

## MUSC 4A (ADDUCI) – FINAL EXAM STUDY GUIDE

- For the final exam, you will be asked analytical questions about the six scores included in your Final Exam Score Packet (available at [www.sjsu.edu/faculty/madduci/](http://www.sjsu.edu/faculty/madduci/)). You may write any notes you like on the score packet and bring it to the exam with you. Everyone must turn their packet in with their final exam. The exam may ask you to write certain things in the score packet, but apart from that the packet itself will not be graded – it is only a tool to assist in your exam preparation.
- In addition to questions involving analysis of the scores as mentioned above, there will be short-answer questions about the different styles and techniques we have covered this semester (similar in format to the questions on the midterm exam). You may be asked to write short musical examples to illustrate a particular technique.
- Below you will find an outline of the topics we have covered this semester. This is not exhaustive – it is intended to supplement your own lecture notes and readings. *Wagner and electronic music will not be covered on the exam.*

### 4A TOPICS:

1. 20<sup>th</sup> century scale resources: scales involving between 5-12 notes.
  - Pentatonic scales (major and minor)
    - Pentatonic scales can have modes – I, II, III... starting on each member of the scale. Major pentatonic is mode I, minor pentatonic is mode V.
  - Whole tone scale – 2 forms. Can start on any note – no “tonic.”
  - 7-note scales
    - Major/minor
    - Diatonic modes
    - Other synthetic scales – synthetic means “new to this century” – for example, combining tetrachords of modes (eg, lydian dominant).
  - Octatonic scales – “split-tone” scales – created by splitting a 7-note scale.
    - Example: CDEFF#GAB – eight notes – a c major scale with a split F.
    - Special type: diminished scales. Created by combining 2 fully-dim 7<sup>th</sup> chords that don’t share any pitch classes in common: c#o7 and co7
      - Repeated pattern of WHWHWHWH, or HWHWHWHW
      - Note names don’t matter – pitch class does. These scales will have seven diatonic steps, and one split note.
  - Other split-tone synthetic scales – can have as many as 9, 10 or 11 notes.
  - Chromatic scale (fully split) has 12 notes.
2. 20<sup>th</sup> century rhythm resources.
  - Isorhythm – more complicated than a simple ostinato (repeated pattern). Requires a rhythmic pattern (talea) and a pitch pattern (color), that cycle at different rates. This is used to displace the accent pattern of the meter.
  - Syncopation or displaced accents – used much more often in this time period.
  - Asymmetrical meter – the beats are of different lengths (5/8 time is 2+3 or 3+2)
  - Reorganized meter – changing the accent pattern of a traditional time signature:
    - For example: 9/8 time is usually 3+3+3. Make it 2+2+2+2+1.
  - Changing or mixed meters – frequent change of time signature, particularly between simple and compound time.
  - Hybrid time signatures – combinations of simple and compound beats (11/8; 2/4 + 1/8)
  - Ametrical rhythm – no time signature or bar lines
  - Polyrythm – conflicting rhythms at the same time (2 vs 3, etc)
  - Polymeter – two different time signatures at the same time.
3. Impressionism.
  - Claude Debussy.
    - He used whatever harmonies occurred to him – didn’t follow any rules.

