

UCLA-ALIGNED COURSE FIELD NOTES

CUSTOM NOTES

Music Theory for Piano

A complete keyboard course in reading, rhythm, harmony, voicing, analysis, composition, and ear training

How these notes are written. I wrote each chapter the way I wish the material had been explained the first time: the real idea, the point where I usually get stuck, the simplest mental model that still stays honest, and a worked decision instead of a polished answer appearing from nowhere. Every chapter closes with practice and a fully written solution. If a sentence sounds impressive but does not help me solve or explain something, it does not belong here.

Daniel Mastick

Curriculum map, working notes, practice, and solutions

Course map

Week	Core thread	What should be solid by the end
1	Keyboard map, notation, clefs, and octave systems	Reconstruct the model, work an application, test its assumptions, and explain the result in ordinary language.
2	Rhythm, meter, coordination, and pulse	Reconstruct the model, work an application, test its assumptions, and explain the result in ordinary language.
3	Major and minor scales, key signatures, and fingering	Reconstruct the model, work an application, test its assumptions, and explain the result in ordinary language.
4	Intervals, consonance, and inversion	Reconstruct the model, work an application, test its assumptions, and explain the result in ordinary language.
5	Triads, inversions, figured bass, and keyboard voicing	Reconstruct the model, work an application, test its assumptions, and explain the result in ordinary language.
6	Seventh chords, extensions, and voicing economy	Reconstruct the model, work an application, test its assumptions, and explain the result in ordinary language.
7	Functional harmony, cadences, and phrase design	Reconstruct the model, work an application, test its assumptions, and explain the result in ordinary language.
8	Voice leading and four-part writing	Reconstruct the model, work an application, test its assumptions, and explain the result in ordinary language.
9	Accompaniment textures and harmonic rhythm	Reconstruct the model, work an application, test its assumptions, and explain the result in ordinary language.
10	Secondary dominants, mixture, modulation, and modes	Reconstruct the model, work an application, test its assumptions, and explain the result in ordinary language.
11	Analysis, composition, and reharmonization	Reconstruct the model, work an application, test its assumptions, and explain the result in ordinary language.
12	Ear training, sight reading, improvisation, and practice	Reconstruct the model, work an application, test its assumptions, and explain the result in ordinary language.
9	Integration studio	Combine several chapters in one case, preserve their assumptions, and reconcile the result across representations.
10	Cumulative review	Retrieve the full course map from memory and solve mixed problems without chapter labels.

Scope anchor: <https://catalog.registrar.ucla.edu/browse/Departments/MusicIndustry/Overview>. The sequence is aligned to the official catalog description and expanded into a practical ten-week study plan.

How I would use this packet

Treat each numbered section as one chapter. Read the formal explanation, pause at the student interpretation, and see whether the easy version still says the same thing. Rework the example without looking, then cover the solution in the chapter practice box. The cumulative set at the end is deliberately mixed: knowledge becomes durable when I have to choose the tool instead of being told which chapter I am in.

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CHAPTER 1 Keyboard map, notation, clefs, and octave systems

The idea

The keyboard makes pitch-class repetition visible through groups of two and three black keys. Grand-staff notation, clefs, ledger lines, octave labels, enharmonic spelling, fingering, and hand position connect sound to readable location.

Rebuild the chapter from first principles

The claim I need to own is this: The keyboard makes pitch-class repetition visible through groups of two and three black keys. Grand-staff notation, clefs, ledger lines, octave labels, enharmonic spelling, fingering, and hand position connect sound to readable location. I do not count that as learned just because the sentence looks familiar. I should be able to name the objects, state what changes and what stays fixed, recover the rule from the definitions, and explain why the result is allowed.

The move

My working sequence

1. **Translate.** Rewrite the prompt in the language of keyboard map, notation, clefs, and octave systems. List the known quantities, the unknown, the units or types, and any hidden constraint.
2. **Choose.** State the theorem, model, algorithm, accounting rule, or physical law before substituting values. This is where I make the assumption visible.
3. **Execute.** Work one justified step at a time and keep intermediate state readable enough that I can audit it later.
4. **Verify.** Check a boundary case, sign, unit, invariant, order of magnitude, or alternative derivation. Then translate the result back into an ordinary sentence.

Details I would refuse to skip

- **Definitions:** I should be able to define every technical noun in the chapter without using that same noun in the definition.
- **Assumptions:** I write the condition that makes the method legal beside the method itself. A correct procedure under the wrong assumptions is still a wrong answer.
- **Representation:** I move freely among words, equations or code, a diagram, and a small numerical example. If one representation disagrees with another, that disagreement is useful evidence.
- **Failure modes:** I keep the nearest counterexample in mind: the boundary where the rule changes, the invariant breaks, or the model stops matching reality.
- **Communication:** My final answer names what the result means and what it does not establish. I do not let notation do the explanatory work for me.

Sanity check

Closed-note check. Can I teach keyboard map, notation, clefs, and octave systems on a blank page, derive or reconstruct its main rule, work a fresh example, and diagnose a deliberately broken solution? If I can only recognize the finished work, I am not done.

How this chapter connects

I read this chapter as the bridge from the course foundations to rhythm, meter, coordination, and pulse. The earlier material supplies the language and constraints; this chapter adds a new reasoning move; the later material asks me to use that move without being told its name. That connection matters because exams and real projects mix chapters on purpose.

The full working model

- **Core claim.** The keyboard makes pitch-class repetition visible through groups of two and three black keys.
- **What moves.** Grand-staff notation, clefs, ledger lines, octave labels, enharmonic spelling, fingering, and hand position connect sound to readable location.
- **What keeps the answer honest.** The model becomes useful only when I can apply keyboard map, notation, clefs, and octave systems to an unfamiliar case and defend the assumptions.
- **Mastery standard.** I can define the objects, rebuild the rule, work a fresh case, compare alternatives, and diagnose a broken solution without relying on recognition.

How I actually think about it

I read intervals and shapes as well as note names; one-note-at-a-time decoding is too slow for music.

The easy version

The keyboard makes pitch-class repetition visible through groups of two and three black keys.

Worked example

Question. Where is middle C written and played?

Walkthrough. Middle C is C4, the C near the keyboard center. On grand staff it sits on one ledger line below treble staff or above bass staff.

Common miss

The fastest way to get this chapter wrong is to use the visible procedure without naming its assumption, units, time period, reference group, or boundary. I put that condition beside the work and verify the result independently.

Solved chapter practice

Practice 1. Where is middle C written and played?

Solution. Middle C is C4, the C near the keyboard center. On grand staff it sits on one ledger line below treble staff or above bass staff.

Practice 2. Explain keyboard map, notation, clefs, and octave systems to a classmate using one definition, one concrete example, one assumption, and one failure mode.

Solution. Begin with the core claim above, use the worked case as the concrete example, state the condition highlighted by the warning, and choose a failure where that condition does not hold. A complete explanation connects all four pieces instead of listing them.

Mastery practice A. Reconstruct keyboard map, notation, clefs, and octave systems from a blank page. Include the central definition, the governing rule, one required assumption, and one boundary case.

Solution. Start from the blue idea box, but rewrite it in my own words. Identify the objects and state, name the rule before using it, copy the relevant assumption from the details audit, and choose a boundary where that assumption becomes equality or fails. A complete solution explains why each part belongs; a list of vocabulary is not enough.

Mastery practice B. A classmate gets a polished-looking answer to a keyboard map, notation, clefs, and octave systems problem but never states a model or checks the result. Write the shortest useful review of that solution.

