## Common Chord Formulas

<table>
<thead>
<tr>
<th>Triads (3-note chords)</th>
<th>Formula</th>
<th>In the key of &quot;C&quot;</th>
<th>Chord Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>1,3,5</td>
<td>C,E,G</td>
<td>C</td>
</tr>
<tr>
<td>Suspended</td>
<td>1,4,5</td>
<td>C,F,G</td>
<td>Csus</td>
</tr>
<tr>
<td>Minor</td>
<td>1,b3,5</td>
<td>C,Eb,G</td>
<td>C-</td>
</tr>
<tr>
<td>Augmented</td>
<td>1,3,#5</td>
<td>C,E,G#</td>
<td>C+</td>
</tr>
<tr>
<td>Diminished</td>
<td>1,b3,b5</td>
<td>C,Eb,Gb</td>
<td>C°</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sevenths (4-note chords)</th>
<th>Formula</th>
<th>In the key of &quot;C&quot;</th>
<th>Chord Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major 6th</td>
<td>1,3,5,6</td>
<td>C,E,G,A</td>
<td>C6</td>
</tr>
<tr>
<td>Major 7th</td>
<td>1,3,5,7</td>
<td>C,E,G,B</td>
<td>Cmaj7</td>
</tr>
<tr>
<td>Dominant 7th</td>
<td>1,3,5,b7</td>
<td>C,E,G,Bb</td>
<td>C7</td>
</tr>
<tr>
<td>Dominant 7th(sus4)</td>
<td>1,4,5,b7</td>
<td>C,F,G,Bb</td>
<td>C7(sus4)</td>
</tr>
<tr>
<td>Minor 6th</td>
<td>1,b3,5,6</td>
<td>C,Eb,G,A</td>
<td>C-6</td>
</tr>
<tr>
<td>Minor(maj7)</td>
<td>1,b3,5,7</td>
<td>C,Eb,G,B</td>
<td>C-(maj7)</td>
</tr>
<tr>
<td>Minor 7th</td>
<td>1,b3,5,b7</td>
<td>C,Eb,G,Bb</td>
<td>C-7</td>
</tr>
<tr>
<td>Major 7th(#5) or Augmented(maj7)</td>
<td>1,3,#5,7</td>
<td>C,E,G#,B</td>
<td>Cmaj7(#5) or C+(maj7)</td>
</tr>
<tr>
<td>Augmented 7th</td>
<td>1,3,#5,b7</td>
<td>C,E,G#,Bb</td>
<td>C+7 or C7(#5)</td>
</tr>
</tbody>
</table>
Harmonization of the Common Scales II

All chords are derived from scales. This article is based on the four common scales in western music (Major, Natural Minor, Harmonic Minor and Melodic Minor). If scale and chord theory is new for you, take a look at the Common Chord Formula Chart.

The following section focuses on seventh chords only (4-note chords). Since this is a very broad topic, new articles, illustrating the use of these chords, will be added frequently. For now, try to play these chords on piano or guitar and familiarize yourself with their sounds.

Key: "−" denotes minor

The Major scale contains the degrees 1, 2, 3, 4, 5, 6, 7 (C, D, E, F, G, A, B in the key of C).

The Natural Minor scale contains the degrees 1, 2, b3, 4, 5, b6, b7 (C, D, Eb, F, G, Ab, Bb in the key of C minor).

The Harmonic Minor scale contains the degrees 1, 2, b3, 4, 5, b6, 7 (C, D, Eb, F, G, Ab, B in the key of C minor). Note the raised seventh degree.
The Melodic Minor scale contains the degrees 1, 2, b3, 4, 5, 6, 7 (C, D, Eb, F, G, A, B in the key of C minor). Note the raised sixth and seventh degrees.

Harmonic Minor

The Melodic Minor scale contains the degrees 1, 2, b3, 4, 5, 6, 7 (C, D, Eb, F, G, A, B in the key of C minor). Note the raised sixth and seventh degrees.

Harmonic Minor

The Natural Minor scale contains the degrees 1, 2, b3, 4, 5, b6, b7 (C, D, Eb, F, G, Ab, Bb in the key of C minor).

Key: "−" denotes minor

The Major scale contains the degrees 1, 2, 3, 4, 5, 6, 7 (C, D, E, F, G, A, B in the key of C).

Major

The Natural Minor scale contains the degrees 1, 2, b3, 4, 5, b6, b7 (C, D, Eb, F, G, Ab, Bb in the key of C minor).
The Harmonic Minor scale contains the degrees 1, 2, b3, 4, 5, b6, 7 (C, D, Eb, F, G, Ab, B in the key of C minor). Note the raised seventh degree.

The Melodic Minor scale contains the degrees 1, 2, b3, 4, 5, 6, 7 (C, D, Eb, F, G, A, B in the key of C minor). Note the raised sixth and seventh degrees.

Why Learn Modes?

Simply knowing what the modes are, probably won't make you a better musician; understanding how they work in a harmonic context will.