- Wagner used chords with expectations attached and then didn't fulfill them. Debussy instead tries to hide functionality under layers of material that do not have expectations / tendency – whole tone scales, augmented chords, etc.
- However, he was trained in the tonal era, and his music does contain a lot of “functionality,” just carefully hidden.
- Techniques of impressionism:
  - Density and texture – using the full range of the keyboard – register is very important. Often a wide distance between top melody line and lowest accompanying line.
  - Harmonic/functional ambiguity: Expanding and blurring traditional relationships and harmonic functions. Still uses functional concepts like V-I, but they are less frequent and not used “traditionally.”
  - Linearity: Increased importance of scales and melodic patterns, interval patterns, ostinato / repetition, instead of vertical harmony.
    - The music is more linear, less chordal even though it often involves widely-spaced chords.
    - Ostinato: repetition, focus on intervals, melodies emerging out of a cluster of repeated notes. Systematic repetition of small elements can create a recognizable melody.
    - Emphasis on parallel motion, particularly parallel perfect intervals (previously “forbidden”). Things like parallel P5 and whole-tone scales help obscure the idea of leading tone and dominant resolutions.
  - Planing. Parallel melodic motion (not harmonic motion) between 2 or more lines/voices.
    - Diatonic planing - the melodic equivalent of a tonal sequence. The interval classes are the same, but not necessarily the quality.
    - Chromatic planing – the equivalent of a real sequence. Interval classes and qualities are exactly in parallel.
    - Basically, diatonic planing means the letter names change by the same amount. In chromatic planing, the interval qualities are also preserved. Has nothing to do with being “in” or “out” of the “key.”
  - Tendency: Using recognizable chords with a functional tendency in ways that do not obey that chord's resolution tendency (without regard for their traditional function).
    - In chromatic passages, esp. stepwise passages, the stepwise motion may be the primary goal (linear focus).
    - Also, the chords could have a hidden function based on their root. This is a new view of “progression:” In the common practice period, progression was root movement down by 5<sup>th</sup>, down by 3<sup>rd</sup>, or up by 2<sup>nd</sup>. For impressionists, progression was up or down by 5<sup>th</sup> or 3<sup>rd</sup>, and up or down by 2<sup>nd</sup>.
    - The chord could have an enharmonic function – spelling is not important (only to show tendency). For any chord, all of its enharmonic possibilities coexist and are equally likely.
    - The chord may have multiple or altered functions (e.g., tritone substitution)
  - Add-note chords (different than extended chords – no tendency).
    - Take a tertian chord, and add another note (2 or 6. 4, usually in a minor chord only – otherwise there is a m2 in the chord).
    - Not a “tall chord” (9,11,13). The added note has no tendency and doesn't have to resolve. It is also close to the chord root (tall chords usually don't invert). Adds color and density to a triad.
  - Augmented triads.
    - In the common practice period, only III+ (minor).
    - In late Romantic music: V+ (altered dominants).
    - 20<sup>th</sup> century – any Major chord can be made augmented.
      - Gives the chord a new color
      - Debussy usually used them in planing passages – for their tonal ambiguity.

- Can be also used, like a viio7, as an “inversionless” chord – no matter what inversion is used, the bass note always sounds like the root. This makes the chord useful for modulation.
    - The inverted chord can be spelled enharmonically to trigger different resolutions. The “#5” of the triad has a tendency to resolve upward, and the new root has a tendency to resolve down by 5<sup>th</sup>.
  - Modality vs. tonality; modes and modal cadences.
    - Phrygian cadence – in medieval music using Phrygian mode, II-I involved a half-step (upper neighbor). Now – any cadence can be made “Phrygian” by adding a descending half-step in the bass.
    - Mixolydian cadence: v – I OR VII – I (dorian would be VII – i)
    - Other modes don’t get their own cadential names. Any cadence that is not AC, PC, DC, HC we can call “modal” – particularly whole-step resolutions 7-1, 2-1, or anything you want.
    - Modal cadences tend to be stepwise, ending on tonic.
  - Other cadence types:
    - Linear cadence: a set of converging, diverging or oblique melodic lines, arriving at a unison or octave.
    - Third-relationship cadences (modal cadences are usually stepwise), phrase ends with chords with roots a third apart.
4. Further embellishments to tertian harmony
- Add note chords – “soft dissonance”
  - Tall chords
  - Indeterminate chord – leave out the 3<sup>rd</sup>, no quality. Could have a 7<sup>th</sup>.
    - Analyze as root + “ind” (Cind).
    - Quality is implied by tonal context – if major, it sounds major, etc.
    - Not a quartal/quintal chord, because it is not a stack of 4ths or 5ths – only one open 5<sup>th</sup>. Also, quartal/quintal sounds tend to occur in areas, not as one isolated chord.
  - Suspended chord – like an indeterminate chord with an add 4 or an add 2. No third. Sounds “suspended” but is not a suspension – the sus pitch does not have to fall or resolve.
  - Split note chords – adding a chromatic version of a chord tone. Common in early 20<sup>th</sup> C.
    - Split the root up, the fifth down, and the third up or down (to capture both major and minor quality).
    - Likely form: a chord with both a m3 and M3. C E G (Bb) Eb. (generally not voiced right next to each other).
    - Analyze with an exclamation point to show the split? C7(3!).
5. 20<sup>th</sup> Century concepts and definitions:
- Disjunct melody – 20<sup>th</sup> century music is more “leapy,” less stepwise (conjunct) motion.
  - Pitch Class – the specific frequency that produces a certain pitch, including all enharmonic names and all octaves. B, A# and Cb are all one pitch class.
  - Harmony – any set of simultaneous sounds. Does not imply consonance. “Verticality” or “simultaneity” instead of “chord”
    - Tertian – spelled in 3rds. Common Practice.
    - Secundal – spelled in 2nds (CDE) – no implied quality. Developed pre 1920s – Cowell, Joplin.
      - Cluster chords – combinations of at least 3 notes, all m2 and M2, all adjacent (usually not in open position – loses its dissonance).
        - Broader def’n: 3 or more adjacent scale tones – so could have leaps (harm. minor, penta. scale)
        - Whole tone – all M2
        - Chromatic – all m2
      - Chord “root” is not relevant – analyze as “S” ; but make sure it really is a secundal chord (could be an add chord)