Solution. I would ask four concrete questions: What exactly are the inputs and desired output? Which rule licenses the main step? Which assumption could invalidate it? Which independent check supports the conclusion? If the answer cannot survive those four questions, I treat the numerical or verbal result as unverified.

CHAPTER 2 Rhythm, meter, coordination, and pulse

The idea

Duration, rests, ties, dots, triplets, meter, subdivision, syncopation, tempo, articulation, and polyrhythmic coordination organize musical time. Hands must share one pulse even when their surface rhythms differ.

Rebuild the chapter from first principles

The claim I need to own is this: Duration, rests, ties, dots, triplets, meter, subdivision, syncopation, tempo, articulation, and polyrhythmic coordination organize musical time. Hands must share one pulse even when their surface rhythms differ. I do not count that as learned just because the sentence looks familiar. I should be able to name the objects, state what changes and what stays fixed, recover the rule from the definitions, and explain why the result is allowed.

The move

My working sequence

1. **Translate.** Rewrite the prompt in the language of rhythm, meter, coordination, and pulse. List the known quantities, the unknown, the units or types, and any hidden constraint.
2. **Choose.** State the theorem, model, algorithm, accounting rule, or physical law before substituting values. This is where I make the assumption visible.
3. **Execute.** Work one justified step at a time and keep intermediate state readable enough that I can audit it later.
4. **Verify.** Check a boundary case, sign, unit, invariant, order of magnitude, or alternative derivation. Then translate the result back into an ordinary sentence.

Details I would refuse to skip

- **Definitions:** I should be able to define every technical noun in the chapter without using that same noun in the definition.
- **Assumptions:** I write the condition that makes the method legal beside the method itself. A correct procedure under the wrong assumptions is still a wrong answer.
- **Representation:** I move freely among words, equations or code, a diagram, and a small numerical example. If one representation disagrees with another, that disagreement is useful evidence.
- **Failure modes:** I keep the nearest counterexample in mind: the boundary where the rule changes, the invariant breaks, or the model stops matching reality.
- **Communication:** My final answer names what the result means and what it does not establish. I do not let notation do the explanatory work for me.

Sanity check

Closed-note check. Can I teach rhythm, meter, coordination, and pulse on a blank page, derive or reconstruct its main rule, work a fresh example, and diagnose a deliberately broken solution? If I can only recognize the finished work, I am not done.

How this chapter connects

I read this chapter as the bridge from keyboard map, notation, clefs, and octave systems to major and minor scales, key signatures, and fingering. The earlier material supplies the language and constraints; this chapter adds a new reasoning move; the later material asks me to use that move without being told its name. That connection matters because exams and real projects mix chapters on purpose.

The full working model

- **Core claim.** Duration, rests, ties, dots, tuplets, meter, subdivision, syncopation, tempo, articulation, and polyrhythmic coordination organize musical time.
- **What moves.** Hands must share one pulse even when their surface rhythms differ.

- **What keeps the answer honest.** The model becomes useful only when I can apply rhythm, meter, coordination, and pulse to an unfamiliar case and defend the assumptions.
- **Mastery standard.** I can define the objects, rebuild the rule, work a fresh case, compare alternatives, and diagnose a broken solution without relying on recognition.

How I actually think about it

I count the smallest shared subdivision before trying to coordinate the hands.

The easy version

Duration, rests, ties, dots, triplets, meter, subdivision, syncopation, tempo, articulation, and polyrhythmic coordination organize musical time.

Worked example

Question. How do three eighth-note triplets fit one quarter-note beat?

Walkthrough. Divide the beat into three equal parts and count one-trip-let. Each triplet eighth occupies one third of the beat rather than one half.

Common miss

The fastest way to get this chapter wrong is to use the visible procedure without naming its assumption, units, time period, reference group, or boundary. I put that condition beside the work and verify the result independently.

Solved chapter practice

Practice 1. How do three eighth-note triplets fit one quarter-note beat?

Solution. Divide the beat into three equal parts and count one-trip-let. Each triplet eighth occupies one third of the beat rather than one half.

Practice 2. Explain rhythm, meter, coordination, and pulse to a classmate using one definition, one concrete example, one assumption, and one failure mode.

Solution. Begin with the core claim above, use the worked case as the concrete example, state the condition highlighted by the warning, and choose a failure where that condition does not hold. A complete explanation connects all four pieces instead of listing them.

Mastery practice A. Reconstruct rhythm, meter, coordination, and pulse from a blank page. Include the central definition, the governing rule, one required assumption, and one boundary case.

Solution. Start from the blue idea box, but rewrite it in my own words. Identify the objects and state, name the rule before using it, copy the relevant assumption from the details audit, and choose a boundary where that assumption becomes equality or fails. A complete solution explains why each part belongs; a list of vocabulary is not enough.

Mastery practice B. A classmate gets a polished-looking answer to a rhythm, meter, coordination, and pulse problem but never states a model or checks the result. Write the shortest useful review of that solution.

Solution. I would ask four concrete questions: What exactly are the inputs and desired output?

Which rule licenses the main step? Which assumption could invalidate it? Which independent check supports the conclusion? If the answer cannot survive those four questions, I treat the numerical or verbal result as unverified.

CHAPTER 3 Major and minor scales, key signatures, and fingering

The idea

Scale construction follows interval patterns; key signatures encode diatonic alterations. Relative and parallel keys, circle-of-fifths relationships, tetrachords, fingering, contrary motion, and harmonic or melodic minor build tonal fluency.

Rebuild the chapter from first principles

The claim I need to own is this: Scale construction follows interval patterns; key signatures encode diatonic alterations. Relative and parallel keys, circle-of-fifths relationships, tetrachords, fingering, contrary motion, and harmonic or melodic minor build tonal fluency. I do not count that as learned just because the sentence looks familiar. I should be able to name the objects, state what changes and what stays fixed, recover the rule from the definitions, and explain why the result is allowed.

The move

My working sequence

1. **Translate.** Rewrite the prompt in the language of major and minor scales, key signatures, and fingering. List the known quantities, the unknown, the units or types, and any hidden constraint.
2. **Choose.** State the theorem, model, algorithm, accounting rule, or physical law before substituting values. This is where I make the assumption visible.
3. **Execute.** Work one justified step at a time and keep intermediate state readable enough that I can audit it later.
4. **Verify.** Check a boundary case, sign, unit, invariant, order of magnitude, or alternative derivation. Then translate the result back into an ordinary sentence.

Details I would refuse to skip

- **Definitions:** I should be able to define every technical noun in the chapter without using that same noun in the definition.
- **Assumptions:** I write the condition that makes the method legal beside the method itself. A correct procedure under the wrong assumptions is still a wrong answer.
- **Representation:** I move freely among words, equations or code, a diagram, and a small numerical example. If one representation disagrees with another, that disagreement is useful evidence.

- **Failure modes:** I keep the nearest counterexample in mind: the boundary where the rule changes, the invariant breaks, or the model stops matching reality.
- **Communication:** My final answer names what the result means and what it does not establish. I do not let notation do the explanatory work for me.

Sanity check

Closed-note check. Can I teach major and minor scales, key signatures, and fingering on a blank page, derive or reconstruct its main rule, work a fresh example, and diagnose a deliberately broken solution? If I can only recognize the finished work, I am not done.

How this chapter connects

I read this chapter as the bridge from rhythm, meter, coordination, and pulse to intervals, consonance, and inversion. The earlier material supplies the language and constraints; this chapter adds a new reasoning move; the later material asks me to use that move without being told its name. That connection matters because exams and real projects mix chapters on purpose.

