Course:	**Sound Engineering 101: Foundations of Audio Production**
Guided Learning Hours:	24 Hours 8 Lessons (3 hours per session)
Pre-requisite:	No prior sound engineering experience is necessary – this course is suitable for complete beginners. Basic computer literacy is recommended (navigating files, using software, etc.). A passion for audio, music, or media production is encouraged. Access to a laptop or desktop computer for DAW-related lessons (Mac or PC). Headphones or speakers for critical listening exercises (preferably studio-quality, but not mandatory). DAW (free or paid, e.g., Audacity, Reaper, Pro Tools First) (Optional but helpful) Access to a basic home recording setup, such as: Audio interface, Microphone.

Abstract: The *Introduction to Sound Engineering* course is designed to equip beginners with a comprehensive foundation in the principles and practices of audio engineering. Spanning eight in-depth lessons, this hands-on program explores the science of sound, studio and live audio equipment, and practical techniques in recording, mixing, and basic mastering. Students will gain essential knowledge of acoustics, signal flow, microphone techniques, digital audio workstations (DAWs), EQ, dynamics processing, effects, and live sound reinforcement. Through guided instruction and practical application, participants will develop the skills necessary to navigate both studio and live sound environments with confidence, preparing them for further study or entry-level opportunities in the audio industry.

Target Audience:

Aspiring Sound Engineers looking to explore the fundamentals before committing to more advanced training.

Musicians, singers, and producers who want to learn how to record and mix their own music.

Content creators (YouTubers, podcasters, filmmakers) seeking better control over audio quality.

Students exploring careers in the audio or media industry who need a practical, beginner-friendly entry point.

Hobbyists and audio enthusiasts with an interest in learning how sound works and how to work with sound equipment.

Event or church audio volunteers who want to improve their live sound skills and troubleshoot effectively.

Learning Outcomes: To provide students with a fundamental understanding of sound engineering, covering key concepts, equipment, recording techniques, and mixing principles.

Course Content

SESSION 1: Introduction to Sound & Acoustics

SESSION 2: Essential Equipment & Signal Flow

SESSION 3: Microphone Techniques & Recording Basics

SESSION 4: Digital Audio Workstations (DAWs) & Recording Workflow

SESSION 5: Mixing Fundamentals – EQ & Dynamics Processing

SESSION 6: Effects Processing & Spatial Techniques

SESSION 7: Basic Mixing & Mastering Techniques

SESSION 8: Live Sound & Practical Application

In order to achieve Learning Outcomes	The participant must ……
1. Understanding sound waves (frequency, amplitude, wavelength) Basics of human hearing and the frequency spectrum Acoustics and how sound behaves in a space Signal flow and the concept of gain structure	Be able to describe what they hear in terms of pitch and volume. Observe how sound changes in a room (echo, reverb, muffled, etc.). Be able to discribe different waveform types
2. Overview of a basic studio setup Microphones: Types and applications (dynamic, condenser, ribbon) Audio interfaces and their role Cables and connectors (XLR, TRS, TS, RCA, etc.)	Signal Path Tracing: Physically set up a basic mic-to-interface-to-speaker signal path. Connector ID Challenge: Identify and connect various cable types (XLR, TRS, RCA, etc.) to the correct inputs/outputs.
3. Microphone polar patterns and their uses Proper mic placement for vocals and instruments Direct Input (DI) vs. Mic Recording Introduction to multi-track recording	Mic Placement Experiment: Test how mic position affects the recording of vocals or an instrument. Record a Short Performance: Use both DI and mic setups to record a simple guitar or vocal track.

4.	Overview of popular DAWs (Pro Tools, Logic Pro, Ableton, Reaper, etc.) Setting up a session: Sample rates, bit depth, and buffer size Recording and overdubbing techniques Introduction to MIDI and virtual instruments	DAW Session Setup: Create a new session with proper sample rate, bit depth, and track layout. Multitrack Recording Demo: Record multiple takes and overdubs using a simple arrangement (e.g., voice and clap or keyboard).
5.	Equalization (EQ): Frequency bands, filtering, and shaping sound Compression: Threshold, ratio, attack, release, and make-up gain Noise gates and expanders Using these tools effectively in a mix	EQ Matching Exercise: Apply EQ to shape one sound to match another using a DAW. Compression Practice: Use a compressor plugin on a vocal or drum loop, adjusting threshold, ratio, and attack/release.
6.	Reverb and delay: Creating depth and space Modulation effects (chorus, flanger, phaser) Stereo imaging and panning techniques Creative sound design with effects	Reverb Comparison: Apply different reverb types to the same audio track and compare their spatial impact. Creative FX Chain Building: Stack modulation effects (chorus, delay, phaser) and describe the sonic result.

7.	Balancing levels and setting a mix foundation Bus routing and summing tracks Introduction to mastering: Limiting, loudness, and finalizing a mix Exporting and optimizing audio for different formats	Basic Mix Session: Balance levels and pan a small multi-track project. Mini Mastering Task: Apply a limiter and check loudness levels, then export for web and mobile playback.
8.	Basics of live sound reinforcement PA systems, mixing consoles, and monitors Troubleshooting common issues in live and studio settings Final review, Q&A, and hands-on mixing session	Final Hands-on Mix: Mix a short multitrack session or live recording using all techniques learned, followed by peer review/Q&A.