

Berklee**Shares.com**TM

FREE music lessons from Berklee College of Music

Desktop Music Production

Lesson 1:
Music Production Process

This lesson is excerpted from an online course. While the navigation links on each page are not active, all of the multimedia interactions are. Have fun!

Check out [Berkleeshares.com](http://berkleeshares.com) for more lessons just like this one.



Lesson 1	<h2 style="text-align: center;">Music Production Process</h2> <div style="text-align: right;"> </div> <h3>Overview</h3> <p>How does a musical idea make its way from a composer's imagination to a CD that plays on your home stereo, or to an MP3 file that you play on your computer?</p> <p>Throughout this course we'll be thinking about that question as we take a look at the various stages in the desktop music production process and the tools that are used.</p> <p>A musical idea can take many forms, from a simple drum and bass pattern to a complete song with melody, lyrics, and chord changes. How the final product sounds has a great deal to do with musical arrangement and the tools used to produce it.</p> <p>In this lesson, we'll take a look at the steps involved in producing a piece of music. The steps are:</p> <ul style="list-style-type: none"> • musical ideas • recording • editing • mixing • mastering <p>Mouse over any step below and read what happens at that stage of the process.</p>
Topic 1	
Topic 2	
Page 1	
Topic 3	
Activity 1	
Topic 4	
Topic 5	
Topic 6	
Topic 7	
Topic 8	
Topic 9	
Topic 10	
Topic 11	
Topic 12	
Topic 13	
Activity 2	
Activity 3	
Topic 14	
Course Contents	
Syllabus	
Bookmark	
Communication	
Announcements	
Class list	
Discussion	
Chat	

Figure 1.1: The music production process.

Lesson 1

- [Topic 1](#)
- [Topic 2](#)
- Topic 3**
- ➔ [Page 1](#)
- [Page 2](#)
- [Activity 1](#)
- [Topic 4](#)
- [Topic 5](#)
- [Topic 6](#)
- [Topic 7](#)
- [Topic 8](#)
- [Topic 9](#)
- [Topic 10](#)
- [Topic 11](#)
- [Topic 12](#)
- [Topic 13](#)
- [Activity 2](#)
- [Activity 3](#)
- [Topic 14](#)

Course Contents

- [Syllabus](#)
- ➔ [Bookmark](#)

Communication

- [Announcements](#)
- [Class list](#)
- [Discussion](#)
- [Chat](#)

Creating Musical Ideas



Musical ideas take many forms but usually start out as a simple melody and chord progression. From there, a producer makes decisions about how those ideas are to be arranged: what instruments will be used and what the musical form will be. Along the way, these arranging choices will have a profound effect on how a piece of music is produced.


Let's take a look at different kinds of arrangements and the tools we'll use to produce them.

Types of Arrangements: Vocal or Instrumental?

One of the first arranging choices made is whether the melody of a piece will be sung or played by an instrument, and if played by an instrument, which one. In either case, we'll usually have instruments providing accompaniment to the melody.

Vocal Arrangements	Description
Voice with single accompanying instrument	This is the typical starting point for singer/songwriters. The accompanying instrument is usually guitar or keyboard.
Voice with rhythm section	The accompanying instruments are usually drums, bass, keyboard, and/or guitar.
Voice with rhythm section and an instrumental arrangement	Additional horn, string, or other parts are often added to a basic vocal and rhythm section arrangement to provide a fuller, richer sound.
Instrumental Arrangements	Description
Solo instrumental	An instrument that's able to play melody and accompaniment parts at the same time, such as a piano, usually performs this.
Instrumental melody with rhythm section accompaniment	This is the standard model for a jazz ensemble.
Instrumental melody with instrumental arrangement	This is typical of any type of orchestral or chamber music.

Figure 1.2. Types of vocal and instrumental arrangements.

Lesson 1[Topic 1](#)[Topic 2](#)**Topic 3**[Page 1](#) **Page 2**[Activity 1](#)[Topic 4](#)[Topic 5](#)[Topic 6](#)[Topic 7](#)[Topic 8](#)[Topic 9](#)[Topic 10](#)[Topic 11](#)[Topic 12](#)[Topic 13](#)[Activity 2](#)[Activity 3](#)[Topic 14](#)**Course Contents** [Syllabus](#) [Bookmark](#)**Communication** [Announcements](#) [Class list](#) [Discussion](#) [Chat](#)**Creating Musical Ideas****Acoustic, Electric, or Electronic Instruments and Production Tools**

Once you decide on an arrangement, you choose the instruments. The types of instruments you choose will greatly influence the kinds of tools you'll use to produce that piece. Performances by vocals or any type of purely acoustic instrument such as a piano or sax need to be recorded as audio. You'll typically use a microphone and some sort of audio recording device to capture these types of performances.