The full working model

- **Core claim.** Scale construction follows interval patterns; key signatures encode diatonic alterations.
- **What moves.** Relative and parallel keys, circle-of-fifths relationships, tetrachords, fingering, contrary motion, and harmonic or melodic minor build tonal fluency.
- **What keeps the answer honest.** The model becomes useful only when I can apply major and minor scales, key signatures, and fingering to an unfamiliar case and defend the assumptions.
- **Mastery standard.** I can define the objects, rebuild the rule, work a fresh case, compare alternatives, and diagnose a broken solution without relying on recognition.

How I actually think about it

I hear and spell the scale before I automate the fingering.

The easy version

Scale construction follows interval patterns; key signatures encode diatonic alterations.

Worked example

Question. Spell B-flat major and name its relative minor.

Walkthrough. B-flat, C, D, E-flat, F, G, A, B-flat. Its relative minor is G minor.

Common miss

The fastest way to get this chapter wrong is to use the visible procedure without naming its assumption, units, time period, reference group, or boundary. I put that condition beside the work and verify the result independently.

Solved chapter practice

Practice 1. Spell B-flat major and name its relative minor.

Solution. B-flat, C, D, E-flat, F, G, A, B-flat. Its relative minor is G minor.

Practice 2. Explain major and minor scales, key signatures, and fingering to a classmate using one definition, one concrete example, one assumption, and one failure mode.

Solution. Begin with the core claim above, use the worked case as the concrete example, state the condition highlighted by the warning, and choose a failure where that condition does not hold. A complete explanation connects all four pieces instead of listing them.

Mastery practice A. Reconstruct major and minor scales, key signatures, and fingering from a blank page. Include the central definition, the governing rule, one required assumption, and one boundary case.

Solution. Start from the blue idea box, but rewrite it in my own words. Identify the objects and state, name the rule before using it, copy the relevant assumption from the details audit, and choose a boundary where that assumption becomes equality or fails. A complete solution explains why each part belongs; a list of vocabulary is not enough.

Mastery practice B. A classmate gets a polished-looking answer to a major and minor scales, key signatures, and fingering problem but never states a model or checks the result. Write the shortest useful review of that solution.

Solution. I would ask four concrete questions: What exactly are the inputs and desired output? Which rule licenses the main step? Which assumption could invalidate it? Which independent check supports the conclusion? If the answer cannot survive those four questions, I treat the numerical or verbal result as unverified.

CHAPTER 4 Intervals, consonance, and inversion

The idea

Intervals have number and quality determined by letter distance and semitone size. Compound intervals, inversions, enharmonic spellings, consonance, dissonance, and tendency tones describe harmonic and melodic relationships.

Rebuild the chapter from first principles

The claim I need to own is this: Intervals have number and quality determined by letter distance and semitone size. Compound intervals, inversions, enharmonic spellings, consonance, dissonance, and tendency tones describe harmonic and melodic relationships. I do not count that as learned just because the sentence looks familiar. I should be able to name the objects, state what changes and what stays fixed, recover the rule from the definitions, and explain why the result is allowed.

The move

My working sequence

1. **Translate.** Rewrite the prompt in the language of intervals, consonance, and inversion. List the known quantities, the unknown, the units or types, and any hidden constraint.
2. **Choose.** State the theorem, model, algorithm, accounting rule, or physical law before substituting values. This is where I make the assumption visible.
3. **Execute.** Work one justified step at a time and keep intermediate state readable enough that I can audit it later.
4. **Verify.** Check a boundary case, sign, unit, invariant, order of magnitude, or alternative derivation. Then translate the result back into an ordinary sentence.

Details I would refuse to skip

- **Definitions:** I should be able to define every technical noun in the chapter without using that same noun in the definition.
- **Assumptions:** I write the condition that makes the method legal beside the method itself. A correct procedure under the wrong assumptions is still a wrong answer.
- **Representation:** I move freely among words, equations or code, a diagram, and a small numerical example. If one representation disagrees with another, that disagreement is useful evidence.
- **Failure modes:** I keep the nearest counterexample in mind: the boundary where the rule changes, the invariant breaks, or the model stops matching reality.
- **Communication:** My final answer names what the result means and what it does not establish. I do not let notation do the explanatory work for me.

Sanity check

Closed-note check. Can I teach intervals, consonance, and inversion on a blank page, derive or reconstruct its main rule, work a fresh example, and diagnose a deliberately broken solution? If I can only recognize the finished work, I am not done.

How this chapter connects

I read this chapter as the bridge from major and minor scales, key signatures, and fingering to triads, inversions, figured bass, and keyboard voicing. The earlier material supplies the language and constraints; this chapter adds a new reasoning move; the later material asks me to use that move without being told its name. That connection matters because exams and real projects mix chapters on purpose.

The full working model

- **Core claim.** Intervals have number and quality determined by letter distance and semitone size.
- **What moves.** Compound intervals, inversions, enharmonic spellings, consonance, dissonance, and tendency tones describe harmonic and melodic relationships.

- **What keeps the answer honest.** The model becomes useful only when I can apply intervals, consonance, and inversion to an unfamiliar case and defend the assumptions.
- **Mastery standard.** I can define the objects, rebuild the rule, work a fresh case, compare alternatives, and diagnose a broken solution without relying on recognition.

How I actually think about it

Spelling tells me function: G-sharp and A-flat are the same key but not always the same musical sentence.

The easy version

Intervals have number and quality determined by letter distance and semitone size.

Worked example

Question. Invert a major sixth.

Walkthrough. The numbers sum to nine, so a sixth becomes a third; major inverts to minor. A major sixth inverts to a minor third.

Common miss

The fastest way to get this chapter wrong is to use the visible procedure without naming its assumption, units, time period, reference group, or boundary. I put that condition beside the work and verify the result independently.

Solved chapter practice

Practice 1. Invert a major sixth.

Solution. The numbers sum to nine, so a sixth becomes a third; major inverts to minor. A major sixth inverts to a minor third.

Practice 2. Explain intervals, consonance, and inversion to a classmate using one definition, one concrete example, one assumption, and one failure mode.

Solution. Begin with the core claim above, use the worked case as the concrete example, state the condition highlighted by the warning, and choose a failure where that condition does not hold. A complete explanation connects all four pieces instead of listing them.

Mastery practice A. Reconstruct intervals, consonance, and inversion from a blank page. Include the central definition, the governing rule, one required assumption, and one boundary case.

Solution. Start from the blue idea box, but rewrite it in my own words. Identify the objects and state, name the rule before using it, copy the relevant assumption from the details audit, and choose a boundary where that assumption becomes equality or fails. A complete solution explains why each part belongs; a list of vocabulary is not enough.

Mastery practice B. A classmate gets a polished-looking answer to a intervals, consonance, and inversion problem but never states a model or checks the result. Write the shortest useful review of that solution.

Solution. I would ask four concrete questions: What exactly are the inputs and desired output? Which rule licenses the main step? Which assumption could invalidate it? Which independent

check supports the conclusion? If the answer cannot survive those four questions, I treat the numerical or verbal result as unverified.

CHAPTER 5 Triads, inversions, figured bass, and keyboard voicing

The idea

Triads stack thirds and appear in root position, first inversion, and second inversion. Roman numerals name scale-degree function; figured bass and slash notation name bass position; spacing and doubling shape texture.

Rebuild the chapter from first principles

The claim I need to own is this: Triads stack thirds and appear in root position, first inversion, and second inversion. Roman numerals name scale-degree function; figured bass and slash notation name bass position; spacing and doubling shape texture. I do not count that as learned just because the sentence looks familiar. I should be able to name the objects, state what changes and what stays fixed, recover the rule from the definitions, and explain why the result is allowed.