- Notation – could notate exact pitches, or just block off a region of the staff.
- Quartal/Quintal harmony
  - chords spelled in 4ths/5ths (CFBb); usually perfect; no implied quality. A major factor in 20<sup>th</sup> century harmony from Impressionism until WWII. Composers: Stravinsky, Bartok, Copland, Hindemith.
  - Structure – stacks of 4ths and 5ths. At least three pitch classes. Analyze with chord root (re-stack in 4ths/5ths as necessary) plus Q4 or Q5.
    - Spacing – consider AQ4 (ADGCFBbEb) vs. Bb13 (BbDFACEbG) – close vs. open position changes whether we perceive the sound as “quartal” or not.
    - Could be consonant (all P4/P5) or dissonant (containing an A4 OR more than 5 notes)
      - CFBbE: CQ4. dissonant (P4P4P4A4)
    - Could be pure (all 4ths/5ths) or not (includes other intervals – mix of Q4 and tertian sounds – adds dissonance)
      - CFBbD – CQ4 (impure, P4P4M3). Not Bbadd2 – that would be BbCDF.
      - EGAD, though, is not impure – it is EQ4: EADG, just not in root position.
  - Labeling: assume pure and consonant. Label anything else.

## 6. Free tonality

- Broadly describes the music written between Impressionism and Expressionism. Still a recognizable tonal center, but we are free to achieve it how we like – we are not constrained by functional or diatonic relationships. Free tonal music is not in a regular key or mode, but it has a clear, obvious tonal center (reinforced by rhythm/melody). It uses any predetermined combination of pitches from the chromatic scale. It avoids traditional diatonic functions, especially dominant-tonic motions.
- Representative composers of Free Tonality – Copland and Hindemith.
  - Both Copland and Hindemith use Q4/Q5 plus their own harmonic language.
  - Copland’s language is mainly tertian with pandiatonic and/or Q4/Q5 embellishments both for melody and harmony; also open spaced melodies that involve some 4ths and 5ths make the music sound quartal even when it is tertian.
  - Hindemith’s language is often quartal, with tertian harmonies appearing at cadences. He had his own specific ideas about music theory:
    - Tonality – tonal center is the most important note of any set of pitches. Established primarily by melodic and rhythmic emphasis, rather than by traditional tonal and functional relationships (although those are also acceptable).
    - There are only twelve “keys,” one for each pitch of the chromatic scale; there is no “major” and “minor.”
    - Use of ostinato and classical devices such as fugue; overlap of rhythmic and melodic motives; arrival at cadences; repetition/insistence – this is how he establishes his “tonic.”
    - Dissonance – music moves from consonant intervals to progressively more dissonant intervals, then suddenly jumps back to consonance. This is illustrated by his use of tertian / triadic structures at cadences. In addition to Q4/Q5, he emphasizes dissonant 2nds and 7ths.
      - His scale of dissonance: P8 P5 P4 M3 m6 M6 m3 m7 M2 M7 m2 TT
    - His music takes ideas and elaborates them serially, each time bigger and with more tension, finishing at higher and higher pitch levels, until the resolution.

## 7. Pandiatonicism

- A more restrictive subcategory of free tonality: using all notes of a particular key or pitch set freely. Not obeying functions/tendencies – any notes can be used in any combinations.
- Few or no altered notes – needs to stay “diatonic.”
- Can result in chains of add chords, extended chords, suspended chords, etc., making Roman numeral analysis less useful.
- Should have a clear tonal center.

## 8. Polychords

- More than one recognizable harmonic structure at the same time.
  - Could be a pair of tertian triads; could be a tertian chord plus a quartal chord; or any combination of resources.
  - Usually no more than two different simultaneities – more than that is hard to distinguish.
- Notation: ID each chord, putting the highest sounding chord on top of the other, separated by a horizontal line.
- For greatest effect, the chords need to be discrete:
  - Separated within the vertical texture (high and low, winds and strings, etc)
  - Triadic / close position – not widely voiced throughout the orchestra
  - Different from each other – if they contain too many common tones the ear will combine the chords together to create a recognizable respelling like a tall chord or add chord.