Let's begin by reviewing the modes and their scale formulas:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Formula</th>
<th>From &quot;C&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ionian (Major)</td>
<td>1,2,3,4,5,6,7,8</td>
<td>C,D,E,F,G,A,B,C</td>
</tr>
<tr>
<td>Lydian</td>
<td>1,2,3,#4,5,6,7,8</td>
<td>C,D,E,F#,G,A,B,C</td>
</tr>
</tbody>
</table>
Mixo-Lydian
1,2,3,4,5,6,b7,8
C,D,E,F,G,A,Bb,C

Aeolian (Natural Minor)
1,2,b3,4,5,b6,b7,8
C,D,Eb,F,G,Ab,Bb,C

Dorian
1,2,b3,4,5,6,b7,8
C,D,Eb,F,G,A,Bb,C

Phrygian
1,b2,b3,4,5,b6,b7,8
C,Db,Eb,F,G,Ab,Bb,C

Locrian
1,b2,b3,4,b5,b6,b7,8
C,Db,Eb,F,Gb,Ab,Bb,C

You may have noticed that I didn't list the modes in the usual order of: Ionian, Dorian, Phrygian, Lydian, etc.

I did it this way because I want you to think of these scales as either major or minor.

How can you tell if a scale or chord is major or minor? Good question, and there's a simple answer: A scale or chord is considered major, if it has a major third interval (two whole steps) between the first and third degrees.

A minor scale or chord has a minor third interval (one and a half steps) between the first and third degrees.

Refer to our chart above. Ionian, Lydian and Mixo-Lydian are major modes, because they have the major third interval. Since we have the modes grouped in this way, it's easy to see the differences between them:

Lydian is a major scale with a raised fourth.
Mixo-Lydian is a major scale with a lowered seventh.

Let's take a moment to think about what chords would go with these scales. Since the Lydian mode is a major scale with a raised fourth, wouldn't it make sense to use it over a major chord that contains a raised fourth? That would include Maj(#11), Maj7(#11). (If you are unfamiliar with chords and their spellings, see my Common Chord Formulas chart.)

How about our Mixo-Lydian scale? We said it was a major scale with a lowered seventh. Let's use it over a major chord with a lowered seventh, otherwise known as a dominant chord. The next time you see a G7, try playing a G Mixo-Lydian scale over it.

Let's go back to our chart. Notice that the Aeolian mode is the same as the natural minor scale. Let's use this scale to see the differences between the minor modes.

Dorian is the natural minor scale with a natural sixth.
Phrygian is the natural minor scale with a lowered second.
Locrian is the natural minor scale with a lowered second and fifth.

Here's some chords that go with these scales:
Aeolian, Dorian, Phrygian: Minor and -7
Locrian: Diminished triad, -7(b5)

A word of warning: You may theoretically be able to play a Dorian scale over any minor chord, but let your ears be the final judge. It's really a matter of personal taste. I may play something that sounds a little "out" and think it's cool. It may just sound plain wrong to you. Listen to your ears; they're usually right.

Still a little confused? A discussion of modal harmony should clear things up. Let's go!

Modal Harmony

Here is the usual way musicians think about applying the modes to harmony:

Harmonized C major scale

<table>
<thead>
<tr>
<th>Scale Degree</th>
<th>Chord Name</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>C or Cmaj7</td>
<td>C Ionian</td>
</tr>
<tr>
<td>ii</td>
<td>D- or D-7</td>
<td>D Dorian</td>
</tr>
<tr>
<td>iii</td>
<td>E- or E-7</td>
<td>E Phrygian</td>
</tr>
<tr>
<td>IV</td>
<td>F or Fmaj7</td>
<td>F Lydian</td>
</tr>
<tr>
<td>V</td>
<td>G or G7</td>
<td>G Mixo-Lydian</td>
</tr>
<tr>
<td>vi</td>
<td>A- or A-7</td>
<td>A Aeolian</td>
</tr>
<tr>
<td>vii</td>
<td>B° or B-7(b5)</td>
<td>B Locrian</td>
</tr>
</tbody>
</table>

Of course there's nothing wrong with approaching the modes in this way. It's not the only way, however.

Let's try an experiment. Record this progression on whatever device you have:
Repeat it several times.

Now rewind and improvise over it using nothing but the C major scale. Sounds good, right?

Try playing the E Phrygian mode over the same progression. Does it sound any different? Not really.

Try the same progression, but play a C major scale over the C chord, and a D Dorian scale over the D- chord. Any different yet? Well, you're emphasizing the roots of the chords as they change, but it still pretty much sounds like the same ol' key of C major, right?

Try it with any of the modes listed in the chart above.

It still sounds like the key of C major, doesn't it? That's because harmony affects how a melody is perceived. I don't care what you play over that progression, it will sound like C major every single time.

By the way, our example progression isn't modal harmony—it's a major "tonality". You hear tonality all the time in pop ballads, for instance. Usually, there is a progression of many different chords that occur in one or more keys.

Modal harmony is most often characterized by short, repetitive progressions, or vamps. Modal melodies usually don't stray far from the seven notes that naturally occur in the mode.