Acoustic Sources

Performances by vocals or any type of purely acoustic instrument, such as a piano or sax, need to be recorded as audio. You'll typically need to use a microphone and some sort of audio recording device to capture these types of performances.

Electric Instruments

Instruments such as electric guitars, basses, and some electric pianos and organs are electro-acoustic instruments that need some sort of amplification to be heard. Although these instruments can be recorded using microphones much like acoustic sources, that fact that they produce an electrical output allows us to record directly into an audio recorder. A new breed of amplifier modeling technology allows the desktop producer to record convincing guitar sounds without the need to use a microphone and amplifier.

Electronic Instruments

Synthesizers, samplers, drum machines, and grooveboxes are all examples of purely electronic instruments. Unlike an electric guitar that amplifies a vibrating string, these instruments produce sound solely through electronic means. More importantly, any recent electronic instrument can be controlled using a communications language called MIDI, the Musical Instrument Digital Interface.

As we've seen from the previous audio example, you, the desktop music producer, have a wide range of musical choices in producing any piece of music. The instrumentation you choose will often depend on the resources you have available. Fortunately, the current crop of available hardware and software tools offers a wide range of options for even the modest home setup.

In this course we'll focus mainly on electronic, instrumental desktop production. Any time you work with either a vocal or acoustic instrumental source, we'll supply the necessary prerecorded material.

 [Previous Page](#)[Next Activity: Listening and Analysis](#) 

Lesson 1
Topic 1
Topic 2
Topic 3
Activity 1
Topic 4
Page 1
Page 2
Page 3
Page 4
Page 5
Page 6
Page 7
Topic 5
Topic 6
Topic 7
Topic 8
Topic 9
Topic 10
Topic 11
Topic 12
Topic 13
Activity 2
Activity 3
Topic 14

Recording



Once you have decided on the type of musical arrangement you are going to produce, you can begin recording. Keep in mind that the final distributed version of your song or composition will be some sort of stereo audio file that will play from either an audio CD or an MP3 file. Although there are many recording formats to choose from, you'll want to end up with a version that can be played by the widest possible audience.

There are two distinct models for recording a musical performance:

- direct-to-stereo recording
- multitrack recording

Course Contents
Syllabus
Bookmark

Communication
Announcements
Class list
Discussion
Chat

Figure 1.4: Two models for recording a musical performance.

[Previous Activity Page](#)

[Next Page](#)

Lesson 1

[Topic 1](#)[Topic 2](#)[Topic 3](#)[Activity 1](#)**Topic 4**[Page 1](#)[➔ Page 2](#)[Page 3](#)[Page 4](#)[Page 5](#)[Page 6](#)[Page 7](#)[Topic 5](#)[Topic 6](#)[Topic 7](#)[Topic 8](#)[Topic 9](#)[Topic 10](#)[Topic 11](#)[Topic 12](#)[Topic 13](#)[Activity 2](#)[Activity 3](#)[Topic 14](#)

Course Contents

[☰ Syllabus](#)[➔ Bookmark](#)

Communication

[! Announcements](#)[📄 Class list](#)[🗨️ Discussion](#)[💬 Chat](#)

Recording



Direct to Stereo Recording

Ensemble recording occurs when an entire musical arrangement is performed and recorded. Most recordings of orchestras and jazz ensembles are done in this fashion. The spontaneous interaction between musicians is an essential part of these performances, and it's the goal of a good recording to capture this.

One way to record a live performance is to record directly in stereo, using a pair of microphones and a recorder. Suppose you've written a song and you want to record a demo. The easiest way to do this is simply to set up a microphone and perform the song. This recording becomes the final version and you are unable to change any of the characteristics of the instruments used in the recording.

Multitrack Recording

Most professional recording is done using **multitrack recording**, where individual musical performances are recorded on separate tracks. This gives us the flexibility to edit and process the tracks, and to mix them into a final stereo version well after the original performance.

Multitrack recording also allows us to add performances to an original recording. In this way, we're capturing a performance that interacts with previously recorded performances. The process of adding parts to an existing recording is called **overdubbing**.

This way of working has changed the way music is produced. In desktop production, the self-produced artist often wears more than one hat, in many cases taking on the roles of composer, arranger, and performer.

The Role of the Composer/Arranger

When we use multitrack recording techniques, composition and arranging can be part of an interactive process where one musical idea suggests another.

Just as composers have traditionally used the piano to work out fully formed compositions from fragments of musical ideas, desktop producers can start with a skeletal idea for a song -- perhaps just a drum pattern and bass line -- and develop it into a complete musical arrangement.

The Role of the Performer

By breaking down the recording process into individual performances or takes, musicians no longer have to be in the same place at the same time to contribute to a performance.

Much like this online class, where your classmates participate from various locations at various times, musicians now commonly collaborate by adding their unique, individual performances to previously recorded tracks.

In addition, a performer can now record more than one part. Desktop producers often take on the role of drummer, bass player, keyboard player, and soloist.