The move

My working sequence

1. **Translate.** Rewrite the prompt in the language of triads, inversions, figured bass, and keyboard voicing. List the known quantities, the unknown, the units or types, and any hidden constraint.
2. **Choose.** State the theorem, model, algorithm, accounting rule, or physical law before substituting values. This is where I make the assumption visible.
3. **Execute.** Work one justified step at a time and keep intermediate state readable enough that I can audit it later.
4. **Verify.** Check a boundary case, sign, unit, invariant, order of magnitude, or alternative derivation. Then translate the result back into an ordinary sentence.

Details I would refuse to skip

- **Definitions:** I should be able to define every technical noun in the chapter without using that same noun in the definition.
- **Assumptions:** I write the condition that makes the method legal beside the method itself. A correct procedure under the wrong assumptions is still a wrong answer.
- **Representation:** I move freely among words, equations or code, a diagram, and a small numerical example. If one representation disagrees with another, that disagreement is useful evidence.
- **Failure modes:** I keep the nearest counterexample in mind: the boundary where the rule changes,

the invariant breaks, or the model stops matching reality.

- **Communication:** My final answer names what the result means and what it does not establish. I do not let notation do the explanatory work for me.

Sanity check

Closed-note check. Can I teach triads, inversions, figured bass, and keyboard voicing on a blank page, derive or reconstruct its main rule, work a fresh example, and diagnose a deliberately broken solution? If I can only recognize the finished work, I am not done.

How this chapter connects

I read this chapter as the bridge from intervals, consonance, and inversion to seventh chords, extensions, and voicing economy. The earlier material supplies the language and constraints; this chapter adds a new reasoning move; the later material asks me to use that move without being told its name. That connection matters because exams and real projects mix chapters on purpose.

The full working model

- **Core claim.** Triads stack thirds and appear in root position, first inversion, and second inversion.
- **What moves.** Roman numerals name scale-degree function; figured bass and slash notation name bass position; spacing and doubling shape texture.
- **What keeps the answer honest.** The model becomes useful only when I can apply triads, inversions, figured bass, and keyboard voicing to an unfamiliar case and defend the assumptions.
- **Mastery standard.** I can define the objects, rebuild the rule, work a fresh case, compare alternatives, and diagnose a broken solution without relying on recognition.

How I actually think about it

I identify root and quality even when the lowest note tries to distract me.

The easy version

Triads stack thirds and appear in root position, first inversion, and second inversion.

Worked example

Question. In C major, spell ii6.

Walkthrough. The ii chord is D minor, D-F-A. First inversion places F in the bass, giving F-A-D in close position or another spacing.

Common miss

The fastest way to get this chapter wrong is to use the visible procedure without naming its assumption, units, time period, reference group, or boundary. I put that condition beside the work and verify the result independently.

Solved chapter practice

Practice 1. In C major, spell ii6.

Solution. The ii chord is D minor, D-F-A. First inversion places F in the bass, giving F-A-D in close position or another spacing.

Practice 2. Explain triads, inversions, figured bass, and keyboard voicing to a classmate using one definition, one concrete example, one assumption, and one failure mode.

Solution. Begin with the core claim above, use the worked case as the concrete example, state the condition highlighted by the warning, and choose a failure where that condition does not hold. A complete explanation connects all four pieces instead of listing them.

Mastery practice A. Reconstruct triads, inversions, figured bass, and keyboard voicing from a blank page. Include the central definition, the governing rule, one required assumption, and one boundary case.

Solution. Start from the blue idea box, but rewrite it in my own words. Identify the objects and state, name the rule before using it, copy the relevant assumption from the details audit, and choose a boundary where that assumption becomes equality or fails. A complete solution explains why each part belongs; a list of vocabulary is not enough.

Mastery practice B. A classmate gets a polished-looking answer to a triads, inversions, figured bass, and keyboard voicing problem but never states a model or checks the result. Write the shortest useful review of that solution.

Solution. I would ask four concrete questions: What exactly are the inputs and desired output? Which rule licenses the main step? Which assumption could invalidate it? Which independent check supports the conclusion? If the answer cannot survive those four questions, I treat the numerical or verbal result as unverified.

CHAPTER 6 Seventh chords, extensions, and voicing economy

The idea

Diatonic seventh chords add functional color and voice-leading tendency. Dominant, major, minor, half-diminished, and diminished sevenths lead to ninths, suspensions, added tones, alterations, omissions, and register-aware voicing.

Rebuild the chapter from first principles

The claim I need to own is this: Diatonic seventh chords add functional color and voice-leading tendency. Dominant, major, minor, half-diminished, and diminished sevenths lead to ninths, suspensions, added tones, alterations, omissions, and register-aware voicing. I do not count that as learned just because the sentence looks familiar. I should be able to name the objects, state what changes and what stays fixed, recover the rule from the definitions, and explain why the result is allowed.

The move

My working sequence

1. **Translate.** Rewrite the prompt in the language of seventh chords, extensions, and voicing economy. List the known quantities, the unknown, the units or types, and any hidden constraint.
2. **Choose.** State the theorem, model, algorithm, accounting rule, or physical law before substituting values. This is where I make the assumption visible.
3. **Execute.** Work one justified step at a time and keep intermediate state readable enough that I can audit it later.
4. **Verify.** Check a boundary case, sign, unit, invariant, order of magnitude, or alternative derivation. Then translate the result back into an ordinary sentence.

Details I would refuse to skip

- **Definitions:** I should be able to define every technical noun in the chapter without using that same noun in the definition.
- **Assumptions:** I write the condition that makes the method legal beside the method itself. A correct procedure under the wrong assumptions is still a wrong answer.
- **Representation:** I move freely among words, equations or code, a diagram, and a small numerical example. If one representation disagrees with another, that disagreement is useful evidence.
- **Failure modes:** I keep the nearest counterexample in mind: the boundary where the rule changes, the invariant breaks, or the model stops matching reality.
- **Communication:** My final answer names what the result means and what it does not establish. I do not let notation do the explanatory work for me.

Sanity check

Closed-note check. Can I teach seventh chords, extensions, and voicing economy on a blank page, derive or reconstruct its main rule, work a fresh example, and diagnose a deliberately broken solution? If I can only recognize the finished work, I am not done.

How this chapter connects

I read this chapter as the bridge from triads, inversions, figured bass, and keyboard voicing to functional harmony, cadences, and phrase design. The earlier material supplies the language and constraints; this chapter adds a new reasoning move; the later material asks me to use that move without being told its name. That connection matters because exams and real projects mix chapters on purpose.

The full working model

- **Core claim.** Diatonic seventh chords add functional color and voice-leading tendency.
- **What moves.** Dominant, major, minor, half-diminished, and diminished sevenths lead to ninths, suspensions, added tones, alterations, omissions, and register-aware voicing.

- **What keeps the answer honest.** The model becomes useful only when I can apply seventh chords, extensions, and voicing economy to an unfamiliar case and defend the assumptions.
- **Mastery standard.** I can define the objects, rebuild the rule, work a fresh case, compare alternatives, and diagnose a broken solution without relying on recognition.

How I actually think about it

I keep the guide tones clear and remove a redundant note before stretching for every possible extension.

The easy version

Diatonic seventh chords add functional color and voice-leading tendency.

Worked example

Question. Spell B half-diminished seventh.

Walkthrough. B-D-F-A: diminished triad plus minor seventh. In C major it functions as vii half-diminished of C.

Common miss

The fastest way to get this chapter wrong is to use the visible procedure without naming its assumption, units, time period, reference group, or boundary. I put that condition beside the work and verify the result independently.

