

MET 1151: Guitar Manufacturing using Science, Technology,
Engineering, & Mathematics (STEM) Concepts
Credit Type – **Proficiency**



MIAMI VALLEY
TECHPREP
CONSORTIUM

Course Description and Learning Outcomes:

<https://www.sinclair.edu/course/params/subject/MET/courseNo/1151/>

Faculty Pathway Specialist(s) (Please include name, email):

Michael Neal, michael.neal1@sinclair.edu

Resources Needed to Offer Course (software, equipment, books [include ISBN and edition], etc. – please include any associated costs):

Kits and guitar-building supplies are available through <https://guitarbuilding.org>. Prices below are accurate as of Spring 2026.

A guitar kit must be purchased for each student. Kits are \$267.00 each.

A sample list of tools and supplies is provided at <https://guitarbuilding.org/institute/> (click Toolkit Parts List).

In summary, the following supplies are generally one-time startup costs:

- Specialized guitar making tools are required. An “Electric Classroom Start-up Guitar Tool Kit” is available for \$838.00 with enough tools to support a group of 6-8 students building individual electric guitars.
- A Drill Block Kit includes all required drill bits for \$115.00.
- Woodworking and hand tools such as a band saw, belt sander, workbenches with vises, cordless drills, screwdrivers, and more.
- For electronics, soldering irons, wire strippers, side cut pliers, multi-meters, and more are required.
- Guitar tuners, guitar picks, and an amp are recommended as well.

Consumable supplies include paint and finishing supplies, sandpaper, disposable gloves and rags, solder, and PPE such as safety glasses and hearing protection.

Please contact us to discuss all equipment and supply needs.

How is the final grade for the course determined? (Please list all required assignments, assessments, etc.)

ASSIGNMENT	POINTS
Guitar Kit Cost Out Assignment	10
CAD Headstock Drawing Assignment	10
Fret Spacing Calculation Assignment	10
Final Guitar Evaluation Rubric	70
Total Points	100

Who is responsible for grading the required assignments and/or assessments? (faculty or instructor?)
Classroom Instructor
What is the grading scale for the course?
A: 90% - 100% B: 80% - 89.9% C: 70% - 79.9% D: 60% - 69.9% F: 0% - 59.9%
Must students access the eLearn shell regularly to complete requirements?
Students must submit assignments through eLearn or a pre-determined method with the instructor.
Does the course require access to YouTube, Google Drive, etc.?
Some resources are provided through YouTube. These videos are optional resources for reference.
Additional course details or requirements important for instructors not covered above:
Most common (or popular) degrees this course is in?
Mechanical Engineering Technology MEGT.S.AAS Manufacturing Engineering Technology MENT.S.AAS Mechanical Technician MECHTECH.S.STC (Short-Term Certificate)