In this method of recording, it's essential that a musician is able to hear what's been previously recorded, monitoring those tracks with headphones.

In desktop production we rely on multitrack recording as our basic model for recording and assembling musical performances.

[← Previous Page](#)[Next Page →](#)

Lesson 1

- [Topic 1](#)
- [Topic 2](#)
- [Topic 3](#)
- [Activity 1](#)
- [Topic 4](#)
- Topic 5**
- ➔ [Page 1](#)
- [Page 2](#)
- [Page 3](#)
- [Page 4](#)
- [Page 5](#)
- [Topic 6](#)
- [Topic 7](#)
- [Topic 8](#)
- [Topic 9](#)
- [Topic 10](#)
- [Topic 11](#)
- [Topic 12](#)
- [Topic 13](#)
- [Activity 2](#)
- [Activity 3](#)
- [Topic 14](#)

Course Contents

- [Syllabus](#)
- ➔ [Bookmark](#)

Communication

- [Announcements](#)
- [Class list](#)
- [Discussion](#)
- [Chat](#)

Editing



The third step in the production process is **editing**. Once musical parts have been recorded, we can further refine an arrangement by editing them. The most powerful capability of computer-based desktop production is the ability to rearrange and edit both audio and MIDI performances after they've been recorded. Since we're not able to directly edit digital audio tape, performances recorded to tape need to be transferred to a hard disk system to be edited.

	Edit the individual notes in a performance	Change the sounds used to play the notes in a performance	Build composite tracks using standard copy- and paste-editing techniques	Change the form of a song by copying and pasting entire sections of a recording
MIDI Editing	YES	YES	YES	YES
Digital Audio Editing	NO	NO	YES	YES

Figure 1.13. MIDI editing vs. digital audio editing.

The various tools we'll be working with in desktop production offer us several ways to view and edit the performances we've recorded. Each of the edit windows in Logic offers a different way viewing recorded data, and a unique set of tools and functions for editing. We'll be demonstrating the specifics of how you can edit your performances in later lessons.

Lesson 1
Topic 1
Topic 2
Topic 3
Activity 1
Topic 4
Topic 5
Topic 6
➔ Page 1
Topic 7
Topic 8
Topic 9
Topic 10
Topic 11
Topic 12
Topic 13
Activity 2
Activity 3
Topic 14

Course Contents
Syllabus
Bookmark

Communication
Announcements
Class list
Discussion
Chat

Mixing



At the end of the recording and editing process, we're left with a number of finished tracks. Each track will usually represent the performance of a single instrument.

To produce a final version of our song we'll need to combine these individual elements in a process called **mixing**. The audio output of all the tracks we've recorded and edited is sent to either a hardware or virtual **mixing console**, and the resulting stereo mix is then recorded on a **DAT (Digital Audio Tape) recorder** or saved as an audio file.

In mixing, after each individual instrument has been recorded to its own track, we have the ability to control each one separately. It's here that we craft and polish the sound of our final product.

Here are some things we typically control in mixing:

Volume	Faders control the levels of individual tracks.
Panning	Panning controls placement of each track in the left-right stereo image.
Equalization	The character of the sound recorded on each track can be adjusted using specialized types of tone controls called equalizers .
Effects	Effects such as compression, chorus, flanging , and delay further alter the recorded sound of a performance. These types of effects often change the basic character of a recorded performance.
Reverb	Individual tracks can be placed in a simulated acoustic space.

Figure 1.18: Elements you can control in mixing.

Most of these functions are familiar to musicians. Certainly, many guitar, bass, and keyboard players already have pedals and stomp boxes that give them this type of control in performance.

[← Previous Page](#)

[Next Topic: Mastering →](#)

Lesson 1
Topic 1
Topic 2
Topic 3
Activity 1
Topic 4
Topic 5
Topic 6
Topic 7
Page 1
Topic 8
Topic 9
Topic 10
Topic 11
Topic 12
Topic 13
Activity 2
Activity 3
Topic 14

Course Contents
Syllabus
Bookmark

Communication
Announcements
Class list
Discussion
Chat

Mastering



How will your audience listen to your work? The last step in the production process is **mastering**: preparing the final mix of a song for distribution. The most common consumer format is the **audio CD**. Many types of audio CD players on the market allow the consumer to listen at home, in the car, or with a portable player, almost anywhere.

Another popular format is an **MP3** file. This is a standard type of computer file that reduces the size of an audio file so that it's practical to download it from the Internet. We'll be using MP3 files in this course.

If we recorded our final mix on a DAT recorder, we would need to import that mix back into a computer to make a **stereo** file. Once saved as a sound file, we go through the following steps to create a final product. Mouse over each step below to learn more.

Figure 1.19. The steps needed to create the final product.

This covers the steps in the music production process.

[Previous Page](#)

[Next Topic: Music Production Tools](#)