Solved chapter practice

Practice 1. Spell B half-diminished seventh.

Solution. B-D-F-A: diminished triad plus minor seventh. In C major it functions as vii half-diminished of C.

Practice 2. Explain seventh chords, extensions, and voicing economy to a classmate using one definition, one concrete example, one assumption, and one failure mode.

Solution. Begin with the core claim above, use the worked case as the concrete example, state the condition highlighted by the warning, and choose a failure where that condition does not hold. A complete explanation connects all four pieces instead of listing them.

Mastery practice A. Reconstruct seventh chords, extensions, and voicing economy from a blank page. Include the central definition, the governing rule, one required assumption, and one boundary case.

Solution. Start from the blue idea box, but rewrite it in my own words. Identify the objects and state, name the rule before using it, copy the relevant assumption from the details audit, and choose a boundary where that assumption becomes equality or fails. A complete solution explains why each part belongs; a list of vocabulary is not enough.

Mastery practice B. A classmate gets a polished-looking answer to a seventh chords, extensions, and voicing economy problem but never states a model or checks the result. Write the shortest useful review of that solution.

Solution. I would ask four concrete questions: What exactly are the inputs and desired output?

Which rule licenses the main step? Which assumption could invalidate it? Which independent check supports the conclusion? If the answer cannot survive those four questions, I treat the numerical or verbal result as unverified.

CHAPTER 7 Functional harmony, cadences, and phrase design

The idea

Tonic, predominant, and dominant areas create departure and return. Authentic, half, plagal, and deceptive cadences articulate phrases; harmonic rhythm and inversion control momentum.

Rebuild the chapter from first principles

The claim I need to own is this: Tonic, predominant, and dominant areas create departure and return. Authentic, half, plagal, and deceptive cadences articulate phrases; harmonic rhythm and inversion control momentum. I do not count that as learned just because the sentence looks familiar. I should be able to name the objects, state what changes and what stays fixed, recover the rule from the definitions, and explain why the result is allowed.

The move

My working sequence

1. **Translate.** Rewrite the prompt in the language of functional harmony, cadences, and phrase design. List the known quantities, the unknown, the units or types, and any hidden constraint.
2. **Choose.** State the theorem, model, algorithm, accounting rule, or physical law before substituting values. This is where I make the assumption visible.
3. **Execute.** Work one justified step at a time and keep intermediate state readable enough that I can audit it later.
4. **Verify.** Check a boundary case, sign, unit, invariant, order of magnitude, or alternative derivation. Then translate the result back into an ordinary sentence.

Details I would refuse to skip

- **Definitions:** I should be able to define every technical noun in the chapter without using that same noun in the definition.
- **Assumptions:** I write the condition that makes the method legal beside the method itself. A correct procedure under the wrong assumptions is still a wrong answer.
- **Representation:** I move freely among words, equations or code, a diagram, and a small numerical example. If one representation disagrees with another, that disagreement is useful evidence.
- **Failure modes:** I keep the nearest counterexample in mind: the boundary where the rule changes, the invariant breaks, or the model stops matching reality.

- **Communication:** My final answer names what the result means and what it does not establish. I do not let notation do the explanatory work for me.

Sanity check

Closed-note check. Can I teach functional harmony, cadences, and phrase design on a blank page, derive or reconstruct its main rule, work a fresh example, and diagnose a deliberately broken solution? If I can only recognize the finished work, I am not done.

How this chapter connects

I read this chapter as the bridge from seventh chords, extensions, and voicing economy to voice leading and four-part writing. The earlier material supplies the language and constraints; this chapter adds a new reasoning move; the later material asks me to use that move without being told its name. That connection matters because exams and real projects mix chapters on purpose.

The full working model

- **Core claim.** Tonic, predominant, and dominant areas create departure and return.
- **What moves.** Authentic, half, plagal, and deceptive cadences articulate phrases; harmonic rhythm and inversion control momentum.
- **What keeps the answer honest.** The model becomes useful only when I can apply functional harmony, cadences, and phrase design to an unfamiliar case and defend the assumptions.
- **Mastery standard.** I can define the objects, rebuild the rule, work a fresh case, compare alternatives, and diagnose a broken solution without relying on recognition.

How I actually think about it

I listen for where the phrase breathes before labeling every vertical chord.

The easy version

Tonic, predominant, and dominant areas create departure and return.

Worked example

Question. Analyze Dm7-G7-Cmaj7 in C.

Walkthrough. It is ii7-V7-Imaj7, a predominant-dominant-tonic progression whose guide tones F and B resolve to E and C.

Common miss

The fastest way to get this chapter wrong is to use the visible procedure without naming its assumption, units, time period, reference group, or boundary. I put that condition beside the work and verify the result independently.

Solved chapter practice

Practice 1. Analyze Dm7-G7-Cmaj7 in C.

Solution. It is ii7-V7-Imaj7, a predominant-dominant-tonic progression whose guide tones F and B resolve to E and C.

Practice 2. Explain functional harmony, cadences, and phrase design to a classmate using one definition, one concrete example, one assumption, and one failure mode.

Solution. Begin with the core claim above, use the worked case as the concrete example, state the condition highlighted by the warning, and choose a failure where that condition does not hold. A complete explanation connects all four pieces instead of listing them.

Mastery practice A. Reconstruct functional harmony, cadences, and phrase design from a blank page. Include the central definition, the governing rule, one required assumption, and one boundary case.

Solution. Start from the blue idea box, but rewrite it in my own words. Identify the objects and state, name the rule before using it, copy the relevant assumption from the details audit, and choose a boundary where that assumption becomes equality or fails. A complete solution explains why each part belongs; a list of vocabulary is not enough.

Mastery practice B. A classmate gets a polished-looking answer to a functional harmony, cadences, and phrase design problem but never states a model or checks the result. Write the shortest useful review of that solution.

Solution. I would ask four concrete questions: What exactly are the inputs and desired output? Which rule licenses the main step? Which assumption could invalidate it? Which independent check supports the conclusion? If the answer cannot survive those four questions, I treat the numerical or verbal result as unverified.

CHAPTER 8 Voice leading and four-part writing

The idea

Voice leading preserves common tones, favors stepwise motion, resolves tendency tones, controls doubling, and avoids parallel perfect fifths or octaves in common-practice style. Contrary and oblique motion preserve independence.

Rebuild the chapter from first principles

The claim I need to own is this: Voice leading preserves common tones, favors stepwise motion, resolves tendency tones, controls doubling, and avoids parallel perfect fifths or octaves in common-practice style. Contrary and oblique motion preserve independence. I do not count that as learned just because the sentence looks familiar. I should be able to name the objects, state what changes and what stays fixed, recover the rule from the definitions, and explain why the result is allowed.

The move

My working sequence

1. **Translate.** Rewrite the prompt in the language of voice leading and four-part writing. List the known quantities, the unknown, the units or types, and any hidden constraint.
2. **Choose.** State the theorem, model, algorithm, accounting rule, or physical law before substituting values. This is where I make the assumption visible.
3. **Execute.** Work one justified step at a time and keep intermediate state readable enough that I can audit it later.
4. **Verify.** Check a boundary case, sign, unit, invariant, order of magnitude, or alternative derivation. Then translate the result back into an ordinary sentence.

