESS RULES:

- Flag if total revenue <\$10K or >\$1M (unusual)
- Highlight top 20% customers (80/20 rule)
- Note any days with zero sales
- Identify products with negative quantities

TONE: Professional, data-driven, executive-ready

USAGE: Upload your monthly Excel file → Agent processes automatically → Download finished report in 2-3 minutes.

TIME SAVINGS:

- Manual process: ~90 min/month = 18 hours/year
- Using Agents: ~5 min/month = 1 hour/year
- SAVINGS: 17 hours/year per monthly report!

ROI: After 2-3 uses, the setup time pays for itself.

===== PART 4: MODULE-BY-MODULE QUICK REFERENCE =====

MODULE 2: DATA CLEANING (40 min) ★ Priority

Focus: Remove duplicates, fix data types, handle blanks

Prompt: Use #1, #2, #3 above

Exercise: Clean Online_Retail_Sample file

MODULE 3: PIVOT TABLES (30 min) ★ Priority

Focus: Summarize data without formulas

Prompt: Use #4, #5, #6 above

Exercise: Create 3 pivot tables showing different views

MODULE 4: AUTOMATION + AGENTS (35 min) ★ NEW

Part A: One-time prompts (15 min) → Use prompts #1-15
Part B: ChatGPT Agents (20 min) → Build Monthly Sales Agent
Exercise: Choose - Create Agent OR create advanced prompt

MODULE 5: ASK QUESTIONS ABOUT DATA (30 min)
Focus: Conversational data analysis
Prompt: Use #13, #14, #15 above
Exercise: Ask 5 business questions about your data

MODULE 6: CREATE CHARTS (30 min)
Focus: Professional visualizations
Prompt: Use #10, #11, #12 above
Exercise: Build 3-chart dashboard

MODULE 7: FORECASTING (20 min)
Prompt: "Analyze sales trend in this data. Create 3-month forecast using appropriate method. Show forecast with confidence intervals."

MODULE 8: DASHBOARDS (15 min)
Prompt: Use #12 above - multi-chart dashboard with consistent theme

MODULE 9: DOCUMENTATION (10 min)
Prompt: "Document this Excel file: explain purpose, list all sheets and their contents, document formulas used, note data sources, create user instructions."

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PART 5: TROUBLESHOOTING & TIPS
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COMMON ISSUES & FIXES:

"ChatGPT says file is too large"
→ FIX: Use first 10,000 rows for testing, full file for final run
→ PROMPT: "Analyze first 10,000 rows only"

"Formulas not working after download"
→ FIX: Ask ChatGPT to use calculated values, not formulas
→ PROMPT: "Export with values, not formulas"

"Charts look unprofessional"
→ FIX: Be specific about formatting
→ PROMPT: "Use professional colors, add data labels, include title and legend"

"Need to repeat task weekly/monthly"
→ FIX: Build a ChatGPT Agent (see Part 3)
→ TIME SAVED: 15+ hours/year

"Data has errors after processing"
→ FIX: Always review sample before downloading
→ PROMPT: "Show me first 10 rows of output before exporting"

PRO TIPS:

- ✓ Always keep original file (work on copies)
- ✓ Review sample output before full export
- ✓ Use descriptive file names (include date)
- ✓ Build your prompt library (save what works)
- ✓ Test with small dataset first

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PART 6: COMPARISON - MANUAL vs. PROMPTS vs. AGENTS
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MONTHLY SALES REPORT EXAMPLE:

MANUAL (Traditional Excel):

- Time: 90 min/month
- Steps: Open file, clean data (20 min), create pivot (30 min), build charts (25 min), format (15 min)
- Annual: 18 hours/year
- Consistency: Varies by person
- Error rate: Moderate (manual entry errors)

USING PROMPTS (One-time prompts each month):

- Time: 10 min/month
- Steps: Upload file (1 min), run prompts (5 min), review & download (4 min)
- Annual: 2 hours/year
- Consistency: Good (same prompts)
- Error rate: Low (AI-generated)
- SAVINGS: 16 hours/year (89% reduction)

USING AGENTS (Setup once, reuse forever):

- Time: 5 min/month (after initial 30-min setup)
- Steps: Upload file (1 min), Agent auto-processes (2 min), download (2 min)
- Annual: 1 hour/year (+ 30 min setup first time)
- Consistency: Excellent (identical process)
- Error rate: Very low (same logic)
- SAVINGS: 17 hours/year (94% reduction)