## 9. Polytonality

- Music that has more than one tonal center at the same time. Usually expressed by having different melodic lines appear in different keys.
- Usually “bitonality” – more than two tonal centers are hard to reconcile.
- Can use different key signatures, or just accidentals.
- Not the same as modal mixture or borrowing – there need to be two discrete layers of the music that are functioning at different tonal centers.
- To make the different tonal centers work, polytonal music tends to be very simple in structure.

## 10. Bimodality

- Same concept as polytonality, but in this case both keys have the same tonal center – most commonly, major and parallel minor coexisting, or different modes within the same root. C Major and C Lydian could coexist, for example.
- Again, not the same as modal mixture – discrete layers in conflicting modes.

## 11. Serial atonality (serialism; twelve-tonality, dodecaphony)

- Why? A reaction against the flexibility of free tonality and free atonality, the desire to totally control all aspects of composition, and to remove previous perceptions and expectations of harmony. Also a desire to find a new way to write music, without need for a traditional “tonic” or sense of harmonic motion.
  - In their view, the logical next step in musical development – in line with Bach, Beethoven, Brahms, Wagner (not Debussy).
  - 1920s-1950s. Schoenberg was the pioneer. With his students Webern and Berg, the “2<sup>nd</sup> Viennese School”
- Method.
  - All 12 pitches of the chromatic scale are equally important, so that no single pitch dominates the structure of the music. Not “atonal” – just lacking a tonal center. Or having 12 equal tonal centers.
  - Rules:
    - The twelve pitch classes of the chromatic scale are placed in an order called the “tone row.” (octave does not matter – remember def’n of pitch class). The row may totally avoid tonal references, or it may exploit them.
    - The pitches may not be played out of order.
    - The pitches may not be repeated, unless repeated immediately.
    - No octave doublings.
  - Row forms:
    - The tone row in its original form is called the “prime” row.
    - Inversion = melodic inversion of the row (up a M3 becomes down a M3)
    - Retrograde = the prime row, played backwards
    - Retrograde Inversion = the inverted row, played backwards.
  - Transposition:

- Any form of the row may be used, incl. transpositions up to 11 half steps.
- The untransposed row is labeled “0” – P0, I0, etc.
- Transposed rows are labeled P1, etc, indicating how many half steps above P0 the row is transposed.
- Matrix:
  - A way to diagram all of the possible forms a tone row may take.
  - P0 across the top; I0 down from the left. Fill in all the transposed P forms.
  - R forms right to left; RI forms up from the bottom.
- How to write music in this style.
  - Tone row and matrix.
    - The matrix is a list of all possibilities. The composer looks at the properties of the row, and chooses row forms that will work together. Usually only a few row forms are used, not the entire matrix.
    - Whatever row form you choose, you must complete it before starting another form.
    - Rhythm is not specified by the tone row. Rhythm may be serialized also, but does not have to be.
    - P0 is usually the first row to appear (but not always!) Unless the composer specifies, we can make it P0 anyway.
  - Voices:
    - The music can be chordal (one row at a time across all voices) or linear (different layers/voices may use different rows at the same time). No matter what, any row that is begun must be completed in order.
  - 12-tone pieces tend to be very short, and have a strong sense of form.
  - Variations on the rules.
    - “chords” – simultaneous pitches are still “in order.” You can’t skip any pitches, though.
    - Schonberg liked to break his rows up into smaller “Sets” of 3-4 pitches and use the sets as sound units (chords).
    - Ostinato – repeated patterns are allowed.
    - Sustain – don’t have to wait for a previous note to end before beginning the next.
- How to analyze 12-tone music?
  - Find the row, make a matrix.
  - Which row forms are present in the composition? Row analysis.
  - Thematic / formal analysis.
  - Descriptive analysis – think about how the row relates to the themes, form, rhythm. What other patterns are there? How do the sections of the piece relate to each other?
- The BACH motive – a melodic motive using Bb, A, C, B. German spellings of notes. Many composers used this motive (hiding it in their works). Bach himself used it, and it has been popular ever since, especially as a fugue subject.
  - Serialists were fascinated with this motive:
    - They would either write a row that had these four notes in order, or they would write their music so that those notes were elevated out of the texture and made obvious.
    - OR, use just the intervallic content of the motive: down m2, up m3, down m2 – then it can be referenced at any pitch level.
- Total serialism – anything else in addition to pitch can be organized/serialized (rhythm, dynamics, articulation, timbre). The different “rows” do not have to line up.