Details I would refuse to skip

- **Definitions:** I should be able to define every technical noun in the chapter without using that same noun in the definition.
- **Assumptions:** I write the condition that makes the method legal beside the method itself. A correct procedure under the wrong assumptions is still a wrong answer.
- **Representation:** I move freely among words, equations or code, a diagram, and a small numerical example. If one representation disagrees with another, that disagreement is useful evidence.
- **Failure modes:** I keep the nearest counterexample in mind: the boundary where the rule changes, the invariant breaks, or the model stops matching reality.
- **Communication:** My final answer names what the result means and what it does not establish. I do not let notation do the explanatory work for me.

Sanity check

Closed-note check. Can I teach voice leading and four-part writing on a blank page, derive or reconstruct its main rule, work a fresh example, and diagnose a deliberately broken solution? If I can only recognize the finished work, I am not done.

How this chapter connects

I read this chapter as the bridge from functional harmony, cadences, and phrase design to accompaniment textures and harmonic rhythm. The earlier material supplies the language and constraints; this chapter adds a new reasoning move; the later material asks me to use that move without being told its name. That connection matters because exams and real projects mix chapters on purpose.

The full working model

- **Core claim.** Voice leading preserves common tones, favors stepwise motion, resolves tendency tones, controls doubling, and avoids parallel perfect fifths or octaves in common-practice style.
- **What moves.** Contrary and oblique motion preserve independence.

- **What keeps the answer honest.** The model becomes useful only when I can apply voice leading and four-part writing to an unfamiliar case and defend the assumptions.
- **Mastery standard.** I can define the objects, rebuild the rule, work a fresh case, compare alternatives, and diagnose a broken solution without relying on recognition.

How I actually think about it

My shorthand for this chapter is: my shorthand for this chapter is: the chord symbols are only checkpoints; the individual voices tell the actual story.

The easy version

Voice leading preserves common tones, favors stepwise motion, resolves tendency tones, controls doubling, and avoids parallel perfect fifths or octaves in common-practice style.

Worked example

Question. Resolve G7 to C in four parts.

Walkthrough. Lead B up to C and F down to E, retain G where useful, and move D to C or E while avoiding parallels and keeping each voice in range.

Common miss

The fastest way to get this chapter wrong is to use the visible procedure without naming its assumption, units, time period, reference group, or boundary. I put that condition beside the work and verify the result independently.

Solved chapter practice

Practice 1. Resolve G7 to C in four parts.

Solution. Lead B up to C and F down to E, retain G where useful, and move D to C or E while avoiding parallels and keeping each voice in range.

Practice 2. Explain voice leading and four-part writing to a classmate using one definition, one concrete example, one assumption, and one failure mode.

Solution. Begin with the core claim above, use the worked case as the concrete example, state the condition highlighted by the warning, and choose a failure where that condition does not hold. A complete explanation connects all four pieces instead of listing them.

Mastery practice A. Reconstruct voice leading and four-part writing from a blank page. Include the central definition, the governing rule, one required assumption, and one boundary case.

Solution. Start from the blue idea box, but rewrite it in my own words. Identify the objects and state, name the rule before using it, copy the relevant assumption from the details audit, and choose a boundary where that assumption becomes equality or fails. A complete solution explains why each part belongs; a list of vocabulary is not enough.

Mastery practice B. A classmate gets a polished-looking answer to a voice leading and four-part writing problem but never states a model or checks the result. Write the shortest useful review of that solution.

Solution. I would ask four concrete questions: What exactly are the inputs and desired output?

Which rule licenses the main step? Which assumption could invalidate it? Which independent check supports the conclusion? If the answer cannot survive those four questions, I treat the numerical or verbal result as unverified.

CHAPTER 9 Accompaniment textures and harmonic rhythm

The idea

Block chords, broken chords, Alberti bass, stride, shells, walking bass, ostinato, pads, arpeggiation, and rhythmic comping distribute harmony across hands. Texture should support melody, register, genre, and ensemble role.

Rebuild the chapter from first principles

The claim I need to own is this: Block chords, broken chords, Alberti bass, stride, shells, walking bass, ostinato, pads, arpeggiation, and rhythmic comping distribute harmony across hands. Texture should support melody, register, genre, and ensemble role. I do not count that as learned just because the sentence looks familiar. I should be able to name the objects, state what changes and what stays fixed, recover the rule from the definitions, and explain why the result is allowed.

The move

My working sequence

1. **Translate.** Rewrite the prompt in the language of accompaniment textures and harmonic rhythm. List the known quantities, the unknown, the units or types, and any hidden constraint.
2. **Choose.** State the theorem, model, algorithm, accounting rule, or physical law before substituting values. This is where I make the assumption visible.
3. **Execute.** Work one justified step at a time and keep intermediate state readable enough that I can audit it later.
4. **Verify.** Check a boundary case, sign, unit, invariant, order of magnitude, or alternative derivation. Then translate the result back into an ordinary sentence.

Details I would refuse to skip

- **Definitions:** I should be able to define every technical noun in the chapter without using that same noun in the definition.
- **Assumptions:** I write the condition that makes the method legal beside the method itself. A correct procedure under the wrong assumptions is still a wrong answer.
- **Representation:** I move freely among words, equations or code, a diagram, and a small numerical example. If one representation disagrees with another, that disagreement is useful evidence.
- **Failure modes:** I keep the nearest counterexample in mind: the boundary where the rule changes,

the invariant breaks, or the model stops matching reality.

- **Communication:** My final answer names what the result means and what it does not establish. I do not let notation do the explanatory work for me.

Sanity check

Closed-note check. Can I teach accompaniment textures and harmonic rhythm on a blank page, derive or reconstruct its main rule, work a fresh example, and diagnose a deliberately broken solution? If I can only recognize the finished work, I am not done.

How this chapter connects

I read this chapter as the bridge from voice leading and four-part writing to secondary dominants, mixture, modulation, and modes. The earlier material supplies the language and constraints; this chapter adds a new reasoning move; the later material asks me to use that move without being told its name. That connection matters because exams and real projects mix chapters on purpose.

The full working model

- **Core claim.** Block chords, broken chords, Alberti bass, stride, shells, walking bass, ostinato, pads, arpeggiation, and rhythmic comping distribute harmony across hands.
- **What moves.** Texture should support melody, register, genre, and ensemble role.
- **What keeps the answer honest.** The model becomes useful only when I can apply accompaniment textures and harmonic rhythm to an unfamiliar case and defend the assumptions.
- **Mastery standard.** I can define the objects, rebuild the rule, work a fresh case, compare alternatives, and diagnose a broken solution without relying on recognition.

How I actually think about it

My shorthand for this chapter is: my left hand should clarify the groove and harmony, not compete with the bass player or singer.

The easy version

Block chords, broken chords, Alberti bass, stride, shells, walking bass, ostinato, pads, arpeggiation, and rhythmic comping distribute harmony across hands.

Worked example

Question. Create a simple 4/4 pop accompaniment for C-Am-F-G.

Walkthrough. Play roots or root-fifth shells in the left hand and syncopated triads or inversions in the right, choosing close voice leading such as E-G-C to E-A-C to F-A-C to F-G-B.

Common miss

The fastest way to get this chapter wrong is to use the visible procedure without naming its assumption, units, time period, reference group, or boundary. I put that condition beside the work and verify the result independently.

Solved chapter practice

Practice 1. Create a simple 4/4 pop accompaniment for C-Am-F-G.

Solution. Play roots or root-fifth shells in the left hand and syncopated triads or inversions in the right, choosing close voice leading such as E-G-C to E-A-C to F-A-C to F-G-B.

Practice 2. Explain accompaniment textures and harmonic rhythm to a classmate using one definition, one concrete example, one assumption, and one failure mode.