**Modal Harmony**

Let's harmonize the modes:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Scale Formula</th>
<th>Harmonization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ionian</td>
<td>1, 2, 3, 4, 5, 6, 7, 8</td>
<td>I maj7, II-7, III-7, IV maj7, V7, VI-7, VII-7(b5)</td>
</tr>
<tr>
<td>Lydian</td>
<td>1, 2, 3, #4, 5, 6, 7, 8</td>
<td>I maj7, II7, III-7, #IV-7(b5), V maj7, VI-7, VII-7</td>
</tr>
<tr>
<td>Mixo-Lydian</td>
<td>1, 2, 3, 4, 5, 6, b7, 8</td>
<td>I7, II-7, III-7(b5), IV maj7, V-7, VI-7, VII maj7</td>
</tr>
<tr>
<td>Aeolian</td>
<td>1, 2, b3, 4, 5, b6, b7, 8</td>
<td>I-7, II-7(b5), blII maj7, IV-7, V-7, bVI maj7, bVII7</td>
</tr>
</tbody>
</table>
Here are some guidelines to follow when creating modal harmony and melody:

1) Emphasize the one chord frequently. (Don’t stray too far without returning to the one chord.)
2) Use vamps when possible.
3) Effective modal melodies are usually diatonic.

Here are some examples of modal chord progressions:

Dorian: | D-7 | E-7 | Fmaj7 | E-7 |
Phrygian: | E-7 | Fmaj7 | E-7 | D-7 |
Aeolian: | A- | F | C | G |

Notice how the progressions don’t go too far before returning to the one chord.

Try improvising over these progressions using the modes indicated.

"So, how does this help me?", you may ask. Well, if you know how these modal progressions sound, you won’t need to fish around for the right notes to improvise over them. You’ll hear the Dorian progression above and think, "Aha! That sounds Dorian." Your ear will recognize these things as sounds instead of a series of chords.

If you’re a writer, this opens up a whole new realm of possibility for your compositions. Why stick to the same old major and minor progressions, when you can throw in some modal harmony to spice things up?

My suggestion would be to spend some time with the harmonization chart above. Learn what the harmonizations look and sound like.

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**Modal Harmony**

**Vamps**

Remember back in "Why Learn Modes?" we discussed the differences between the modes? We’re going to use that information to come up with some modal vamps.
We said the F Lydian mode was the F major scale with a raised fourth. Let's find chords that contain the raised fourth, and alternate them with the one chord to form our vamp. Here's what I came up with:

These chords all contain the note B.

B-7(b5), G or G7, E-7, Cmaj7, A-9

Let's make some vamps:

|: Fmaj7 | Cmaj7 :|
|: F | G :|
|: F | G/F :|
|: Fmaj7 | E-7 :|

Notice how these vamps all have a similar sound? Play the F Lydian mode over them.

Here's the procedure for coming up with modal vamps:

1) Find the differences between the major modes and the major scale. For the minor modes, compare to the natural minor scale. Identify the notes that make the mode different from the major or minor scale.
2) Take those notes and find the chords that contain them.
3) Alternate between the one chord and the chords that contain the "difference" notes.
4) Have a frosty beer and reflect on a job well done.

Here's some vamps for the E Phrygian mode:

The E Phrygian scale is the E natural minor scale with a lowered second, so let's find chords with the note F in them.

Fmaj7, D-7, B-7(b5), G7

Here's some vamps:

|: E-7 | Fmaj7 :|
|: E-7 | D-7 :|
|: E-7 | B-7(b5) :|
|: E-7 | G7 :|

Do you notice how these vamps have a specific flavor to them? This is the Phrygian sound.

I'm going to list the most COMMON modal vamps here. It doesn't mean that these are the best and others wouldn't be as good. However, these are the ones you are most likely to run into in the real world. You should try to come up with as many as possible on your own.
Dorian: |: D-7 | G7 :|
Phrygian: |: E-7 | Fmaj7 :|
Lydian: |: Fmaj7 | G/F :|
Mixo-Lydian: |: G | F :|
Aeolian: |: A- | F :|

Locrian is a special case. Since one of the notes that characterizes the Locrian mode is the lowered second, a possible vamp would be |: B-7(b5) | Cmaj7 :|

The problem is, the B-7(b5) sounds like it wants to resolve to the Cmaj7, making this vamp sound like it's in the key of C major, not B Locrian. You will find that this is true for any vamp you could come up with. Try it. Your ear will tell you that I'm right.

If you really want to write some music in the Locrian mode, I would suggest using an ostinato bass pattern made up of the notes of the Locrian mode. The repeated figure will be enough to imply the sound you're looking for. (An ostinato pattern is simply a pattern of notes that repeats over and over again.)

If you come up with any interesting Locrian vamps or patterns, email me and I'll post them on this page.

If you are a songwriter, how about using a modal vamp as your verse? Then go to a relative major key for the chorus. Or how about a modal bridge? How about an entire song based on a modal vamp?

If you are a player, you should see many new possibilities for improvisation. Remember, any chord progression can be navigated using scales. Learning the modes and their harmonizations give you more tools to work with.

I hope exploring this material makes your musical life richer in some way. Keep playing and writing!