

# Introduction:

# Introduction to Music Technology

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- Music technology is a broad term encompassing everything from microphones to saxophones.
  - Most musical activities are impacted by technology in one way or another.
    - Pop musicians use synthesizers for performances.
    - Producers use microphones, mixers, and computers in the recording studio.
    - Composers/arrangers use music notation software.
    - Conductors use recording apps to capture rehearsals for later analysis.
    - Musicians use audio and video editing software to create demos.
    - A concert hall itself is an exquisite piece of technology.
  - There are some main topics that underlie the many different activities in music technology:
    - The physical aspects of sound and sound representation.
    - Audio recording, editing, and processing software, audio hardware, and digital audio data.
    - MIDI sequencing and software instruments, MIDI hardware, MIDI messages, synthesis techniques, and sampling techniques.
    - Computer notation and computer-assisted instruction.
  - Music technology is something to be actively engaged with throughout your professional career.
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## Why Do You Need to Understand Music Technology?

- When it comes to technologies that you are going to use professionally, you must go beneath the surface to find the underlying concepts in order to use them effectively.
  - If you want to create, perform, or educate using music technology, you have to understand how it works in order to use it effectively.
    - Analogy: Someone who simply watches movies does not need to know how movie cameras work or how CGI effects are done, but movie makers and directors need to know the technical details.

- To really use technology to its fullest, to grasp the software and hardware concepts when they appear in different contexts, to evaluate the impact and value of new technologies, it is necessary to discover the ideas and concepts that connect different music technologies together.
  - A greater understanding of music technology can enrich your professional life and give you the tools to expand beyond your current experiences.
  - Most musicians make their living in a variety of ways (performing, teaching, composing, arranging, etc.), so they cannot ignore music technology.
    - You don't want to have to spend your own money to hire someone to computer-notation your music, develop your teaching materials, and create your demos. That is why it is important that you develop the skills so that you can perform these tasks.
  - Some musicians are concerned that making music with technology becomes about the technology rather than about the music.
    - The solution to this is a greater engagement with technology.
    - We interact with the basic functions of hardware and software through an interface of some sort, whether the physical knobs and sliders of hardware or their virtual counterparts in software.
      - Each of these interface controls represents an underlying process.
    - In order to make a computer do what you want, you have to master the concepts that lie beneath the interface.
    - The interfaces of music software and hardware often encourage an intuitive and experimental approach.
      - Musicians should always be willing to experiment with settings and functions to figure out what they do and how they might be useful.
      - You need to understand how your intuitive actions affected data and processes. This will allow you to either repeat those actions if you liked the result, modify them intelligently if the result is close to what you wanted, or avoid them forever if the result was unpleasant.
      - Fundamental knowledge of music technology forms the basis for one's analytical abilities.
    - Mastering the music technology will allow you to make it “all about the music.”
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