Solution. Begin with the core claim above, use the worked case as the concrete example, state the condition highlighted by the warning, and choose a failure where that condition does not hold. A complete explanation connects all four pieces instead of listing them.

Mastery practice A. Reconstruct accompaniment textures and harmonic rhythm from a blank page. Include the central definition, the governing rule, one required assumption, and one boundary case.

Solution. Start from the blue idea box, but rewrite it in my own words. Identify the objects and state, name the rule before using it, copy the relevant assumption from the details audit, and choose a boundary where that assumption becomes equality or fails. A complete solution explains why each part belongs; a list of vocabulary is not enough.

Mastery practice B. A classmate gets a polished-looking answer to a accompaniment textures and harmonic rhythm problem but never states a model or checks the result. Write the shortest useful review of that solution.

Solution. I would ask four concrete questions: What exactly are the inputs and desired output? Which rule licenses the main step? Which assumption could invalidate it? Which independent check supports the conclusion? If the answer cannot survive those four questions, I treat the numerical or verbal result as unverified.

CHAPTER 10 Secondary dominants, mixture, modulation, and modes

The idea

Chromatic harmony expands diatonic function through applied dominants, borrowed chords, tonicization, common-chord modulation, altered dominants, modal mixture, and modal centers.

Rebuild the chapter from first principles

The claim I need to own is this: Chromatic harmony expands diatonic function through applied dominants, borrowed chords, tonicization, common-chord modulation, altered dominants, modal mixture, and modal centers. I do not count that as learned just because the sentence looks familiar. I should be able to name the objects, state what changes and what stays fixed, recover the rule from the definitions,

and explain why the result is allowed.

The move

My working sequence

1. **Translate.** Rewrite the prompt in the language of secondary dominants, mixture, modulation, and modes. List the known quantities, the unknown, the units or types, and any hidden constraint.
2. **Choose.** State the theorem, model, algorithm, accounting rule, or physical law before substituting values. This is where I make the assumption visible.
3. **Execute.** Work one justified step at a time and keep intermediate state readable enough that I can audit it later.
4. **Verify.** Check a boundary case, sign, unit, invariant, order of magnitude, or alternative derivation. Then translate the result back into an ordinary sentence.

Details I would refuse to skip

- **Definitions:** I should be able to define every technical noun in the chapter without using that same noun in the definition.
- **Assumptions:** I write the condition that makes the method legal beside the method itself. A correct procedure under the wrong assumptions is still a wrong answer.
- **Representation:** I move freely among words, equations or code, a diagram, and a small numerical example. If one representation disagrees with another, that disagreement is useful evidence.
- **Failure modes:** I keep the nearest counterexample in mind: the boundary where the rule changes, the invariant breaks, or the model stops matching reality.
- **Communication:** My final answer names what the result means and what it does not establish. I do not let notation do the explanatory work for me.

Sanity check

Closed-note check. Can I teach secondary dominants, mixture, modulation, and modes on a blank page, derive or reconstruct its main rule, work a fresh example, and diagnose a deliberately broken solution? If I can only recognize the finished work, I am not done.

How this chapter connects

I read this chapter as the bridge from accompaniment textures and harmonic rhythm to analysis, composition, and reharmonization. The earlier material supplies the language and constraints; this chapter adds a new reasoning move; the later material asks me to use that move without being told its name. That connection matters because exams and real projects mix chapters on purpose.

The full working model

- **Core claim.** Chromatic harmony expands diatonic function through applied dominants, borrowed chords, tonicization, common-chord modulation, altered dominants, modal mixture, and modal centers.
- **What moves.** The model becomes useful only when I can apply secondary dominants, mixture, modulation, and modes to an unfamiliar case and defend the assumptions.
- **What keeps the answer honest.** The model becomes useful only when I can apply secondary dominants, mixture, modulation, and modes to an unfamiliar case and defend the assumptions.
- **Mastery standard.** I can define the objects, rebuild the rule, work a fresh case, compare alternatives, and diagnose a broken solution without relying on recognition.

How I actually think about it

I ask what temporary note or chord is being made to feel like home.

The easy version

Chromatic harmony expands diatonic function through applied dominants, borrowed chords, tonicization, common-chord modulation, altered dominants, modal mixture, and modal centers.

Worked example

Question. In C major, what is V of V?

Walkthrough. D major or D7, spelled D-F-sharp-A-(C), because G is the dominant and D is G's dominant. F-sharp is the chromatic leading tone to G.

Common miss

The fastest way to get this chapter wrong is to use the visible procedure without naming its assumption, units, time period, reference group, or boundary. I put that condition beside the work and verify the result independently.

Solved chapter practice

Practice 1. In C major, what is V of V?

Solution. D major or D7, spelled D-F-sharp-A-(C), because G is the dominant and D is G's dominant. F-sharp is the chromatic leading tone to G.

Practice 2. Explain secondary dominants, mixture, modulation, and modes to a classmate using one definition, one concrete example, one assumption, and one failure mode.

Solution. Begin with the core claim above, use the worked case as the concrete example, state the condition highlighted by the warning, and choose a failure where that condition does not hold. A complete explanation connects all four pieces instead of listing them.

Mastery practice A. Reconstruct secondary dominants, mixture, modulation, and modes from a blank page. Include the central definition, the governing rule, one required assumption, and one boundary case.

Solution. Start from the blue idea box, but rewrite it in my own words. Identify the objects and state, name the rule before using it, copy the relevant assumption from the details audit, and choose a boundary where that assumption becomes equality or fails. A complete solution explains why each part belongs; a list of vocabulary is not enough.

Mastery practice B. A classmate gets a polished-looking answer to a secondary dominants, mixture, modulation, and modes problem but never states a model or checks the result. Write the shortest useful review of that solution.

Solution. I would ask four concrete questions: What exactly are the inputs and desired output? Which rule licenses the main step? Which assumption could invalidate it? Which independent check supports the conclusion? If the answer cannot survive those four questions, I treat the numerical or verbal result as unverified.

CHAPTER 11 Analysis, composition, and reharmonization

The idea

Analysis follows motive, phrase, bass, harmonic function, form, texture, rhythm, register, and expectation. Composition develops limited material; reharmonization changes support while respecting melody, pacing, and style.

Rebuild the chapter from first principles

The claim I need to own is this: Analysis follows motive, phrase, bass, harmonic function, form, texture, rhythm, register, and expectation. Composition develops limited material; reharmonization changes support while respecting melody, pacing, and style. I do not count that as learned just because the sentence looks familiar. I should be able to name the objects, state what changes and what stays fixed, recover the rule from the definitions, and explain why the result is allowed.

The move

My working sequence

1. **Translate.** Rewrite the prompt in the language of analysis, composition, and reharmonization. List the known quantities, the unknown, the units or types, and any hidden constraint.
2. **Choose.** State the theorem, model, algorithm, accounting rule, or physical law before substituting values. This is where I make the assumption visible.
3. **Execute.** Work one justified step at a time and keep intermediate state readable enough that I can audit it later.
4. **Verify.** Check a boundary case, sign, unit, invariant, order of magnitude, or alternative derivation. Then translate the result back into an ordinary sentence.

Details I would refuse to skip

- **Definitions:** I should be able to define every technical noun in the chapter without using that same noun in the definition.
- **Assumptions:** I write the condition that makes the method legal beside the method itself. A correct procedure under the wrong assumptions is still a wrong answer.
- **Representation:** I move freely among words, equations or code, a diagram, and a small numerical example. If one representation disagrees with another, that disagreement is useful evidence.
- **Failure modes:** I keep the nearest counterexample in mind: the boundary where the rule changes, the invariant breaks, or the model stops matching reality.
- **Communication:** My final answer names what the result means and what it does not establish. I do not let notation do the explanatory work for me.