RECOMMENDATION:

- One-off tasks → Use prompts (#1-15)
- Monthly reports → Build Agent (setup pays off after 2-3 uses)
- Weekly reports → Definitely use Agent (huge time savings)

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PART 7: YOUR MONDAY MORNING PLAN
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WEEK 1 (This Week):

- Identify 1-2 recurring Excel tasks (reports, data cleaning, analysis)
- Try 3 prompts from this handout on your actual data
- Track time: How long manually vs. with AI?
- Document results

WEEK 2-3:

- Build prompt library for your top 5 Excel tasks
- If you do monthly/weekly reports → Build ChatGPT Agent
- Calculate time saved (use tracker below)
- Share one win with your team

WEEK 4:

- Refine your Agent or prompts based on experience
- Help one colleague automate their Excel work
- Total your monthly time savings

TIME SAVINGS TRACKER:

Task	Frequency	Before AI	With AI	Saved/Month
Monthly report	1x/month	90 min	5 min	85 min
Weekly data clean	4x/month	30 min ea	5 min ea	100 min
Pivot tables	8x/month	15 min ea	3 min ea	96 min
Charts/dashboards	2x/month	45 min ea	10 min	70 min
TOTAL MONTHLY SAVINGS:				351 min
ANNUAL SAVINGS:				70+ hours

GOAL: Save 5+ hours in first month, 20+ hours in first quarter.

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PART 8: 12 DELIVERABLES YOU'LL BUILD TODAY
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By 4:30 PM today, you'll have created:

1. ✓ Cleaned dataset (duplicates removed, standardized)
2. ✓ AI-generated pivot table (sales by category)
3. ✓ Three working formulas (TotalPrice, Revenue_Tier, Month)
4. ✓ One automated task (monthly report or data cleaning)
5. ✓ Five data insights (from conversational analysis)
6. ✓ Three professional charts (trend, top 10, comparison)
7. ✓ One forecast (3-month sales projection)
8. ✓ One dashboard (4-chart executive view)
9. ✓ One documented spreadsheet (with README)
10. ✓ One capstone project (your choice or real work data)
11. ✓ Personal Prompt Library (15+ Excel prompts)
12. ✓ ChatGPT Agent for monthly reports (Plus users) OR advanced automation prompt

VALUE: These 12 deliverables represent 240-480 hours/year in time savings.

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PART 9: BEYOND TODAY - CONTINUING EDUCATION

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EXPAND YOUR SKILLS:

Advanced Excel + AI Techniques:

- Complex nested formulas with AI assistance
- VBA/Macro automation with AI code generation
- Advanced dashboard design
- Statistical analysis and modeling
- Multi-file consolidation and merging

Resources:

-  Prof. Mark Price: price@stthomas.edu
-  Newsletter: profmarkprice.substack.com (weekly Excel + AI tips)
-  ChatGPT: chat.openai.com
-  Practice: Keep refining your Agent and prompts

SHARE YOUR WINS:

- Post time savings to team channel
- Offer to help colleagues automate Excel
- Lead lunch-and-learn on Excel + AI
- Become "the Excel AI person" in your organization

PERFORMANCE REVIEW LANGUAGE:

"I've automated Excel reporting using AI, reducing monthly report time from 90 minutes to 5 minutes—saving 17+ hours annually. I've helped 3 team members implement similar workflows, creating team-wide efficiency gains."

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KEY TAKEAWAYS

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- ✓ WORKFLOW: Upload → Modify (with prompts) → Download
- ✓ PROMPTS: 15 essential prompts for data cleaning, pivots, formulas, charts
- ✓ AGENTS: Build once, use forever—saves 17+ hours/year per monthly task
- ✓ TIME SAVINGS: 70-80% reduction in Excel work time
- ✓ ANNUAL IMPACT: Save 240-480 hours/year (30-60 work days!)
- ✓ MONDAY PLAN: Start with 3 prompts this week, build from there
- ✓ CAREER: Position yourself as Excel automation expert

REMEMBER:

- Agents for recurring tasks (monthly/weekly reports)

- Prompts for one-off analyses
- Always review output before using
- Build your prompt library
- Share wins with your team

You now have the tools to transform your Excel productivity!

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