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CLAUDE.md

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This file provides guidance to Claude Code (claude.ai/code) when working with code in this repository.

Project Overview

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This is a Quarto-based educational repository containing slide presentations for an "Introduction to Engineering Mathematics" course. The presentations cover topics from trigonometry to integration and are rendered as Beamer PDFs for academic use.

Common Commands

Rendering Presentations

Preview a single presentation:

```
quarto preview presentations/<name-of-slidedeck.qmd>
```

Render a single presentation to PDF:

```
quarto render presentations/<name-of-slidedeck.qmd>
```

Render all presentations using Make:

```
cd presentations
make all
```

Render individual presentation using Make:

```
cd presentations
make <presentation-name>.pdf
```

Publishing

Publish to GitHub Pages:

```
quarto publish gh-pages
```

Environment Setup

Create Conda environment for Python code execution:

```
conda create --yes -n engineering-math python=3.10 jupyter
conda activate engineering-math
```

Repository Structure

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- `presentations/` - Main content directory containing Quarto markdown (.qmd) files for each presentation
- `presentations/images/` - Subject-specific image folders organized by topic (01-trigonometry/, 02-coordinate-geometry/, etc.)
- `presentations/header.tex` - Common LaTeX header with Beamer styling and custom commands
- `presentations/Makefile` - Build automation for rendering all presentations
- `extra-material/` - Additional LaTeX documents and problem sets
- `_quarto.yml` - Quarto project configuration (website type, output directory)
- `index.qmd` - Main landing page listing all presentations
- `_freeze/` - Quarto cache directory for executed code blocks

Architecture Notes

Presentation Format

- Presentations use Quarto markdown with YAML frontmatter
- Target format is Beamer (LaTeX) for PDF output
- Common styling defined in `presentations/header.tex`
- Images use SVG format when possible for scalability

Content Organization

- Each major topic has multiple presentation parts (e.g., 01a, 01b, 01c for trigonometry)
- Images organized by topic in subdirectories under presentations/images/
- Mathematical drawings created with Inkscape using IBM colorblind-friendly palette

Python Integration

- Some presentations contain embedded Python code blocks
- Quarto executes Python code during rendering and inserts output
- Requires `engineering-math` Conda environment for mathematical packages

Visual Guidelines

- Colors follow the 5-shade IBM colorblind-friendly palette
- Color palette file available in `tools/ibm.gpl`