Practicum of Information Technology

Brief description of each meeting:

Lesson Code	Description
1501	Self Introduction / TEKS Review
1502	Unit 1-1 Identifying meaningful problems worth solving through information technology
1503	Unit 1-2 Evaluating existing solutions and proposing a justified technological approach
1504	Unit 1-2checkpoint Real problems first. Clear problems win.
1505	Unit 1-3 Identifying constraints and defining a realistic, achievable MVP
1506	Unit 1-4 Creating visual or functional representations of the solution
1507	Unit 1-5 Refining prototypes and preparing professional presentations
1508	Unit 1-6 Professional presentations and portfolio finalization
1509	Unit 2-1 **Project Launch + Foundations:** Introduce the Internet-connected clock project, explain learning goals and safety, form teams, create group contracts, review electronics basics (voltage, current, polarity), and complete a short written plan outlining what “success” looks like.
1510	Unit 2-2 **Hardware Deep Dive:** Hands-on exploration of all components (microcontroller, LED matrix, power, resistors, wiring), reading schematics, labeling parts, practicing breadboard connections, and completing a guided “component identification lab.”
1511	Unit 2-3 **Programming Environment Bootcamp:** Install and configure the IDE, learn to compile and upload code, practice editing simple variables in a starter sketch, and complete a mini-assignment modifying display text or colors.
1512	Unit 2-4 **Soldering Training + Certification:** Direct instruction on soldering safety and technique, guided practice on test boards, individual skill checks, and beginning soldering of real project components.
1513	Unit 2-5 **Core Hardware Assembly:** Complete soldering and physical assembly of the clock hardware, wire the LED matrix to the microcontroller, test power circuits, and troubleshoot basic connection issues as a team.
1514	Unit 2-6 **Code Walkthrough + Display Logic:** Step-by-step lesson through the provided clock program, explanation of how time is calculated and displayed, small coding exercises, and teams documenting how the software interacts with the hardware.
1515	**FLEX DAY:** Dedicated time for teams to catch up, re-solder, rewire, fix broken code, get one-on-one help, or redo earlier steps as needed.
1516	Unit 2-7 **Networking Concepts + Wi-Fi Setup:** Mini-lessons on IP addresses and networks, configuring the device to join Wi-Fi, testing connectivity, and learning how the clock retrieves time from the internet.

1517	Unit 2-8 **Remote Control Interface:** Guided lesson on simple web interfaces or control commands, teams implementing basic remote features (change colors, set brightness, display messages), and testing functionality from a phone or laptop.
1518	Unit 2-9 **Troubleshooting & Reliability Testing:** Systematic debugging day where teams diagnose hardware and software issues, stress-test their builds, learn to use multimeters, and document fixes in a technical log.
1519	Unit 2-10 **Customization & Documentation:** Teams add one approved custom feature, finalize wiring and enclosure, write a build guide explaining their process, and prepare presentation materials.
1520	Unit 2-11 **Presentation, Demo, and Reflection:** Formal team demonstrations of the working clocks, peer feedback, written technical reflections, and discussion connecting the project to real-world IT and engineering practices.
1521	Unit 2-12 FLEX DAY