Sanity check

Closed-note check. Can I teach analysis, composition, and reharmonization on a blank page, derive or reconstruct its main rule, work a fresh example, and diagnose a deliberately broken solution? If I can only recognize the finished work, I am not done.

How this chapter connects

I read this chapter as the bridge from secondary dominants, mixture, modulation, and modes to ear training, sight reading, improvisation, and practice. The earlier material supplies the language and constraints; this chapter adds a new reasoning move; the later material asks me to use that move without being told its name. That connection matters because exams and real projects mix chapters on purpose.

The full working model

- **Core claim.** Analysis follows motive, phrase, bass, harmonic function, form, texture, rhythm, register, and expectation.
- **What moves.** Composition develops limited material; reharmonization changes support while respecting melody, pacing, and style.
- **What keeps the answer honest.** The model becomes useful only when I can apply analysis, composition, and reharmonization to an unfamiliar case and defend the assumptions.
- **Mastery standard.** I can define the objects, rebuild the rule, work a fresh case, compare alternatives, and diagnose a broken solution without relying on recognition.

How I actually think about it

I write a small musical claim and develop it instead of adding unrelated clever chords.

The easy version

Analysis follows motive, phrase, bass, harmonic function, form, texture, rhythm, register, and expectation.

Worked example

Question. Reharmonize C-Cmaj7-Am-F with a descending bass.

Walkthrough. Try C, C/B, Am7, F/A or F, then continue through a compatible bass such as G. Check that melody notes belong or act as intentional tensions.

Common miss

The fastest way to get this chapter wrong is to use the visible procedure without naming its assumption, units, time period, reference group, or boundary. I put that condition beside the work and verify the result independently.

Solved chapter practice

Practice 1. Reharmonize C-Cmaj7-Am-F with a descending bass.

Solution. Try C, C/B, Am7, F/A or F, then continue through a compatible bass such as G. Check that melody notes belong or act as intentional tensions.

Practice 2. Explain analysis, composition, and reharmonization to a classmate using one definition, one concrete example, one assumption, and one failure mode.

Solution. Begin with the core claim above, use the worked case as the concrete example, state the condition highlighted by the warning, and choose a failure where that condition does not hold. A complete explanation connects all four pieces instead of listing them.

Mastery practice A. Reconstruct analysis, composition, and reharmonization from a blank page. Include the central definition, the governing rule, one required assumption, and one boundary case.

Solution. Start from the blue idea box, but rewrite it in my own words. Identify the objects and state, name the rule before using it, copy the relevant assumption from the details audit, and choose a boundary where that assumption becomes equality or fails. A complete solution explains why each part belongs; a list of vocabulary is not enough.

Mastery practice B. A classmate gets a polished-looking answer to a analysis, composition, and reharmonization problem but never states a model or checks the result. Write the shortest useful review of that solution.

Solution. I would ask four concrete questions: What exactly are the inputs and desired output? Which rule licenses the main step? Which assumption could invalidate it? Which independent check supports the conclusion? If the answer cannot survive those four questions, I treat the numerical or verbal result as unverified.

CHAPTER 12 Ear training, sight reading, improvisation, and practice

The idea

Keyboard musicianship integrates singing, interval and chord recognition, dictation, sight reading, transposition, improvisation, technique, repertoire, and reflective practice. Fluency grows through short daily retrieval, not one long recognition session.

Rebuild the chapter from first principles

The claim I need to own is this: Keyboard musicianship integrates singing, interval and chord recognition, dictation, sight reading, transposition, improvisation, technique, repertoire, and reflective practice. Fluency grows through short daily retrieval, not one long recognition session. I do not count that as learned just because the sentence looks familiar. I should be able to name the objects, state what changes and what stays fixed, recover the rule from the definitions, and explain why the result is allowed.

The move

My working sequence

1. **Translate.** Rewrite the prompt in the language of ear training, sight reading, improvisation, and practice. List the known quantities, the unknown, the units or types, and any hidden constraint.
2. **Choose.** State the theorem, model, algorithm, accounting rule, or physical law before substituting values. This is where I make the assumption visible.
3. **Execute.** Work one justified step at a time and keep intermediate state readable enough that I can audit it later.
4. **Verify.** Check a boundary case, sign, unit, invariant, order of magnitude, or alternative derivation. Then translate the result back into an ordinary sentence.

Details I would refuse to skip

- **Definitions:** I should be able to define every technical noun in the chapter without using that same noun in the definition.
- **Assumptions:** I write the condition that makes the method legal beside the method itself. A correct procedure under the wrong assumptions is still a wrong answer.
- **Representation:** I move freely among words, equations or code, a diagram, and a small numerical example. If one representation disagrees with another, that disagreement is useful evidence.
- **Failure modes:** I keep the nearest counterexample in mind: the boundary where the rule changes, the invariant breaks, or the model stops matching reality.
- **Communication:** My final answer names what the result means and what it does not establish. I do not let notation do the explanatory work for me.

Sanity check

Closed-note check. Can I teach ear training, sight reading, improvisation, and practice on a blank page, derive or reconstruct its main rule, work a fresh example, and diagnose a deliberately broken solution? If I can only recognize the finished work, I am not done.

How this chapter connects

I read this chapter as the bridge from analysis, composition, and reharmonization to the cumulative course model. The earlier material supplies the language and constraints; this chapter adds a new reasoning move; the later material asks me to use that move without being told its name. That connection matters because exams and real projects mix chapters on purpose.

The full working model

- **Core claim.** Keyboard musicianship integrates singing, interval and chord recognition, dictation, sight reading, transposition, improvisation, technique, repertoire, and reflective practice.
- **What moves.** Fluency grows through short daily retrieval, not one long recognition session.
- **What keeps the answer honest.** The model becomes useful only when I can apply ear training, sight reading, improvisation, and practice to an unfamiliar case and defend the assumptions.
- **Mastery standard.** I can define the objects, rebuild the rule, work a fresh case, compare alternatives, and diagnose a broken solution without relying on recognition.

How I actually think about it

I practice the thing my ear predicted, not only the thing my fingers already know.

The easy version

Keyboard musicianship integrates singing, interval and chord recognition, dictation, sight reading, transposition, improvisation, technique, repertoire, and reflective practice.

Worked example

Question. Design a 30-minute piano-theory routine.

Walkthrough. Five minutes rhythm and sight reading, five scales in one key, five diatonic chords and inversions, five sing-and-play intervals, five harmonize or transpose a melody, and five improvise then record a short form.

Common miss

The fastest way to get this chapter wrong is to use the visible procedure without naming its assumption, units, time period, reference group, or boundary. I put that condition beside the work and verify the result independently.

Solved chapter practice

Practice 1. Design a 30-minute piano-theory routine.

Solution. Five minutes rhythm and sight reading, five scales in one key, five diatonic chords and inversions, five sing-and-play intervals, five harmonize or transpose a melody, and five improvise then record a short form.

Practice 2. Explain ear training, sight reading, improvisation, and practice to a classmate using one definition, one concrete example, one assumption, and one failure mode.

Solution. Begin with the core claim above, use the worked case as the concrete example, state the condition highlighted by the warning, and choose a failure where that condition does not hold. A complete explanation connects all four pieces instead of listing them.

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Cumulative study plan

I use this packet in three passes. First I reconstruct each model and work its examples without looking. Second I mix chapters so the tool is no longer named for me. Third I explain a complete case aloud, including assumptions, units, uncertainty, failure modes, and what evidence would change my conclusion.